

SNB Research Report 2015

SCHWEIZERISCHE NATIONALBANK
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SNB Research Report 2015

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Preface

Ladies and Gentlemen

The SNB is pleased to present its first annual Research Report. The purpose of this report is to provide interested readers with an overview of the research conducted at the SNB. It thereby contributes to the SNB's transparency regarding its monetary and economic analysis. Moreover, the Research Report will be useful for researchers from other central banks and from the academic community, and the media might be interested in specific research results, too.

Economic research is important for central banks because it helps them fulfil their legal mandate. Economies are subject to ongoing change, and the understanding of how they work must constantly be kept up to date. The 2008–2009 financial crisis made this evident once again.

When the US subprime mortgage crisis unexpectedly impacted on global financial markets, central bank research resources quickly helped understand the underlying mechanisms. Moreover, when the severity of the crisis made central banks resort to unconventional monetary policy instruments, research made it possible to project their impact. The effectiveness of unconventional instruments and their side effects remain an object of intensive central bank research today.

Research not only contributes to the analyses on which a central bank's monetary policy and macroprudential decisions are based, it is also key in the development of a large number of tools (statistics, indexes, indicators and models) that are used in the daily implementation of monetary policy.

That said, not all research output finds immediate application. Experience shows, for instance, that research topics from which no practical benefit is initially expected can suddenly move to the centre of interest. Prominent examples include the zero lower bound and the liquidity trap, which until recently were widely considered as curiosities of monetary economics and consigned to the history of economics. Broadmindedness is often required when it comes to the question of whether a certain area of research might be useful in the future.

In contrast to other central banks, the SNB does not maintain a separate research unit. Instead, research work is integrated in a number of different units, the result being that our economists know what research questions are relevant. It also means that they apply their analytical skills not only to longer-term research projects, but to their shorter-term, day-to-day business as well.

To sum up, research at the SNB is not an end in itself, but helps us fulfil our mandate. Like all activities at the SNB, research and its resources are managed carefully. To ensure public accountability, a transparent and compact account of this activity is paramount, and this is exactly what the SNB's annual Research Report will provide.

June 2016



THOMAS J. JORDAN
Chairman of the Governing Board

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 2015.

RESEARCH PUBLICATIONS

Articles in research journals

SNB researchers published 25 articles in research journals in 2015, as was also the case in 2014 (cf. table 1).

Table 1

NUMBER OF ARTICLES IN RESEARCH JOURNALS

	2015	2014
Articles in research journals	25	25
Of which, <i>SNB Economic Studies</i>	–	1

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

Please note that 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 was slightly lower in 2015 than in the previous year. However, the number of SNB Working Papers remained stable (cf. table 2).

Table 2

NUMBER OF WORKING PAPERS

	2015	2014
Working papers	19	21
Of which, SNB Working Papers	13	13
Of which, other Working Papers	6	8

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 2015.

Table 3

FURTHER RESEARCH ACTIVITIES

	2015	2014
SNB Research Seminars	36	45
Research visitors at the SNB	5	5
SNB Research Lectures	1	–

SNB Research Seminars

The SNB invites other researchers to present their research results at seminars. In 2015, 36 research seminars took place at the SNB. This is less than in 2014, when the number was exceptionally large. About half of the researchers invited to present their work came from other central banks.

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 2015 (2014: 5):

- *Alex Cukierman*, Member of the Monetary Policy Committee of the Bank of Israel and Professor Emeritus at the Eitan Berglas School of Economics at Tel Aviv University (18 August–20 November 2015)
- *Katarina Juselius*, Professor Emeritus at the University of Copenhagen (5–6 February 2015)
- *Massimiliano Marcellino*, Professor of Econometrics at Bocconi University (23–25 March, 22–24 June and 21–23 September 2015)
- *Gunnar Bårdsen*, Professor of Economics at the Norwegian University of Science and Technology (11–13 May and 2–4 November 2015)
- *John G. Fernald*, Senior Research Advisor, International Research, Federal Reserve Bank of San Francisco (17–21 August 2015)

SNB Research Lectures

The SNB regularly invites an expert to give a research lecture on a topical research area. This is the opportunity for SNB economists to be updated on a particular topic on the frontier of research. One SNB Research Lecture took place in 2015:

- *Marco Del Negro*, Federal Reserve Bank of New York (9–13 February 2015), topic: ‘Forecasting with Bayesian DSGE and Time Series Models’

Research conferences

The SNB organises conferences, mostly in cooperation with other institutions, at the SNB or elsewhere. These conferences are the opportunity to present and discuss research papers as well as to review research in a particular area. In 2015, 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. Two conferences were merely hosted by the SNB (cf. table 4).

Table 4

CONFERENCES

	2015	2014
Conferences with the SNB	8	8
Conferences hosted by the SNB	2	1

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

2

Research publications in 2015

This chapter contains comprehensive summaries of research publications by SNB employees in 2015.

2.1 OVERVIEW

2.1.1 ARTICLES IN RESEARCH JOURNALS

- Atanasov, Victoria and Thomas Nitschka. 2015. [Foreign currency returns and systematic risks](#). *Journal of Financial and Quantitative Analysis* 50(1–2): 231–250. 15
- Auer, Raphael A. 2015. [A safe haven: International demand for Swiss francs during the euro area debt crisis](#). *SNB Quarterly Bulletin* 2015(2): 40–53. 16
- Auer, Raphael A. 2015. [Exchange rate pass-through, domestic competition and inflation: Evidence from the 2005/08 revaluation of the Renminbi](#). *Journal of Money, Credit and Banking* 47(8): 1617–1650. 16
- Auer, Raphael A. 2015. [Human capital and the dynamic effects of trade](#). *Journal of Development Economics* 117(Nov.): 107–118. 17
- Baeriswyl, Romain. 2015. [Intertemporal discoordination in the 100% reserve banking system](#). *Procesos de Mercado: Revista Europea de Economía Política* 12(2): 43–80. 17
- Baeriswyl, Romain and Lukas Altermatt. 2015. [The effect of the monetary base expansion on the balance sheet of domestic banks](#). *SNB Quarterly Bulletin* 2015(1): 34–45. 18
- Bäurle, Gregor and Elizabeth Steiner. 2015. [How do individual sectors respond to macroeconomic shocks? A structural dynamic factor approach applied to Swiss data](#). *Swiss Journal of Economics and Statistics* 151(3): 167–225. 18
- Brutti, Filippo and Philip U. Sauré. 2015. [Transmission of sovereign risk in the euro crisis](#). *Journal of International Economics* 97(2): 231–248. 19
- Christensen, Jens and Signe Krogstrup. 2015. [Transmission of asset purchases: The role of reserves](#). *FRBSF Economic Letter* (2015-20): 1–5. 19
- Danthine, Jean-Pierre and John B. Donaldson. 2015. [Executive compensation: A general equilibrium perspective](#). *Review of Economic Dynamics* 18: 269–286. 20
- Gerlach-Kristen, Petra. 2015. [The impact of ECB crisis measures on euro-area CDS spreads](#). *Financial Markets and Portfolio Management* 29(2): 149–168. 20

Gerlach-Kristen, Petra, Brian O’Connell and Conor O’Toole. 2015. Do credit constraints affect SME investment and employment? <i>The Economic and Social Review</i> 46(1): 51–86.	21
Glocker, Christian and Pascal Towbin. 2015. Reserve requirements as a macroprudential instrument – Empirical evidence from Brazil. <i>Journal of Macroeconomics</i> 44: 158–176.	21
Grise, Christian. 2015. The zero lower bound and movements in the term structure of interest rates. <i>Economics Letters</i> 131(June): 66–69.	22
Grise, Christian and Thomas Nitschka. 2015. On financial risk and the safe haven characteristics of Swiss franc exchange rates. <i>Journal of Empirical Finance</i> 32(June): 153–164.	22
Hepenstrick, Christian and Alexander Tarasov. 2015. Per capita income and the extensive margin of bilateral trade. <i>Canadian Journal of Economics</i> 48(4).	23
Hepenstrick, Christian and Alexander Tarasov. 2015. Trade openness and cross-country income differences. <i>Review of International Economics</i> 23(2): 271–302.	23
Hertweck, Matthias S. and Oliver Sigrist. 2015. The ins and outs of German unemployment: A transatlantic perspective. <i>Oxford Economic Papers</i> 67(4): 1078–1095.	24
Kraenzlin, Sébastien P. and Thomas Nellen. 2015. Access policy and money market segmentation. <i>Journal of Monetary Economics</i> 71: 1–12.	24
Mägerle, Jürg and Thomas Nellen. 2015. Interoperability between central counterparties. <i>The Journal of Financial Market Infrastructures</i> 4(2): 49–71.	25
Mancini Griffoli, Tommaso, Christoph Meyer, Jean-Marc Natal and Attilio Zanetti. 2015. Determinants of the Swiss franc real exchange rate. <i>Swiss Journal of Economics and Statistics</i> 151(4): 299–331.	25
Rosenblatt-Wisch, Rina and Rolf Scheufele. 2015. Quantification and characteristics of household inflation expectations in Switzerland. <i>Applied Economics</i> 47(26): 2699–2716.	26
Tola, Albi and Sébastien Wälti. 2015. Deciphering financial contagion in the euro area during the crisis. <i>The Quarterly Review of Economics and Finance</i> 55: 108–123.	26
Wunderli, Dan and Michael Wolf. 2015. Bootstrap joint prediction regions. <i>Journal of Time Series Analysis</i> 36(3): 352–376.	27
Yesin, Pinar. 2015. Capital flow waves to and from Switzerland before and after the financial crisis. <i>Swiss Journal of Economics and Statistics</i> 151(1): 27–75.	27

2.1.2 WORKING PAPERS

Andries, Alin, Andreas M. Fischer and Pinar Yesin. 2015. <i>The impact of international swap lines on stock returns of banks in emerging markets.</i> SNB Working Papers 2015-07.	28
Baeriswyl, Romain and Camille Cornand. 2015. <i>The distortionary effect of monetary policy: Credit expansion vs. lump-sum transfers in the lab.</i> GATE Working Papers 1516.	29
Berentsen, Aleksander, Sébastien P. Kraenzlin and Benjamin Müller. 2015. <i>Exit strategies and trade dynamics in Repo markets.</i> SNB Working Papers 2015-09.	29
Beutler, Toni, Robert Bichsel, Adrian Bruhin and Jayson Danton. 2015. <i>The impact of interest rate risk on bank lending.</i> Study Center Gerzensee Working Papers 15.05.	30
Christensen, Jens and Signe Krogstrup. 2015. <i>Transmission of quantitative easing: The role of central bank reserves.</i> SNB Working Papers 2015-06.	30
Föllmi, Reto, Sandra Hanslin and Andreas Kohler. 2015. <i>A dynamic North-South model of demand-induced product cycles.</i> SNB Working Papers 2015-04.	31
Fuhrer, Lucas Marc, Basil Guggenheim and Silvio Schumacher. 2015. <i>Re-use of collateral in the repo market.</i> SNB Working Papers 2015-02.	31
Gerlach-Kristen, Petra and Seán Lyons. 2015. <i>Mortgage arrears in Europe: The impact of monetary and macroprudential policies.</i> SNB Working Papers 2015-05.	32
Gyntelberg, Jacob, Mico Loretan and Tientip Subhanij. 2015. <i>Private information, capital flows, and exchange rates.</i> SNB Working Papers 2015-12.	32
Juselius, Katarina and Katrin Assenmacher-Wesche. 2015. <i>Real exchange rate persistence: The case of the Swiss franc-US dollar rate.</i> SNB Working Papers 2015-03.	33
Kaufmann, Daniel and Rolf Scheufele. 2015. <i>Business tendency surveys and macroeconomic fluctuations.</i> KOF Working Papers 378.	33
Krogstrup, Signe and Cédric Tille. 2015. <i>On the roles of different foreign currencies in European bank lending.</i> CEPR Discussion Papers 10845.	34
Mirkov, Nikola and Andreas Steinhauer. 2015. <i>Ben Bernanke vs. Janet Yellen: Exploring the (a)symmetry of individual and aggregate inflation expectations.</i> SNB Working Papers 2015-10.	34
Nellen, Thomas. 2015. <i>Collateralised liquidity, two-part tariff and settlement coordination.</i> SNB Working Papers 2015-13.	35
Nitschka, Thomas. 2015. <i>Is there a too-big-to-fail discount in excess returns on German banks' stocks?</i> SNB Working Papers 2015-08.	35

Sauré, Philip U. 2015. The resilient trade surplus, the pharmaceutical sector, and exchange rate assessments in Switzerland. Peterson Institute for International Economics Working Paper Series 15-11.	36
Sauré, Philip U. 2015. Time-intensive R&D and unbalanced trade. SNB Working Papers 2015-11.	36
Towbin, Pascal and Sebastian Weber. 2015. Price expectations and the U.S. housing boom. IMF Working Papers 15/182.	37
Yesin, Pinar. 2015. Capital flow waves to and from Switzerland before and after the financial crisis. SNB Working Papers 2015-01.	37

2.2 ARTICLES IN RESEARCH JOURNALS

This section contains comprehensive summaries of articles by SNB employees published in research journals in 2015.

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

2.2.1 FOREIGN CURRENCY RETURNS AND SYSTEMATIC RISKS

REFERENCE

Atanasov, Victoria and Thomas Nitschka. 2015. [Foreign currency returns and systematic risks](#). *Journal of Financial and Quantitative Analysis* 50(1–2): 231–250.

AFFILIATION OF THE AUTHOR(S)

Victoria Atanasov: VU University Amsterdam

Thomas Nitschka: SNB

ABSTRACT

We apply an empirical approximation on the intertemporal CAPM to show that cross-sectional dispersion in currency returns can be rationalized by differences in currency excess returns' sensitivities to the market return's cash-flow news component. This finding echoes recent explanations of the value and growth stock market anomaly. The distinction between cash-flow news and discount-rate news is key to jointly explain average stock and currency returns. Our analysis reveals a common source of systematic risk in stock and foreign currency returns that is reflected in the market return's cash-flow news component.

KEYWORDS

currency returns, cash-flow news, discount-rate news, market return, uncovered interest rate parity

JEL CLASSIFICATION

F31

WORKING PAPER VERSION

Galsband, Victoria and Thomas Nitschka. 2011. [Foreign currency returns and systematic risks](#). SNB Working Papers 2011-03.

2.2.2 A SAFE HAVEN: INTERNATIONAL DEMAND FOR SWISS FRANCS DURING THE EURO AREA DEBT CRISIS

REFERENCE

Auer, Raphael A. 2015. [A safe haven: International demand for Swiss francs during the euro area debt crisis](#). *SNB Quarterly Bulletin* 2015(2): 40–53.

AFFILIATION OF THE AUTHOR(S)

Raphael A. Auer: SNB

ABSTRACT

How large was the international demand for Swiss franc (CHF) during the peak of the European debt crisis, through what channels was this demand realised, and what are the financial risks created by the rapid inflow of funds? Whereas the demand for CHF during earlier periods can be attributed to both domestic residents and non-residents, this paper focuses on the demand from non-residents and documents that from August 2011 to February 2013, parties from outside Switzerland accumulated CHF 132 billion via Swiss bank accounts and increased their exposure by a further CHF 42 billion through ownership of CHF-denominated bonds and shares of Swiss companies. Most of these positions were acquired through banks that are physically located in Switzerland, but foreign-owned. In particular, CHF 78 billion were accumulated through the Swiss branch offices of foreign-domiciled international banks, which caused the balance sheets of those branches to increase almost fivefold. Despite the large amounts involved, the financial stability of these branch offices would not be threatened should the safe-haven flows reverse sharply at some point in the future. The reason is that the inflows are almost entirely invested in sight deposit accounts at the Swiss National Bank (SNB) and can thus be withdrawn at short notice without creating financial turmoil.

KEYWORDS

capital flows, exchange rate, safe haven currencies, Swiss franc, Swiss National Bank

JEL CLASSIFICATION

F32

2.2.3 EXCHANGE RATE PASS-THROUGH, DOMESTIC COMPETITION AND INFLATION: EVIDENCE FROM THE 2005/08 REVALUATION OF THE RENMINBI

REFERENCE

Auer, Raphael A. 2015. [Exchange rate pass-through, domestic competition and inflation: Evidence from the 2005/08 revaluation of the Renminbi](#). *Journal of Money, Credit and Banking* 47(8): 1617–1650.

AFFILIATION OF THE AUTHOR(S)

Raphael A. Auer: SNB

ABSTRACT

Import competition from China is pervasive in the sense that for many good categories, the competitive environment that US firms face in these markets is strongly driven by the prices of Chinese imports, and so is their pricing decision. This paper quantifies the effect of the government-controlled appreciation of the Chinese renminbi vis-à-vis the USD from 2005 to 2008 on the prices charged by US domestic producers. In a panel spanning the period from 1994 to 2010 and including up to 519 manufacturing sectors, import price changes of Chinese goods pass into US producer prices at an average rate of 0.7, while import price changes that can be traced back to exchange rate movements of other trade partners only have mild effects on US prices. Further analysis points to the importance of trade integration, variable markups, and demand complementarities on the one side, and to the importance of imported intermediate goods on the other side as drivers of these patterns. Simulations incorporating these microeconomic findings reveal that a substantial revaluation of the renminbi would result in a pronounced increase of aggregate US producer price inflation.

KEYWORDS

China, exchange rate pass-through, inflation, monetary policy, price complementarities

JEL CLASSIFICATION

E31

WORKING PAPER VERSION(S)

Auer, Raphael A. 2012. [Exchange rate pass-through, domestic competition, and inflation: Evidence from the 2005/08 revaluation of the Renminbi](#). SNB Working Papers 2012-01.

2.2.4 HUMAN CAPITAL AND THE DYNAMIC EFFECTS OF TRADE

REFERENCE

Auer, Raphael A. 2015. [Human capital and the dynamic effects of trade](#). *Journal of Development Economics* 117(Nov.): 107–118.

AFFILIATION OF THE AUTHOR(S)

Raphael A. Auer: SNB

ABSTRACT

This paper examines the cross-country income and welfare consequences of trade-induced human capital (dis-)accumulation. The model is based on heterogeneous workers who make educational decisions in the presence of complete markets. When such heterogeneous workers invest in schooling, high type agents earn a surplus from their investment. In the presence of cross-country differences in skill-augmenting technology, trade shifts this surplus to rich countries that can use skills more efficiently. Thus, while the static gains from trade may lead to convergence, the dynamic gains from trade occur to initially rich countries, thus leading to cross-country divergence of income and welfare. The second part of the paper endogenizes world prices, documenting that as trade liberalization concentrates skills in countries with a high level of skill augmenting technology, it thereby increases the effective global supply of skilled labor. Despite the resulting decline in the price of skill-intensive goods, trade is shown to be skill-biased.

KEYWORDS

economic growth, employment, factor content of trade, human capital, import competition

JEL CLASSIFICATION

F16

WORKING PAPER VERSION

Auer, Raphael A. 2010. [Are imports from rich nations deskilling emerging economies? Human capital and the dynamic effects of trade](#). SNB Working Papers 2010-18.

2.2.5 INTERTEMPORAL DISCOORDINATION IN THE 100% RESERVE BANKING SYSTEM

REFERENCE

Baeriswyl, Romain. 2015. [Intertemporal discoordination in the 100% reserve banking system](#). *Procesos de Mercado: Revista Europea de Economía Política* 12(2): 43–80.

AFFILIATION OF THE AUTHOR(S)

Romain Baeriswyl: SNB

ABSTRACT

The 100%-Money plan advocated by Fisher (1936) has a Misesian flavor as it aims at mitigating intertemporal discoordination by reducing (i) the discrepancy between investment and voluntary savings, and (ii) the manipulation of interest rates by monetary injections. Recent proposals to adopt the 100% reserve banking system, such as the Chicago Plan Revisited by Benes and Kumhof (2013) or the Limited Purpose Banking by Kotlikoff (2010), take, however, a fundamentally different attitude towards the role of the central bank in the credit market and ignore that intertemporal discoordination arises independently from whether the credit expansion is financed by the creation of outside or inside money. These plans allow the central bank to inject outside money into the credit market and to effectively lower interest rates in negative territory in order to overcome the limit that the liquidity trap sets to credit expansion in the fractional reserve system. Although such an attempt may succeed in stimulating the economy in the short run, it exacerbates intertemporal discoordination and weakens economic stability in the long run.

KEYWORDS

monetary systems, 100 percent reserve banking, Chicago Plan, Austrian business cycles

JEL CLASSIFICATION

E42

2.2.6 THE EFFECT OF THE MONETARY BASE EXPANSION ON THE BALANCE SHEET OF DOMESTIC BANKS

REFERENCE

Baeriswyl, Romain and Lukas Altermatt. 2015. [The effect of the monetary base expansion on the balance sheet of domestic banks](#). *SNB Quarterly Bulletin* 2015(1): 34–45.

AFFILIATION OF THE AUTHOR(S)

Romain Baeriswyl: SNB

Lukas Altermatt: University of Basel

ABSTRACT

This paper describes the balance sheet counterparts of the increase in Swiss franc deposits held by domestic banks at the SNB, and of the growth in Swiss franc deposits held by the public at domestic banks. It traces the growth in Switzerland's monetary aggregates since 2008 to its various sources. The results indicate that about two-thirds of the increase in Swiss franc deposits held by the public at domestic banks results from loans granted by these banks to households and firms, whereas about one-third can be attributed directly to the market operations conducted by the SNB to expand the monetary base and thereby the banks' liquidity.

KEYWORDS

banks' balance sheets, unconventional measures, liquidity injections, Swiss franc, Swiss National Bank

JEL CLASSIFICATION

E51

2.2.7 HOW DO INDIVIDUAL SECTORS RESPOND TO MACROECONOMIC SHOCKS? A STRUCTURAL DYNAMIC FACTOR APPROACH APPLIED TO SWISS DATA

REFERENCE

Bäurle, Gregor and Elizabeth Steiner. 2015. [How do individual sectors respond to macroeconomic shocks? A structural dynamic factor approach applied to Swiss data](#). *Swiss Journal of Economics and Statistics* 151(3): 167–225.

AFFILIATION OF THE AUTHOR(S)

Gregor Bäurle: SNB

Elizabeth Steiner: SNB

ABSTRACT

This paper quantifies the impact of monetary policy, exchange rates and external demand on the production sectors of the Swiss economy. As the model covers the full set of production sectors it is possible through aggregation to estimate the impact of a given shock on total GDP. We conduct the analysis in the framework of a Bayesian structural dynamic factor model. Our approach proves to be useful to cope with the large data set and at the same time allows us to consistently identify fundamental aggregate shocks. We find that monetary variables, such as interest rates and exchange rates, mainly influence the financial sectors. Variations in value added in the manufacturing sectors or business services, on the other hand, are markedly influenced by changes in external demand, but show a weaker and slower reaction to monetary variables.

KEYWORDS

sectoral value added, dynamic factor model, sign restrictions, Switzerland

JEL CLASSIFICATION

E32

WORKING PAPER VERSION

Bäurle, Gregor and Elizabeth Steiner. 2013. [How do individual sectors respond to macroeconomic shocks? A structural dynamic factor approach applied to Swiss data](#). SNB Working Papers 2013-09.

2.2.8 TRANSMISSION OF SOVEREIGN RISK IN THE EURO CRISIS

REFERENCE

Brutti, Filippo and Philip U. Sauré. 2015. [Transmission of sovereign risk in the euro crisis](#). *Journal of International Economics* 97(2): 231–248.

AFFILIATION OF THE AUTHOR(S)

Filippo Brutti: UBS
Philip U. Sauré: SNB

ABSTRACT

We assess the role of financial linkages for the transmission of sovereign risk in the Euro crisis. Building on the narrative approach by Romer and Romer (1989, 2010) and augmented by Mertens and Ravn (2013), we use financial news to identify structural shocks in a vector autoregressive model of daily sovereign CDS premia for eleven European countries. To estimate how these shocks transmit across borders, we use data on crosscountry bank exposures to sovereign debt. Our results indicate that cross-border financial exposures constitute important transmission channels: a reduction of exposure to overall Greek debt by one standard deviation is associated with a reduction in the response of the sovereign CDS to a shock to Greek sovereign risk by about three-quarters in the average country. Decomposing these effects, we find that exposures to sovereign debt constitute significant transmission channels, while we find no robust support for transmission through bank-to-bank lending.

KEYWORDS

cross-country transmission, Sovereign risk, financial linkages, euro crisis, narrative approach

JEL CLASSIFICATION

F36

WORKING PAPER VERSION

Brutti, Filippo and Philip U. Sauré. 2012. [Transmission of sovereign risk in the Euro crisis](#). Study Center Gerzensee Working Papers 12.01.

2.2.9 TRANSMISSION OF ASSET PURCHASES: THE ROLE OF RESERVES

REFERENCE

Christensen, Jens and Signe Krogstrup. 2015. [Transmission of asset purchases: The role of reserves](#). *FRBSF Economic Letter* (2015-20): 1–5.

AFFILIATION OF THE AUTHOR(S)

Jens Christensen: Federal Reserve Bank of San Francisco
Signe Krogstrup: SNB

ABSTRACT

The Swiss National Bank expanded bank reserves as part of its unconventional monetary policy during the European sovereign debt crisis. The unprecedented expansion involved short-term rather than long-term asset purchases. This approach provides novel insights into how central bank balance sheet expansions affect interest rates. In particular, it illustrates how an expansion of reserves can lower long-term yields through a reserve-induced portfolio balance effect that is independent of the assets purchased.

KEYWORDS

unconventional monetary policy, reserve-induced portfolio balance channel, term structure modelling, Swiss National Bank

JEL CLASSIFICATION

E52

WORKING PAPER VERSION

Christensen, Jens and Signe Krogstrup. 2015. [Transmission of quantitative easing: The role of central bank reserves](#). SNB Working Papers 2015-06.

2.2.10 EXECUTIVE COMPENSATION: A GENERAL EQUILIBRIUM PERSPECTIVE

REFERENCE

Danthine, Jean-Pierre and John B. Donaldson. 2015. [Executive compensation: A general equilibrium perspective](#). *Review of Economic Dynamics* 18: 269–286.

AFFILIATION OF THE AUTHOR(S)

Jean-Pierre Danthine: SNB

John B. Donaldson: Columbia University

ABSTRACT

We study the dynamic general equilibrium of an economy where risk averse shareholders delegate the management of the firm to risk averse managers. The optimal contract has two main components: an incentive component corresponding to a non-traded equity position and a variable ‘salary’ component indexed to the aggregate wage bill and to aggregate dividends. Tying a manager’s compensation to the performance of her own firm ensures that her interests are aligned with the goals of firm owners and that maximizing the discounted sum of future dividends will be her objective. Linking managers’ compensation to overall economic performance is also required to make sure that managers use the appropriate stochastic discount factor to value those future dividends. General equilibrium considerations thus provide a potential resolution of the ‘pay for luck’ puzzle. We also demonstrate that one sided ‘relative performance evaluation’ follows equally naturally when managers and shareholders display differential risk averse.

KEYWORDS

incentives, optimal contracting, stochastic discount factor, pay-for-luck, relative performance

JEL CLASSIFICATION

E44

WORKING PAPER VERSION

Danthine, Jean-Pierre and John B. Donaldson. 2010.

[Executive Compensation: A General Equilibrium Perspective](#). SNB Working Papers 2010-19.

2.2.11 THE IMPACT OF ECB CRISIS MEASURES ON EURO-AREA CDS SPREADS

REFERENCE

Gerlach-Kristen, Petra. 2015. [The impact of ECB crisis measures on euro-area CDS spreads](#). *Financial Markets and Portfolio Management* 29(2): 149–168.

AFFILIATION OF THE AUTHOR(S)

Petra Gerlach-Kristen: SNB

ABSTRACT

This paper studies euro-area CDS spreads during the financial crisis with the aim of discovering which of the ECB’s open-market operations reduced bank and government spreads. After controlling for potential contagion across the financial system, it is found that effects vary across operations. Purchases under the Covered Bond Purchase Programme seem to have reduced spreads, as did the announcement of the Securities Market Programme. Actual SMP purchases, however, appear to have raised spreads, perhaps because markets took them as a sign of policymaker concern about the financial system. The same is true for the announcement of the three-year repos.

KEYWORDS

CDS spreads, ECB, sovereign debt crisis, open-market operations

JEL CLASSIFICATION

E52

2.2.12 DO CREDIT CONSTRAINTS AFFECT SME INVESTMENT AND EMPLOYMENT?

REFERENCE

Gerlach-Kristen, Petra, Brian O’Connell and Conor O’Toole. 2015. [Do credit constraints affect SME investment and employment?](#) *The Economic and Social Review* 46(1): 51–86.

AFFILIATION OF THE AUTHOR(S)

Petra Gerlach-Kristen: SNB
Brian O’Connell: Indecon Intl Economic Consultants
Conor O’Toole: Central Bank of Ireland

ABSTRACT

This paper explores the potential presence of credit constraints confronting Irish SMEs and investigates the impact of these constraints on firms’ employment and investment. Using new survey data collected by the Department of Finance, we define firms as credit rationed or discouraged borrowers and link these constraints to employment and the propensity to invest. We find a negative and significant effect of SME credit constraints on employment for firms that are discouraged from applying for credit. We also find a negative effect of constraints on the probability of an SME investing. This effect is driven by firms who are credit rationed when seeking capacity expansion loans.

KEYWORDS

financial crisis, credit constraints, investment, employment, SMEs

JEL CLASSIFICATION

D22

2.2.13 RESERVE REQUIREMENTS AS A MACROPRUDENTIAL INSTRUMENT – EMPIRICAL EVIDENCE FROM BRAZIL

REFERENCE

Glocker, Christian and Pascal Towbin. 2015. [Reserve requirements as a macroprudential instrument – Empirical evidence from Brazil.](#) *Journal of Macroeconomics* 44: 158–176.

AFFILIATION OF THE AUTHOR(S)

Christian Glocker: Banque de France
Pascal Towbin: SNB

ABSTRACT

Emerging market central banks are often reluctant to raise interest rates when facing credit booms driven by capital inflows, and they instead use reserve requirements as an additional instrument. We compare the macroeconomic effects of interest rate and reserve requirement shocks by estimating a structural vector autoregressive model for Brazil. For both instruments, discretionary tightening results in a credit decline. Contrary to an interest rate shock, however, a positive reserve requirement shock leads to an exchange rate depreciation, a current account improvement, and an increase in prices. The different effects highlight the role of reserve requirement policy as a complement to rather than a substitute for interest rate policy. The results support the bank lending channel as the main transmission mechanism for reserve requirement policy.

KEYWORDS

reserve requirements, capital flows, central bank policy, macroprudential policy

JEL CLASSIFICATION

E58

2.2.14 THE ZERO LOWER BOUND AND MOVEMENTS IN THE TERM STRUCTURE OF INTEREST RATES

REFERENCE

Grise, Christian. 2015. [The zero lower bound and movements in the term structure of interest rates](#). *Economics Letters* 131(June): 66–69.

AFFILIATION OF THE AUTHOR(S)

Christian Grise: SNB

ABSTRACT

The expectations hypothesis of the term structure implies a nonlinear relationship between short and long-term rates if nominal interest rates are constrained by the zero lower bound (ZLB). This paper finds limited evidence for such nonlinearities in the US term structure. The sensitivity of medium-term yields to short rate movements declined, but there is no evidence for asymmetric responses to positive versus negative short rate changes.

KEYWORDS

monetary policy, zero lower bound, yield curve

JEL CLASSIFICATION

E43

2.2.15 ON FINANCIAL RISK AND THE SAFE HAVEN CHARACTERISTICS OF SWISS FRANC EXCHANGE RATES

REFERENCE

Grise, Christian and Thomas Nitschka. 2015. [On financial risk and the safe haven characteristics of Swiss franc exchange rates](#). *Journal of Empirical Finance* 32(June): 153–164.

AFFILIATION OF THE AUTHOR(S)

Christian Grise: SNB

Thomas Nitschka: SNB

ABSTRACT

We analyse bilateral Swiss franc exchange rate returns in an asset pricing framework to evaluate the Swiss franc's safe haven characteristics. A 'safe haven' currency is a currency that offers hedging value against global risk, both on average and in particular in crisis episodes. To explore these issues we estimate the relationship between exchange rate returns and risk factors in augmented UIP regressions, using recently developed econometric methods to account for the possibility that the regression coefficients may be changing over time. Our results highlight that in response to increases in global risk the Swiss franc appreciates against the euro as well as against typical carry trade investment currencies such as the Australian dollar, but depreciates against the US dollar, the Yen and the British pound. Thus, the Swiss franc exhibits safe-haven characteristics against many, but not all other currencies. We find statistically significant time variation in the relationship between Swiss franc returns and risk factors, with this link becoming stronger in times of stress.

KEYWORDS

exchange rate, risk factors, safe haven, Swiss franc, uncovered interest rate parity

JEL CLASSIFICATION

F31

WORKING PAPER VERSION

Grise, Christian and Thomas Nitschka. 2013. [On financial risk and the safe haven characteristics of Swiss franc exchange rates](#). SNB Working Papers 2013-04.

2.2.16 PER CAPITA INCOME AND THE EXTENSIVE MARGIN OF BILATERAL TRADE

REFERENCE

Hepenstrick, Christian and Alexander Tarasov. 2015. [Per capita income and the extensive margin of bilateral trade](#). *Canadian Journal of Economics* 48(4).

AFFILIATION OF THE AUTHOR(S)

Christian Hepenstrick: SNB

Alexander Tarasov: University of Munich

ABSTRACT

This paper quantitatively explores the role of the demand structure in explaining the relationship between an importer's per capita income and the extensive margin of bilateral trade. The underlying mechanism is based on the fact that agents expand the set of goods they consume with income. This in turn affects the structure of a country's import demand and therewith the extensive margin of trade. We formalize this intuition by incorporating preferences that allow for binding non-negativity constraints into an otherwise standard Ricardian multi-country model. We quantify the model using the data on US consumer expenditures and aggregate values of bilateral trade flows and find that the behavior of the model's extensive margin of bilateral trade is consistent with the data (as opposed to the standard model). Two popular counterfactual experiments – lower trade costs and the rise of China and India – demonstrate that the mechanism outlined in this paper is indeed quantitatively important.

KEYWORDS

non-homothetic preferences, extensive margin, Ricardian trade

JEL CLASSIFICATION

F11

2.2.17 TRADE OPENNESS AND CROSS-COUNTRY INCOME DIFFERENCES

REFERENCE

Hepenstrick, Christian and Alexander Tarasov. 2015. [Trade openness and cross-country income differences](#). *Review of International Economics* 23(2): 271–302.

AFFILIATION OF THE AUTHOR(S)

Christian Hepenstrick: SNB

Alexander Tarasov: University of Munich

ABSTRACT

This paper asks how variations in trade openness contribute to cross-country income differences. We approach this question using counterfactual experiments within a quantified general equilibrium model of trade. We find that trade costs gain their relevance only by amplifying the effects of existing differences in endowments, population sizes and technologies. If, for example, market entry costs were the same in all countries, inequality would be about 13% lower. Variable trade costs are found to have a similar effect. In contrast, if countries differed only by their degree of trade openness, the resulting variance of per capita income would be negligible.

KEYWORDS

general equilibrium, market access costs, development accounting, counterfactual experiments

JEL CLASSIFICATION

F12

2.2.18 THE INS AND OUTS OF GERMAN UNEMPLOYMENT: A TRANSATLANTIC PERSPECTIVE

REFERENCE

Hertweck, Matthias S. and Oliver Sigrist. 2015. [The ins and outs of German unemployment: A transatlantic perspective](#). *Oxford Economic Papers* 67(4): 1078–1095.

AFFILIATION OF THE AUTHOR(S)

Matthias S. Hertweck: University of Konstanz
Oliver Sigrist: SNB

ABSTRACT

This article decomposes fluctuations in the German unemployment rate into changes in inflows (job separation) and outflows (job finding). For this purpose, we construct and examine monthly labour market transition rates from the West German sample of the SOEP (and the CPS) for the period 1984–2009. We explicitly take account of the low level of labour market transition rates in Germany. Our article shows that in West Germany, changes in the inflow rate are more important (about 60%) than changes in the outflow rate, whereas in the USA close to 80% are due to changes in the outflow rate.

KEYWORDS

labor market, unemployment, dynamics, decomposition, Germany

JEL CLASSIFICATION

E24

2.2.19 ACCESS POLICY AND MONEY MARKET SEGMENTATION

REFERENCE

Kraenzlin, Sébastien P. and Thomas Nellen. 2015. [Access policy and money market segmentation](#). *Journal of Monetary Economics* 71: 1–12.

AFFILIATION OF THE AUTHOR(S)

Sébastien P. Kraenzlin: SNB
Thomas Nellen: SNB

ABSTRACT

Deviations between interest rates paid in the Swiss franc unsecured money market and the respective Libor rate are analysed for a period spanning the financial crisis. First, banks that have access to sources of secured central bank and interbank funding pay less than other banks. Second, foreign banks (not chartered in Switzerland) pay more than domestic banks. Third, both lines of segmentation are economically relevant but limited due to open access to sources of secured funding. Thus, access policy matters for monetary policy implementation and financial stability.

KEYWORDS

access policy, access to central bank money, money market segmentation, monetary policy implementation, financial stability, Swiss franc

JEL CLASSIFICATION

E58

WORKING PAPER VERSION

Kraenzlin, Sébastien P. and Thomas Nellen. 2012. [Access policy and money market segmentation](#). SNB Working Papers 2012-12.

2.2.20 INTEROPERABILITY BETWEEN CENTRAL COUNTERPARTIES

REFERENCE

Mägerle, Jürg and Thomas Nellen. 2015. [Interoperability between central counterparties](#). *The Journal of Financial Market Infrastructures* 4(2): 49–71.

AFFILIATION OF THE AUTHOR(S)

Jürg Mägerle: SNB
Thomas Nellen: SNB

ABSTRACT

This paper analyzes the risk management and regulation of financial exposures resulting from links between central counterparties (CCPs). Interoperability is shown to enable a fragmented clearing system to reduce exposures between CCPs and their participants to the optimal benchmark of a single CCP. This comes at the cost of newly established exposures between CCPs. Due to concerns about the systemic risk implications of a formerly applied cross-CCP risk management model of European cash equity CCPs, responsible regulators have issued guidelines to eliminate systemic risk. These guidelines are shown to come at the cost of collateral requirements exceeding the optimal level. Two approaches are investigated that help to reduce collateral requirements while containing systemic risk.

KEYWORDS

interoperability between central counterparties, financial network, systemic risk

JEL CLASSIFICATION

G28

WORKING PAPER VERSION

Mägerle, Jürg and Thomas Nellen. 2011. [Interoperability between central counterparties](#). SNB Working Papers 2011-12.

2.2.21 DETERMINANTS OF THE SWISS FRANC REAL EXCHANGE RATE

REFERENCE

Mancini Griffoli, Tommaso, Christoph Meyer, Jean-Marc Natal and Attilio Zanetti. 2015. [Determinants of the Swiss franc real exchange rate](#). *Swiss Journal of Economics and Statistics* 151(4): 299–331.

AFFILIATION OF THE AUTHOR(S)

Tommaso Mancini Griffoli: SNB, on foreign assignment (IMF)
Christoph Meyer: SNB
Jean-Marc Natal: SNB, on foreign assignment (IMF)
Attilio Zanetti: SNB

ABSTRACT

We conduct an empirical investigation of the determinants of the Swiss franc (CHF) real exchange rate. Theory and related empirical papers suggest various specific factors as potential determinants. We select some of these factors, and test their significance and magnitude in affecting the course of the CHF real exchange rate. Results stemming from a co-integration approach point to terms of trade and relative government spending as the most significant explanatory variables. Balassa-Samuelson effects do not play any significant role. Our results also confirm that this kind of empirical approach is sensitive to the choice of explanatory variables, panel countries and sample periods. In our case, the importance of GDP per capita and net foreign assets as explanatory variables depends on the inclusion in the panel of the JPY/CHF exchange rate.

KEYWORDS

real exchange rate, Balassa-Samuelson, net foreign assets, terms of trade, government consumption, productivity, DOLS, Swiss franc

JEL CLASSIFICATION

F31

WORKING PAPER VERSION

Mancini Griffoli, Tommaso, Christoph Meyer, Jean-Marc Natal and Attilio Zanetti. 2014. [Determinants of the Swiss franc real exchange rate](#). SNB Working Papers 2014-08.

2.2.22 QUANTIFICATION AND CHARACTERISTICS OF HOUSEHOLD INFLATION EXPECTATIONS IN SWITZERLAND

REFERENCE

Rosenblatt-Wisch, Rina and Rolf Scheufele. 2015. [Quantification and characteristics of household inflation expectations in Switzerland](#). *Applied Economics* 47(26): 2699–2716.

AFFILIATION OF THE AUTHOR(S)

Rina Rosenblatt-Wisch: SNB

Rolf Scheufele: SNB

ABSTRACT

Inflation expectations are a key variable in conducting monetary policy. However, these expectations are generally unobservable and only certain proxy variables exist, such as surveys on inflation expectations. This article offers guidance on the appropriate quantification of household inflation expectations in the Swiss Consumer Survey, where answers are qualitative in nature. We apply and evaluate different variants of the probability approach and the regression approach; we demonstrate that models that include answers on perceived inflation and allow for timevarying response thresholds yield the best results; and we show why the originally proposed approach of Fluri and Spörndli (1987) has resulted in heavily biased inflation expectations since the mid-1990s. Furthermore, we discuss some of the key features of Swiss household inflation expectations, i.e. the fact that there has been a shift in expectation formation since 2000 (expectations are better anchored and less adaptive, and there is lower disagreement of expectations). We suggest that this may be linked to the Swiss National Bank's adjustment of its monetary policy framework around this time. In addition, we outline how expectation formation in Switzerland is in line with the sticky information model, where information disseminates slowly from professional forecasters to households.

KEYWORDS

inflation expectations, quantification of qualitative surveys, credibility, expectation formation, sticky information, Switzerland, Swiss National Bank

JEL CLASSIFICATION

E31

WORKING PAPER VERSION

Rosenblatt-Wisch, Rina and Rolf Scheufele. 2014. [Quantification and characteristics of household inflation expectations in Switzerland](#). SNB Working Papers 2014-11.

2.2.23 DECIPHERING FINANCIAL CONTAGION IN THE EURO AREA DURING THE CRISIS

REFERENCE

Tola, Albi and Sébastien Wälti. 2015. [Deciphering financial contagion in the euro area during the crisis](#). *The Quarterly Review of Economics and Finance* 55: 108–123.

AFFILIATION OF THE AUTHOR(S)

Albi Tola: SNB

Sébastien Wälti: SNB, on foreign assignment (IMF)

ABSTRACT

Financial market interdependence has been at the epicenter of the crisis in the euro area. This paper tests for the existence of financial contagion during this crisis, defined as the international transmission of country-specific shocks beyond the normal channels of financial interdependence. Since contagion relates purely to country-specific shocks, we combine the standard contagion test of Favero and Giavazzi (2002) with a narrative approach to separate out global and euro area shocks from country-specific shocks. Financial contagion has been widespread during the crisis in the euro area. Three quarters of country-specific shocks are contagious over the whole sample period. But the proportion of contagious country-specific shocks has fallen markedly after the “whatever it takes” announcement in July 2012.

KEYWORDS

contagion, sovereign bond, euro, financial crisis, narrative approach

JEL CLASSIFICATION

F36

2.2.24 BOOTSTRAP JOINT PREDICTION REGIONS

REFERENCE

Wunderli, Dan and Michael Wolf. 2015. [Bootstrap joint prediction regions](#). *Journal of Time Series Analysis* 36(3): 352–376.

AFFILIATION OF THE AUTHOR(S)

Dan Wunderli: SNB

Michael Wolf: University of Zurich

ABSTRACT

Many statistical applications require the forecast of a random variable of interest over several periods into the future. The sequence of individual forecasts, one period at a time, is called a path forecast, where the term path refers to the sequence of individual future realizations of the random variable. The problem of constructing a corresponding joint prediction region has been rather neglected in the literature so far: such a region is supposed to contain the entire future path with a prespecified probability. We develop bootstrap methods to construct joint prediction regions. The resulting regions are proven to be asymptotically consistent under a mild high-level assumption. We compare the finite-sample performance of our joint prediction regions with some previous proposals via Monte Carlo simulations. An empirical application to a real data set is also provided.

KEYWORDS

generalized error rates, path forecast, simultaneous prediction intervals

JEL CLASSIFICATION

C53

2.2.25 CAPITAL FLOW WAVES TO AND FROM SWITZERLAND BEFORE AND AFTER THE FINANCIAL CRISIS

REFERENCE

Yesin, Pinar. 2015. [Capital flow waves to and from Switzerland before and after the financial crisis](#). *Swiss Journal of Economics and Statistics* 151(1): 27–75.

AFFILIATION OF THE AUTHOR(S)

Pinar Yesin: SNB

ABSTRACT

This paper first shows that capital inflows to and outflows from financial centers were disproportionately affected by the global financial crisis. Switzerland was no exception. The paper then identifies waves of capital flows to and from Switzerland from 2000:Q1 to 2014:Q2 by using a simple statistical method. The analysis shows that private capital inflows to and outflows from Switzerland have become exceptionally muted and less volatile since the crisis. Further, strong and long-lasting ‘home bias’ behavior can be observed for both Swiss and foreign investors. By contrast, net private capital flows have shown significantly higher volatility since the financial crisis, frequently registering extreme movements driven by extreme movements in bank lending flows. These findings suggest that the financial crisis generated a breaking point for capital flows to and from Switzerland.

KEYWORDS

private capital flows, inflows, outflows, surges, stops, retrenchment, flight, Switzerland

JEL CLASSIFICATION

F21

WORKING PAPER VERSION

Yesin, Pinar. 2015. [Capital flow waves to and from Switzerland before and after the financial crisis](#). SNB Working Papers 2015-01.

2.3 WORKING PAPERS

This section contains comprehensive summaries of working papers written by SNB employees in 2015.

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

2.3.1 THE IMPACT OF INTERNATIONAL SWAP LINES ON STOCK RETURNS OF BANKS IN EMERGING MARKETS

REFERENCE

Andries, Alin, Andreas M. Fischer and Pinar Yesin. 2015. [The impact of international swap lines on stock returns of banks in emerging markets](#). SNB Working Papers 2015-07.

AFFILIATION OF THE AUTHOR(S)

Alin Andries: University of Iasi

Andreas M. Fischer: SNB

Pinar Yesin: SNB

ABSTRACT

This paper investigates the impact of international swap lines on stock returns using data from banks in emerging markets. The analysis shows that swap lines by the Swiss National Bank (SNB) had a positive impact on bank stocks in Central and Eastern Europe. It then highlights the importance of individual bank characteristics in identifying the impact of swap lines on bank stocks. Bank-level evidence suggests that stock prices of local and less-well capitalized banks responded strongly to SNB swap lines. This new evidence is consistent with the view that swap lines not only enhanced market liquidity but also reduced risks associated with micro-prudential issues.

KEYWORDS

swap lines, foreign currency loans, bank stocks, emerging markets, Swiss National Bank

JEL CLASSIFICATION

G15

2.3.2 THE DISTORTIONARY EFFECT OF MONETARY POLICY: CREDIT EXPANSION VS. LUMP-SUM TRANSFERS IN THE LAB

REFERENCE

Baeriswyl, Romain and Camille Cornand. 2015. [The distortionary effect of monetary policy: Credit expansion vs. lump-sum transfers in the lab](#). GATE Working Papers 1516.

AFFILIATION OF THE AUTHOR(S)

Romain Baeriswyl: SNB

Camille Cornand: CNRS, GATE

ABSTRACT

In an experimental monetary general equilibrium economy, we assess two processes of monetary injection: credit expansion vs. lump-sum monetary transfers. In theory, both processes are neutral and exert no real effect on allocation. In the experiment, however, credit expansion leads to substantial distortions of real allocation and relative prices, and exerts a redistributive effect across subjects. By contrast, an increase in money through lump-sum transfers does not distort real allocation.

KEYWORDS

laboratory experiment, money neutrality, credit expansion, lump-sum monetary transfers

JEL CLASSIFICATION

E58

2.3.3 EXIT STRATEGIES AND TRADE DYNAMICS IN REPO MARKETS

REFERENCE

Berentsen, Aleksander, Sébastien P. Kraenzlin and Benjamin Müller. 2015. [Exit strategies and trade dynamics in Repo markets](#). SNB Working Papers 2015-09.

AFFILIATION OF THE AUTHOR(S)

Aleksander Berentsen: University of Basel

Sébastien P. Kraenzlin: SNB

Benjamin Müller: SNB

ABSTRACT

How can a central bank control interest rates in an environment with large excess reserves? In this paper, we develop a dynamic general equilibrium model of a secured money market and calibrate it to the Swiss franc repo market to study this question. The theoretical model allows us to identify the factors that determine demand and supply of central bank reserves, the money market rate and trading activity in the money market. In addition, we simulate various instruments that a central bank can use to exit from unconventional monetary policy. These instruments are assessed with respect to the central bank's ability to control the money market rate, their impact on the trading activity and the operational costs of an exit. All exit instruments allow central banks to attain an interest rate target. However, the trading activity differs significantly among the instruments and central bank bills and reverse repos are the most cost-effective.

KEYWORDS

exit strategies, money market, repo, monetary policy, interest rates, Swiss franc

JEL CLASSIFICATION

E52

2.3.4 THE IMPACT OF INTEREST RATE RISK ON BANK LENDING

REFERENCE

Beutler, Toni, Robert Bichsel, Adrian Bruhin and Jayson Danton. 2015. [The impact of interest rate risk on bank lending](#). Study Center Gerzensee Working Papers 15.05.

AFFILIATION OF THE AUTHOR(S)

Toni Beutler: SNB

Robert Bichsel: SNB

Adrian Bruhin: University of Lausanne

Jayson Danton: University of Lausanne

ABSTRACT

In this paper, we empirically analyze the transmission of realized interest rate risk – the gain or loss in bank economic capital due to movements in interest rates – to bank lending. We exploit a unique panel data set that contains supervisory information on the repricing maturity profiles of Swiss banks and provides us with an individual measure of interest rate risk exposure net of hedging. Our analysis yields three main results. First, our estimates indicate that a year after a permanent 1 percentage point upward shock in nominal interest rates, the average bank of 2013Q3 would, ceteris paribus, reduce its cumulative loan growth by approximately 170 basis points. An estimated 28% of this reduction would be the result of realized interest rate risk exposure weakening the bank's economic capital. Second, due to the banks' heterogeneity in interest rate risk exposure, the effect of the shock would differ across institutions and could be redistributive across regions. Finally, bank lending seems to be mainly driven by capital rather than liquidity, suggesting that a higher capitalized banking system can better shield its creditors from shocks in interest rates.

KEYWORDS

interest rate risk, bank lending, monetary policy transmission

JEL CLASSIFICATION

E44

2.3.5 TRANSMISSION OF QUANTITATIVE EASING: THE ROLE OF CENTRAL BANK RESERVES

REFERENCE

Christensen, Jens and Signe Krogstrup. 2015. [Transmission of quantitative easing: The role of central bank reserves](#). SNB Working Papers 2015-06.

AFFILIATION OF THE AUTHOR(S)

Jens Christensen: Federal Reserve Bank of San Francisco

Signe Krogstrup: SNB

ABSTRACT

We argue that the issuance of central bank reserves, per se, can matter for the effect of central bank large-scale asset purchases – commonly known as quantitative easing – on long-term interest rates. This effect is independent of the assets purchased and runs through a reserve-induced portfolio balance channel. For evidence we analyze the reaction of Swiss long-term government bond yields to announcements made by the Swiss National Bank to expand central bank reserves without acquiring any long-lived securities. We find that declines in long-term yields following such announcements mainly reflected reduced term premiums suggestive of reserve-induced portfolio balance effects.

KEYWORDS

unconventional monetary policy, reserve-induced portfolio balance channel, term structure modeling, Swiss National Bank

JEL CLASSIFICATION

E52

PUBLISHED AS

Christensen, Jens and Signe Krogstrup. 2015. [Transmission of asset purchases: The role of reserves](#). *FRBSF Economic Letter* (2015-20): 1–5.

2.3.6 A DYNAMIC NORTH-SOUTH MODEL OF DEMAND-INDUCED PRODUCT CYCLES

REFERENCE

Föllmi, Reto, Sandra Hanslin and Andreas Kohler. 2015. [A dynamic North-South model of demand-induced product cycles](#). SNB Working Papers 2015-04.

AFFILIATION OF THE AUTHOR(S)

Reto Föllmi: University of St. Gallen
Sandra Hanslin: SNB
Andreas Kohler: Agroscope

ABSTRACT

This paper presents a dynamic North-South general-equilibrium model where households have non-homothetic preferences. Innovation takes place in a rich North while firms in a poor South imitate products manufactured in the North. Introducing non-homothetic preferences delivers a complete international product cycle as described by Vernon (1966), where the different stages of the product cycle are determined not only by supply side factors but also by the distribution of income between North and South. We ask how changes in Southern labour productivity, population size in the South and inequality across regions affect the international product cycle. In line with presented stylised facts about the product cycle we predict a negative correlation between adoption time and per capita incomes.

KEYWORDS

product cycles, inequality, international trade

JEL CLASSIFICATION

O12

2.3.7 RE-USE OF COLLATERAL IN THE REPO MARKET

REFERENCE

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

AFFILIATION OF THE AUTHOR(S)

Lucas Marc Fuhrer: SNB
Basil Guggenheim: SNB
Silvio Schumacher: SNB

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, Swiss franc

JEL CLASSIFICATION

D47

2.3.8 MORTGAGE ARREARS IN EUROPE: THE IMPACT OF MONETARY AND MACROPRUDENTIAL POLICIES

REFERENCE

Gerlach-Kristen, Petra and Seán Lyons. 2015. [Mortgage arrears in Europe: The impact of monetary and macroprudential policies](#). SNB Working Papers 2015-05.

AFFILIATION OF THE AUTHOR(S)

Petra Gerlach-Kristen: SNB

Seán Lyons: Economic and Social Research Institute

ABSTRACT

Mortgage arrears arise if a household faces affordability problems and/or is in negative equity. Because widespread arrears pose a risk to the stability of banks and limit households' future access to credit, a crucial question is how monetary or macroprudential policies influence their incidence. We use a European household data set to analyse what drives arrears and find that affordability problems, such as unemployment, low income and high mortgage payments, matter, which suggests that monetary policy has an impact. Households facing the dual trigger of affordability problems and negative equity are more likely to go into longer-term arrears; macroprudential regulation preventing high loan-to-value (LTV) ratios can thus also have an impact.

KEYWORDS

arrears, negative equity, monetary policy, loan-to-value ratios

JEL CLASSIFICATION

D14

2.3.9 PRIVATE INFORMATION, CAPITAL FLOWS, AND EXCHANGE RATES

REFERENCE

Gyntelberg, Jacob, Mico Loretan and Tientip Subhanij. 2015. [Private information, capital flows, and exchange rates](#). SNB Working Papers 2015-12.

AFFILIATION OF THE AUTHOR(S)

Jacob Gyntelberg: Bank for International Settlements

Mico Loretan: SNB

Tientip Subhanij: Bank of Thailand

ABSTRACT

We demonstrate empirically that not all international capital flows influence exchange rates equally. Capital flows induced by foreign investors' transactions in local stock markets have an impact on exchange rates that is both economically significant and permanent, whereas capital flows induced by foreign investors' transactions in the local government bond market do not. We relate the differences in the price impacts of capital flows to differences in the amounts of private information conveyed by these flows. Our empirical findings are based on novel, daily-frequency datasets on prices and quantities of all transactions undertaken by foreign investors in the stock, bond, and onshore FX markets of Thailand.

KEYWORDS

order flow, private information, exchange rate models, market microstructure, emerging markets

JEL CLASSIFICATION

C22

2.3.10 REAL EXCHANGE RATE PERSISTENCE: THE CASE OF THE SWISS FRANC- US DOLLAR RATE

REFERENCE

Juselius, Katarina and Katrin Assenmacher-Wesche. 2015. [Real exchange rate persistence: The case of the Swiss franc-US dollar rate](#). SNB Working Papers 2015-03.

AFFILIATION OF THE AUTHOR(S)

Katarina Juselius: University of Copenhagen
Katrin Assenmacher-Wesche: SNB

ABSTRACT

Asset prices tend to undergo wide swings around long-run equilibrium values, which can have detrimental effects on the real economy. To get a better understanding of how the financial sector and the real economy interact, this paper models the long swings in the Swiss franc-US dollar foreign currency market using the I(2) Cointegrated VAR model. The results show strong evidence of self-reinforcing feedback mechanisms in the Swiss-US foreign exchange market that are consistent with the observed pronounced persistence in Swiss-US parity conditions. Generally, the results provide support for models allowing expectations formation in financial markets to be based on imperfect information.

KEYWORDS

long swings, imperfect knowledge, I(2) analysis, self-reinforcing feed-back, Swiss franc

JEL CLASSIFICATION

C32

2.3.11 BUSINESS TENDENCY SURVEYS AND MACROECONOMIC FLUCTUATIONS

REFERENCE

Kaufmann, Daniel and Rolf Scheufole. 2015. [Business tendency surveys and macroeconomic fluctuations](#). KOF Working Papers 378.

AFFILIATION OF THE AUTHOR(S)

Daniel Kaufmann: KOF/ETH Zurich
Rolf Scheufole: SNB

ABSTRACT

We investigate the information content of business tendency surveys for key macroeconomic variables in Switzerland. To summarise the information of a large data set of sectoral business tendency surveys we extract a small number of common factors by a principal components estimator. The estimator is able to deal with mixed-frequency data and missing observations at the beginning and end of the sample period. We show that these survey-based factors explain a relevant share of the movements of key macroeconomic variables, i.e. CPI inflation, GDP, employment, and an output gap. In particular, questions about the current and future expected situation are informative. However, backward-looking questions, for example questions about the situation compared to the previous year, do not contain additional information. We then examine the economic dimension of the data set. Questions about prices, real activity and capacity constraints contain important information for the corresponding macroeconomic variables. Finally, we estimate a dynamic relationship to produce forecasts for our factors and these key macroeconomic variables. It turns out that the predictive ability of our survey-based factor approach is quite encouraging. In a pseudo out-of-sample exercise, our approach beats relevant benchmarks for forecasting CPI inflation and an output gap and adds information to the benchmark forecasts for GDP and employment.

KEYWORDS

business tendency surveys, dynamic factor models, mixed frequencies, missing observations, nowcasting, forecasting, Switzerland

JEL CLASSIFICATION

E32

2.3.12 ON THE ROLES OF DIFFERENT FOREIGN CURRENCIES IN EUROPEAN BANK LENDING

REFERENCE

Krogstrup, Signe and Cédric Tille. 2015. *On the roles of different foreign currencies in European bank lending*. CEPR Discussion Papers 10845.

AFFILIATION OF THE AUTHOR(S)

Signe Krogstrup: SNB

Cédric Tille: The Graduate Institute, Geneva

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. Lending in other currencies is more used in lending to resident nonfinancial firms, and mostly in cross-border lending, where it is sensitive to funding costs and trade. Policy measures aimed at foreign currency lending have a clear impact on lending to residents. Our analysis shows that not all foreign currencies are alike, and that any policy aimed at the use of foreign currencies needs to take this heterogeneity into account.

KEYWORDS

cross-border transmission of shocks,
foreign currency lending, Swiss franc lending

JEL CLASSIFICATION

F32

2.3.13 BEN BERNANKE VS. JANET YELLEN: EXPLORING THE (A)SYMMETRY OF INDIVIDUAL AND AGGREGATE INFLATION EXPECTATIONS

REFERENCE

Mirkov, Nikola and Andreas Steinhauer. 2015. *Ben Bernanke vs. Janet Yellen: Exploring the (a)symmetry of individual and aggregate inflation expectations*. SNB Working Papers 2015-10.

AFFILIATION OF THE AUTHOR(S)

Nikola Mirkov: SNB

Andreas Steinhauer: University of Edinburgh

ABSTRACT

We conducted a simple, anonymous survey from December 2013 to January 2014 asking around 200 economists worldwide to provide an interval (a to b) of average inflation in the US expected 'over the next two years'. The respondents were also instructed to give a probability of inflation being higher or lower than the midpoint of their interval $(a+b)/2$. The outcome of the survey shows that a significant share of respondents revealed asymmetric inflation expectations and that the deviation from asymmetry is sizeable. Nonetheless, individual asymmetry in forecasts appears to be irrelevant for the aggregate distribution, as the number of respondents who factor in excess inflation broadly matches the number of those who gave more weight to disinflationary outcomes. The aggregate distribution we obtain is largely comparable to the results of the Survey of Professional Forecasters for the first quarter of 2014.

KEYWORDS

inflation expectations, subjective probability distributions

JEL CLASSIFICATION

E31

2.3.14 COLLATERALISED LIQUIDITY, TWO-PART TARIFF AND SETTLEMENT COORDINATION

REFERENCE

Nellen, Thomas. 2015. *Collateralised liquidity, two-part tariff and settlement coordination*. SNB Working Papers 2015-13.

AFFILIATION OF THE AUTHOR(S)

Thomas Nellen: SNB

ABSTRACT

This paper analyses the liquidity management game played in payment systems with free but collateralised intraday credit facilities, under the assumption that settlement risk is the driving force. Settlement equilibria are found to depend on the combination of the intraday liquidity facilities' design and the collateral policy applied by the central bank. The effectiveness of a two-part tariff in coordinating on early settlement depends on the same factors. Model predictions are consistent with stylised facts from a comparison of settlement behaviour in the Swiss Interbank Clearing and Fedwire funds.

KEYWORDS

real-time gross settlement, large-value payment systems, intraday liquidity facility, collateralisation, settlement risk

JEL CLASSIFICATION

E58

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

REFERENCE

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

AFFILIATION OF THE AUTHOR(S)

Thomas Nitschka: SNB

ABSTRACT

This paper shows that standard multifactor asset pricing models provide an adequate description of excess returns on stock indexes of German industrial sectors. The only exception is the banking sector index. It offers lower monthly excess returns than suggested by exposures to risk factors in the sample period from 1973 to 2014. This evidence is robust to various changes in the specification of the empirical model. Rolling time window regressions highlight that this finding has been most pronounced since the peak of the global financial crisis in 2008/2009 when the government guarantee for big, systemically important German banks became explicit.

KEYWORDS

banking sector, multifactor models, risk factors, risk premia

JEL CLASSIFICATION

G21

2.3.16 THE RESILIENT TRADE SURPLUS, THE PHARMACEUTICAL SECTOR, AND EXCHANGE RATE ASSESSMENTS IN SWITZERLAND

REFERENCE

Sauré, Philip U. 2015. *The resilient trade surplus, the pharmaceutical sector, and exchange rate assessments in Switzerland*. Peterson Institute for International Economics Working Paper Series 15–11.

AFFILIATION OF THE AUTHOR(S)

Philip U. Sauré: SNB

ABSTRACT

With its cost- and time-intensive research and development, the pharmaceutical sector can generate large trade imbalances. These imbalances may arise because investment and output occur in different years; they are sizable if pharmaceuticals account for a large and growing share of exports. Switzerland's recent trade surplus results from this effect, which also explains why the Swiss trade surplus is exceptionally resilient. The Swiss trade surplus is, therefore, a poor indicator for exchange rate assessments.

KEYWORDS

trade imbalances, exchange rate elasticity, exchange rate assessment, R&D costs, Switzerland

JEL CLASSIFICATION

F14

2.3.17 TIME-INTENSIVE R&D AND UNBALANCED TRADE

REFERENCE

Sauré, Philip U. 2015. *Time-intensive R&D and unbalanced trade*. SNB Working Papers 2015-11.

AFFILIATION OF THE AUTHOR(S)

Philip U. Sauré: SNB

ABSTRACT

This paper highlights a novel mechanism that generates global imbalances. It develops a general equilibrium trade model with one of two countries having a comparative advantage in a sector, whose production is characterized by (i) rapid, anticipated demand growth and (ii) large up-front R&D costs. International funding of the accruing R&D costs generates capital inflows in the R&D stage, which are balanced by subsequent outflows. Importantly, sector-level growth does not generate cross-country growth differentials, which are typically regarded as rationales of global imbalances. Additionally, it is shown that a trade surplus can coincide with appreciations of the real exchange rate. I argue that Switzerland's trade surplus, which was driven to record heights during 2010–2014 by pharmaceutical exports, exemplifies this mechanism. A calibration exercise of the model to Swiss trade flows underpins this argument.

KEYWORDS

unbalanced trade, setup costs, R&D costs, Switzerland

JEL CLASSIFICATION

F12

2.3.18 PRICE EXPECTATIONS AND THE U.S. HOUSING BOOM

REFERENCE

Towbin, Pascal and Sebastian Weber. 2015. [Price expectations and the U.S. housing boom](#). IMF Working Papers 15/182.

AFFILIATION OF THE AUTHOR(S)

Pascal Towbin: SNB

Sebastian Weber: International Monetary Fund

ABSTRACT

Between 1996 and 2006 the U.S. has experienced an unprecedented boom in house prices. As it has proven to be difficult to explain the large price increase by observable fundamentals, many observers have emphasized the role of speculation, i.e. expectations about future price developments. The argument is, however, often indirect: speculation is treated as a deviation from a benchmark. The present paper aims to identify house price expectation shocks directly. To that purpose, we estimate a VAR model for the U.S. and use sign restrictions to identify house price expectation, housing supply, housing demand, and mortgage rate shocks. House price expectation shocks are the most important driver of the boom and account for about 30 percent of the real house price increase. We also construct a model-based measure of exogenous changes in price expectations and show that this measure leads a survey-based measure of changes in house price expectations. Our main identification scheme leaves open whether expectation shifts are realistic or unrealistic. In extensions, we provide evidence that price expectation shifts during the boom were primarily unrealistic and were only marginally affected by realistic expectations about future fundamentals.

KEYWORDS

housing prices, United States, price increases, expectations, econometric models, housing market, house price expectations, speculation, housing boom, VAR

JEL CLASSIFICATION

R31

2.3.19 CAPITAL FLOW WAVES TO AND FROM SWITZERLAND BEFORE AND AFTER THE FINANCIAL CRISIS

REFERENCE

Yesin, Pinar. 2015. [Capital flow waves to and from Switzerland before and after the financial crisis](#). SNB Working Papers 2015-01.

AFFILIATION OF THE AUTHOR(S)

Pinar Yesin: SNB

ABSTRACT

This paper first shows that capital inflows to and outflows from financial centres were disproportionately affected by the global financial crisis. Switzerland was no exception. The paper then identifies waves of capital flows to and from Switzerland from 2000:Q1 to 2014:Q2 by using a simple statistical method. The analysis shows that private capital inflows to and outflows from Switzerland have become exceptionally muted and less volatile since the crisis. Further, strong and long-lasting ‘home bias’ behaviour can be observed for both Swiss and foreign investors. By contrast, net private capital flows have shown significantly higher volatility since the financial crisis, frequently registering extreme movements driven by extreme movements in bank lending flows. These findings suggest that the financial crisis generated a breaking point for capital flows to and from Switzerland.

KEYWORDS

private capital flows, inflows, outflows, surges, stops, retrenchment, flight, Switzerland

JEL CLASSIFICATION

F21

PUBLISHED AS

Yesin, Pinar. 2015. [Capital flow waves to and from Switzerland before and after the financial crisis](#). *Swiss Journal of Economics and Statistics* 151(1): 27–75.

3

Further research activities in 2015

This chapter reviews further research activities at the SNB in 2015.

3.1 SNB RESEARCH SEMINARS

9 January 2015	<i>Marco Lombardi</i> (BIS) A shadow rate to calibrate US monetary policy at the zero lower bound
16 January 2015	<i>Iris Bohnet</i> (Harvard University) Nudging gender equality
19 January 2015	<i>Anton Korinek</i> (Johns Hopkins University) International spillovers and guidelines for policy cooperation: A welfare theorem for national economic policymaking
23 January 2015	<i>Fabrizio Zilibotti</i> (University of Zurich) Sovereign debt, renegotiation, and austerity programs
27 January 2015	<i>Philipp Hartmann</i> (ECB) Result of the macro-prudential research (MaRs) network of the European system of central banks
30 January 2015	<i>Luisa Lambertini</i> (EPFL) Macroeconomic implications of bank capital requirements
3 February 2015	<i>Kleopatra Nikolaou</i> (Federal Reserve Board) The role of dealers in providing liquidity in the ABCP market
6 February 2015	<i>Katarina Juselius</i> (University of Copenhagen) Real exchange rate persistence: The case of the Swiss franc-US dollar rate
10 February 2015	<i>Marco Del Negro</i> (FRB New York) The forward guidance puzzle
12 February 2015	<i>Marco Del Negro</i> (FRB New York) When does a central bank's balance sheet require fiscal support?
27 February 2015	<i>Matthias Bannert, Dirk Drechsel, Heiner Mikosch and Samad Sarferaz</i> (KOF/ETH Zurich) Survey based impulse responses
6 March 2015	<i>Matti Suominen</i> (Aalto University) Currency carry trades and funding risk
10 April 2015	<i>Georgios Georgiadis</i> (ECB) Trilemma, not dilemma: Financial globalisation and monetary policy effectiveness
14 April 2015	<i>Yannick Kalantzis</i> (Banque de France) Financial fragility in small open economies: Firm balance sheets and the sectoral structure
17 April 2015	<i>Kjell G. Nyborg</i> (University of Zurich) Central bank collateral frameworks
24 April 2015	<i>Michael Ehrmann</i> (Bank of Canada) Targeting inflation from below – How do inflation expectations behave?
4 May 2015	<i>Thomas Helbling</i> (IMF) The state of the global economy: The IMF's April 2015 world economic outlook
29 May 2015	<i>Elisa Faraglia</i> (University of Cambridge) Government debt management: The long and the short of it
12 June 2015	<i>Kalin Nikolov</i> (ECB) Designing capital regulation in a quantitative macroeconomic model
23 June 2015	<i>Heinz Hermann</i> (Bundesbank) Research in central banks: Challenges and rewards
3 July 2015	<i>Heinz Zimmermann</i> (University of Basel) How credible was the EUR/CHF floor? An options market perspective
7 July 2015	<i>Narayana Kocherlakota</i> (FRB Minneapolis) Market-based probabilities: A tool for policymakers

31 July 2015	<i>Jürgen Wolters</i> (Freie Universität Berlin) Characterizing the financial cycle: Evidence from a frequency domain analysis
7 August 2015	<i>Antoine Martin</i> (FRB New York) Why do CCPs play such a small role in the U.S. repo market and why that might change?
19 August 2015	<i>John Fernald</i> (FRB San Francisco) Productivity and potential output before, during, and after the Great Recession
28 August 2015	<i>Nathan Foley-Fisher</i> (Federal Reserve Board) Sovereign debt guarantees and default: Lessons from the UK and Ireland, 1920–1938
11 September 2015	<i>Alex Cukierman</i> (Tel Aviv University) The choice of flexibility in targeting inflation during normal times and during disinflations
2 October 2015	<i>Alex Cukierman</i> (Tel Aviv University) US Banks' behaviour since Lehman's collapse, bailout uncertainty and the timing of exit strategies
16 October 2015	<i>Alex Cukierman</i> (Tel Aviv University) The conquest of Israeli inflation and current policy dilemmas
20 October 2015	<i>Maral Shamloo</i> (Bank of Canada) Limits to arbitrage and deviations from covered interest parity
23 October 2015	<i>Alex Cukierman</i> (Tel Aviv University) Inflation and its broader consequences: Sixty years evidence from the Israeli economy
27 October 2015	<i>Alex Cukierman</i> (Tel Aviv University) Foreign exchange policy at the zero lower bound
30 October 2015	<i>Jessica Leutert</i> (University of Lausanne) Exchange rate asymmetry and the Swiss franc safety premium
4 November 2015	<i>Kevin Lansing</i> (FRB San Francisco) Explaining the boom-bust cycle in the U.S. housing market: A reverse-engineering approach
13 November 2015	<i>Ali Kabiri</i> (University of Buckingham) Measuring boom and bust: The case of the Great Crash of 1929
3 December 2015	<i>Durell Duffie</i> (Stanford University) Size discovery

3.2 SNB RESEARCH LECTURES

The SNB regularly invites an expert to give a research lecture on a topical research area.

Forecasting with Bayesian DSGE and Time Series Models

In February 2015, Marco Del Negro (Fed New York) delivered a lecture series over five days on the topic of ‘Forecasting with Bayesian DSGE and Time Series models’. He also held two SNB Research Seminars.

Monday, 9 February 2015	Lecture 1: Introduction to Bayesian methods & BVARs
Tuesday, 10 February 2015	Lecture 2: Time-series models, part I SNB Research Seminar: “The forward guidance puzzle”
Wednesday, 11 February 2015	Lecture 3: Time-series models, part II
Thursday, 12 February 2015	Lecture 4: DSGE and DSGE-VARs SNB Research Seminar: “When does a central bank’s balance sheet require fiscal support?”
Friday, 13 February 2015	Lecture 5: Model averaging and pools

Marco Del Negro

Marco Del Negro is an Assistant Vice President in the Macroeconomics and Monetary Studies Function of the Research and Statistics Group at the Federal Reserve Bank of New York. His research focuses on the use of general equilibrium models in forecasting and policy analysis. Before joining the Bank, he was a research economist and associate policy adviser with the Macro group of the research department of the Federal Reserve Bank of Atlanta. Marco Del Negro published work in the *American Economic Review*, *AJ Macro*, *Journal of Monetary Economics*, *Journal of International Economics*, *International Economic Review*, *Journal of the European Economic Association*, and *Review of Economic Studies*.

3.3 RESEARCH VISITORS AT THE SNB

Alex Cukierman, 18 August – 20 November 2015

Member of the Monetary Policy Committee of the Bank of Israel and Professor Emeritus at the Eitan Berglas School of Economics at Tel Aviv University

Alex Cukierman's research interests include economics and politics of central banking, political economy and macroeconomics. He got his PhD in Economics from MIT in 1972. A former President of the Israel Economic Association, he held visiting positions at the University of Munich, University of Bonn, Princeton University and Stanford University, and was a research fellow at the European Central Bank, World Bank and Federal Reserve Bank of St. Louis. He had editorships at *European Economic Review*, *Economic Inquiry* and *European Journal of Political Economy*. Alex Cukierman is author or co-author of various books and over a hundred scientific articles in the areas of macroeconomics, monetary economics, political economy and monetary policy and institutions. His best known book is: *Central Bank Strategy, Credibility and Independence – Theory and Evidence*, MIT Press, 1992.

Katarina Juselius, 5–6 February 2015

Professor Emeritus in Econometrics and Empirical Economics at the University of Copenhagen

Katarina Juselius has led several large research projects on macroeconomic transmission mechanisms in Europe and been involved in the analysis of numerous empirical macro models. She has published extensively in econometric journals, authored the book *The Cointegrated VAR model: Methodology and Applications*, been a member of the Danish Social Sciences Research Council, and the chairperson of the EuroCore Programme of the European Science Foundation. She leads the Institute for New Economic Thinking's research project on Advancing Imperfect Knowledge Economics which aims at developing theoretically coherent models that are open to unforeseeable structural change and avoid the presumption that market participants are irrational.

During her visit to the SNB Katarina Juselius worked on a revision of her paper "Real exchange rate persistence: The case of the Swiss franc-US dollar rate" with Katrin Assenmacher. She also engaged in bilateral talks with economists on cointegrated VAR modeling.

Massimiliano Marcellino, 23–25 March, 22–24 June and 21–23 September 2015
Bocconi University

Massimiliano Marcellino is Professor of Econometrics in the Economics Department of Bocconi University, a fellow of CEPR and IGER, 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 visits to the SNB, Massimiliano Marcellino conducted an assessment of the short-term forecasting models used by Team Switzerland (OU Economic Analysis) for its GDP nowcasts.

Gunnar Bårdsen, 11–13 May and 2–4 November 2015
Norwegian University of Science and Technology

Gunnar Bårdsen is Professor of Economics at the Norwegian University of Science and Technology in Trondheim, Norway, where he was previously Head of the Economics department. He is also a Principal Researcher at Norges Bank. He has worked as a consultant for several central banks and institutions, including helping developing the model MOSES for the Riksbank in Sweden and the model NAM-FT for the Financial Supervisory Authority of Norway.

Gunnar Bårdsen visited the SNB twice during 2015. He evaluated the TIM forecast model used by Team Switzerland (OU Economic Analysis) for its medium-term forecasts.

John G. Fernald, 17–21 August 2015
Federal Reserve Bank of San Francisco

John Fernald holds a PhD in Economics from Harvard University. He worked as an economist at the Federal Reserve Board, was Senior Economist at the White House Council of Economic Advisors, and was Economic Advisor at the Federal Reserve Bank of Chicago. In 2005, he joined the Federal Reserve Bank of San Francisco as Vice President, Macroeconomic Research, and since 2012, has been Senior Research Advisor, International Research. His research interests lie in macroeconomics, productivity growth and more specifically China's economy and financial markets.

RESEARCH CONFERENCES ORGANISED BY THE SNB

3.3.1 CONFERENCES WITH THE SNB

3.3.1.1 12th Annual NBP-SNB Joint Seminar: 'Inflation forecasting models'

Date	4–5 May 2015
Venue	Zurich
Organising committee	Werner Hermann (Swiss National Bank) Andrzej Raczko (National Bank of Poland)

- Opening remarks** – by *Thomas Moser*¹ (SNB)
- Keynote speech** – Principles of inflation forecast targeting and a forecasting and policy analysis system
by *Douglas Laxton* (IMF)
- Panel discussion**
(Moderator: Thomas Moser) – The monetary policy decision making process and the role of models
Panelists: *Douglas Laxton* (IMF), *Carlos Lenz* (SNB),
Andrzej Raczko (NBP) and *Nurbek Jenish* (NBKR)
- Session II** – Inflation forecasting models in use at central banks in three different regions of the world:
Western Europe and North America (*Nicolas Cuche-Curti*, SNB)
Central and Eastern Europe (*Jacek Kotlowski*, NBP)
Countries of the former USSR (*Elena Gorbova*, CBR)
- Session III** – Modelling strategy of the Czech National Bank
by *Tibor Hlédik* (CNB)
Discussant: *Aleksandra Halka* (NBP)
- Session IV** – Modelling strategy of the Bank of the Kyrgyz Republic
by *Namazbai Ishmakhmetov* and *Anvar Murathanov* (NBKR)
Discussant: *Douglas Laxton* (IMF)
– Modelling strategy of the Central Bank of Azerbaijan
by *Nigar Jafarova* (Central Bank of Azerbaijan)
Discussant: *Georg Rich* (Rich International Consulting)
- Session V** – Modelling strategy of the Central Bank of Armenia
by *Shahane Harutyunyan* (Central Bank of Armenia)
Discussant: *Nurbek Jenish* (NBKR)
– Modelling strategy of the National Bank of Kazakhstan
by *Aida Tatibekova* (National Bank of Kazakhstan)
Discussant: *Oliver Sigrist* (SNB)
- Concluding remarks** – by *Andrzej Raczko* (National Bank of Poland)

¹ Speakers' names are written in italics.

3.3.1.2 SNB-BIS-CEPR-FRB Dallas Conference:

'Spillovers of conventional and unconventional monetary policy: The role of real and financial linkages'

Date	9–10 July 2015
Venue	Zurich
Organising committee	Raphael Auer (Swiss National Bank) Menzie Chinn (University of Wisconsin and NBER) Giancarlo Corsetti (University of Cambridge and CEPR) Andrew Filardo (Bank for International Settlements) Andreas Fischer (Swiss National Bank) Mark Wynne (Federal Reserve Bank of Dallas and GMPI)

- by *Thomas J. Jordan* (SNB) Opening remarks

- Monetary policy spillovers and the trilemma in the new normal:
Periphery country sensitivity to core country conditions
by *Joshua Aizenman* (University of Southern California), *Menzie D. Chinn*
(University of Wisconsin) and *Hiro Ito* (Pennsylvania State University)
Discussant: *Atish Rex Ghosh* (IMF) Session I

- Short-term pain for long-term gain: Market deregulation and
monetary policy in small open economies
by *Matteo Cacciatore* (HEC Montréal), *Romain Duval* (IMF),
Giuseppe Fiori (North Carolina State University) and
Fabio Ghironi (University of Washington) Session II
- Global banks and excess volatility of international capital flows
by *Michael B. Devereux* (University of British Columbia) and
Giovanni Lombardo (BIS)
Discussant: *Aitor Erce* (European Stability Mechanism)

- What drives the funding currency mix of banks? Session III
by *Signe Krogstrup* (SNB) and *Cédric Tille* (GIIDS)
Discussant: *Adrian van Rixtel* (BIS)
- The impact of international swap lines on stock returns of banks
in emerging markets
by *Alin Andries* (Alexandru Ioan Cuza University of Iasi),
Andreas Fischer (SNB) and *Pinar Yesin* (SNB)
Discussant: *Andreas Schrimpf* (BIS)

- by *Claudio Borio* (BIS) Keynote address

- Unconventional monetary policy and international risk premia Session IV
by *John Rogers* (Federal Reserve Board), *Chiara Scotti* (Federal
Reserve Board) and *Jonathan Wright* (Johns Hopkins University)
Discussant: *Julieta Yung* (FRB Dallas)
- If the Fed sneezes, who gets a cold?
by *Luca Dedola* (ECB), *Giulia Rivolta* (University of Brescia)
and *Livio Stracca* (ECB)
Discussant: *Mark Wynne* (FRB Dallas)

- Trilemma, not dilemma: Financial globalisation and
monetary policy effectiveness Session V
by *Georgios Georgiadis* (ECB) and *Arnaud Mehl* (ECB)
Discussant: *Sandra Eickmeier* (Bundesbank)

3.3.1.3 9th SNB Research Conference: 'Monetary policy lessons from the financial crisis'

Date	25–26 September 2015
Venue	Zurich
Organising committee	Ernst Baltensperger (Study Center Gerzensee) Athanasios Orphanides (MIT) Samuel Reynard (Swiss National Bank) Marcel R. Savioz (Swiss National Bank)

Official conference dinner

- Introduction by *Fritz Zurbrügg* (SNB)
- Speech by *Peter Praet* (ECB)

Session I (Chair: Athanasios Orphanides, MIT)

- The forward guidance puzzle
by Marco Del Negro (FRB New York), *Marc Giannoni* (FRB New York) and Christina Patterson (MIT)
Discussants: *Gunter Coenen* (ECB) and *Daniel F. Waggoner* (FRB Atlanta)
- Liquidity trap and secular stagnation
by *Philippe Bacchetta* (University of Lausanne), Kenza Benhima (University of Lausanne) and Yannick Kalantzis (Banque de France)
Discussants: *Paolo Pesenti* (FRB New York) and *Cédric Tille* (GIIDS)
- Financial stability and optimal interest rate policy
by *Andrea Ajello*, Thomas Laubach, David López-Salido and Taisuke Nakata (all Federal Reserve Board)
Discussants: *Frank Smets* (ECB) and *Lars E. O. Svensson* (Stockholm School of Economics)

Session II (Chair: Ernst Baltensperger, Study Center Gerzensee)

- Bank runs in monetary economies
by *David Andolfatto* (FRB St. Louis), Aleksander Berentsen (University of Basel) and Fernando Martin (FRB St. Louis)
Discussants: *Jean-Charles Rochet* (University of Zurich) and *Stephen Williamson* (FRB St. Louis)
- Housing market dynamics and macroprudential policy
by *Gabriel Bruneau*, Ian Christensen and Césaire A. Meh (all Bank of Canada)
Discussants: *Luisa Lambertini* (EPFL) and *Jörn Tenhofen* (SNB)
- Monetary policy implementation in an interbank network: Effects on systemic risk
by Marcel Bluhm (Xiamen University), *Ester Faia* (Frankfurt University) and Jan Pieter Krahen (Frankfurt University)
Discussants: *Morten Bech* (BIS) and *Camelia Minoiu* (IMF)

Session III (Chair: Samuel Reynard, SNB)

- Financial heterogeneity and monetary union
by Simon Gilchrist (Boston University), Raphael Schoenle (Brandeis University), *Jae Sim* (Federal Reserve Board) and Egon Zakrajsek (Federal Reserve Board)
Discussants: *Robert Kollmann* (Université Libre de Bruxelles) and *Mico Loretan* (SNB)
- How does macroprudential regulation change bank credit supply?
by Anil K. Kashyap (University of Chicago), *Dimitrios P. Tsomocos* (University of Oxford) and Alexandros P. Vardoulakis (Federal Reserve Board)
Discussants: *Harris Dellas* (University of Berne) and *Dan Wunderli* (SNB)
- Basel III and the prediction of financial crises
by *Simon van Norden* (HEC Montréal) and Marc Wildi (Institute of Data Analysis and Process Design, Winterthur)
Discussants: *Mikael Juselius* (Bank of Finland) and *Benoît Mojon* (Banque de France)

3.3.1.4 Joint Central Bank Conference: 'Challenges to monetary policy in the future'

Date	4–6 November 2015
Venue	Berne
Organising committee	Filippo Occhino (Federal Reserve Bank of Cleveland) Enzo Rossi (Swiss National Bank) Christian Friedrich (Bank of Canada) Karen Kopecky (Federal Reserve Bank of Atlanta)

- by *Thomas Moser* (SNB) **Opening remarks**

- Presentations by: **Day Ahead Meeting**
 - *Marvin Goodfriend* (Carnegie Mellon University)
 - *Lawrence Schembri* (Bank of Canada)
 - *Jon Faust* (Federal Reserve Board)
 - *Paula Tkac* (FRB Atlanta)
 - *Ellis Tallman* (FRB Cleveland)
 - *Thomas Moser* (SNB)
 - *Stefan Gerlach* (Central Bank of Ireland)
 - *Vitor Gaspar* (IMF)

- Real balance effects when the nominal interest rate is zero **Conference**
by *R. Anton Braun* (FRB Atlanta) and Takemasa Oda (Bank of Japan)
Discussant: *Katrin Assenmacher* (SNB) **Session I**
- Price change dispersion and time-varying pass-through into consumer prices
by Rita Fleer (SNB), *Barbara Rudolf* (SNB) and Mathias Zurlinden (SNB)
Discussant: *Christian Friedrich* (Bank of Canada)

- The growth of emerging economies and global macroeconomic stability **Session II**
by *Vincenzo Quadrini* (University of Southern California)
Discussant: *R. Anton Braun* (FRB Atlanta)
- Monetary policy and financial stability: Cross-country evidence
by *Christian Friedrich*, Kristina Hess and Rose Cunningham (all Bank of Canada)
Discussant: *Gregor Bäurle* (SNB)
- The 2012 eurozone crisis and the ECB's OMT program:
A debt-overhang banking and sovereign crisis
by *Filippo Occhino* (FRB Cleveland)
Discussant: *Vincenzo Quadrini* (University of Southern California)

- by *Dennis Lockhart* (FRB Atlanta) **Dinner speech**

- Money creation, monetary policy and capital regulation **Session III**
by Salomon Faure (ETH Zurich) and *Hans Gersbach* (ETH Zurich)
Discussant: *Yvan Lengwiler* (University of Basel)
- Euro-area and US banks behavior, and ECB-Fed monetary policies during
the Global Financial Crisis: A comparison
by *Alex Cukierman* (Tel Aviv University)
Discussant: *Peter Stella* (Stellar Consulting LLC)
- Exiting well
by *Peter Stella* (Stellar Consulting LLC)
Discussant: *Alex Cukierman* (Tel Aviv University)

3.3.1.5 5th Banca d'Italia-ECB-SNB Workshop: 'Financial determinants of exchange rates'

Date	17–18 December 2015
Venue	Zurich
Organising committee	Alessio Anzuini (Banca d'Italia) Fabio Fornari (European Central Bank) Thomas Nitschka (Swiss National Bank)

Opening remarks

- by *Thomas Moser* (SNB)

Session I:

Average currency excess returns: Compensation for macroeconomic risk?
(Chair: Alessio Anzuini, Banca d'Italia)

- Uncovered interest rate parity: A relation to global trade risk
by Tamara Nunes and *Andreea Piloiu* (both University of Lausanne)
Discussant: *Karen Mayhew* (Bank of England)
- Unemployment fluctuations and the predictability of currency returns
by *Federico Nucera* (LUISS Guido Carli University)
Discussant: *Gino Cenedese* (Bank of England)

Lecture

- The financial determination of exchange rates: A framework
by *Matteo Maggiori* (Harvard University)

Session II:

Foreign exchange intervention: Theory and evidence
(Chair: Thomas Nitschka, SNB)

- Capital flows and foreign exchange intervention
by *Paolo Cavallino* (IMF)
Discussant: *Jessica Leutert* (University of Lausanne)
- When is foreign exchange intervention effective? Evidence from 33 countries
by Marcel Fratzscher (DIW), Oliver Gloede (SNB), Lukas Menkhoff (DIW), Lucio Sarno (Cass Business School) and *Tobias Stöhr* (DIW)
Discussant: *Christian Grisse* (SNB)

Session III:

Foreign exchange risks: Influenced by other financial Markets?
(Chair: Thomas Nitschka, SNB)

- Private information, capital flows and exchange rates
by Jacob Gyntelberg (BIS), *Mico Loretan* (SNB) and Tientip Subhanij (Bank of Thailand)
Discussant: *Saskia Ter Ellen* (Norges Bank)
- Exchange rates and sovereign risk
by Pasquale Della Corte (Imperial College London), Lucio Sarno (Cass Business School), *Maik Schmeling* (Cass Business School) and Christian Wagner (Copenhagen Business School)
Discussant: *Ayako Saiki* (De Nederlandsche Bank)

Keynote lecture

- Gravity in FX Rsquared: Understanding exchange rate comovement
by *Hanno Lustig* (Stanford Graduate School of Business)

Session IV:

Curious cases: The removal of the EURCHF minimum rate, limits to arbitrage and the profitability of different carry trade strategies
(Chair: Alessio Anzuini, Banca d'Italia)

- Currency portfolios, returns and asset pricing tests
by *Philippe Dupuy* (Grenoble Ecole de Management), Jessica James (Cass Business School) and Ian W. Marsh (Cass Business School)
Discussant: *Michael Melvin* (Black Rock)
- Limits to arbitrage and the deviations from covered interest rate parity
by James Pinnington and *Maral Shamloo* (both Bank of Canada)
Discussant: *Arzé Karam* (Durham University Business School)
- Did markets anticipate the removal of the Swiss franc cap?
by *Nikola Mirkov* (SNB), Igor Pozdeev (University of St. Gallen) and Paul Söderlind (University of St. Gallen)
Discussant: *Marcelo Pericoli* (Banca d'Italia)

Session V:

Exchange rate predictability: Fundamentals and other scapegoats
(Chair: Thomas Nitschka, SNB)

- Trend fundamentals and exchange rate dynamics
by Florian Huber (OeNB) and *Daniel Kaufmann* (KOF/ETH Zurich)
Discussant: *Marco Lombardi* (BIS)
- The term structure of exchange rate predictability: Commonality, scapegoat and disagreement
by *Huichou Huang* (University of Glasgow)
Discussant: *Fabio Fornari* (ECB)

**3.3.1.6 Brevan Howard Centre for Financial Analysis, Imperial College
London-CEPR-SNB Event:
'Removing the zero lower bound on interest rates'**

Date	18 May 2015
Venue	London
Organising committee	Franklin Allen (Imperial College London) Signe Krogstrup (Swiss National Bank)

3.3.1.7 BuBa-OeNB-SNB Workshop

Date	7–8 October 2015
Venue	Vienna
Organising committee	Martin Summer (Oesterreichische Nationalbank) Emanuel Mönch (Deutsche Bundesbank) Marcel R. Savioz (Swiss National Bank)

3.3.1.8 Fed St. Louis-JEDC-SCG-UniBern-SNB Conference

Date	23–24 October 2015
Venue	Study Center Gerzensee
Organising committee	Harris Dellas (University of Bern) Carlos Garriga (Federal Reserve Bank of St. Louis) Dirk Niepelt (Study Center Gerzensee) B. Ravikumar (Federal Reserve Bank of St. Louis) Marcel R. Savioz (Swiss National Bank)

3.3.2 CONFERENCES HOSTED BY THE SNB

3.3.2.1 NBER International Seminar on Macroeconomics

Date	26–27 June 2015
Venue	Zurich
Organising committee	Francesco Giavazzi (Bocconi University and NBER) Kenneth West (University of Wisconsin at Madison and NBER) Jeffrey Frankel (Harvard University and NBER) Helene Rey (London Business School and NBER)

**3.3.2.2 HSG-Aussenwirtschaft Workshop:
'The safe haven status of the CHF and the Swiss external sector
during international crisis'**

Date	8 July 2015
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 (Swiss National Bank)

4.1 RESEARCH PUBLICATIONS SORTED BY TOPIC

4.1.1 JEL CLASSIFICATION

see page

C – Mathematical and Quantitative Methods

C2 – Single Equation Models; Single Variables

*C22 – Time-Series Models; Dynamic Quantile Regressions;
Dynamic Treatment Effect Models*

– Private information, capital flows, and exchange rates 32

C3 – Multiple or Simultaneous Equation Models; Multiple Variables

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

– Real exchange rate persistence: The case of the Swiss franc-US
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C5 – Econometric Modeling

C53 – Forecasting and Prediction Methods; Simulation Methods

– Bootstrap joint prediction regions 27

D – Microeconomics

D1 – Household Behavior and Family Economics

D14 – Personal Finance

– Mortgage arrears in Europe: The impact of monetary and
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D2 – Production and Organizations

D22 – Firm Behavior: Empirical Analysis

– Do credit constraints affect SME investment and employment? 21

D4 – Market Structure and Pricing

D47 – Market Design

– Re-use of collateral in the repo market 31

E – Macroeconomics and Monetary Economics

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

*E24 – Employment; Unemployment; Wages; Intergenerational
Income Distribution; Aggregate Human Capital*

– The ins and outs of German unemployment:
A transatlantic perspective 24

Key:
Articles in research journals
Working papers

E3 – Prices, Business Fluctuations, and Cycles

E31 – Price Level; Inflation; Deflation

- Exchange rate pass-through, domestic competition and inflation: Evidence from the 2005/08 revaluation of the Renminbi 16
- Quantification and characteristics of household inflation expectations in Switzerland 26
- Ben Bernanke vs. Janet Yellen: Exploring the (a)symmetry of individual and aggregate inflation expectations 34

E32 – Business Fluctuations; Cycles

- How do individual sectors respond to macroeconomic shocks? A structural dynamic factor approach applied to Swiss data 18
- Business tendency surveys and macroeconomic fluctuations 33

E4 – Money and Interest Rates

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

- Intertemporal discoordination in the 100% reserve banking system 17

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

- The zero lower bound and movements in the term structure of interest rates 22

E44 – Financial Markets and the Macroeconomy

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

E51 – Money Supply; Credit; Money Multipliers

- The effect of the monetary base expansion on the balance sheet of domestic banks 18

E52 – Monetary Policy

- Exit strategies and trade dynamics in Repo markets 29
- Transmission of asset purchases: The role of reserves 19, 30
- The impact of ECB crisis measures on euro-area CDS spreads 20

E58 – Central Banks and Their Policies

- Reserve requirements as a macroprudential instrument – Empirical evidence from Brazil 21
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- The distortionary effect of monetary policy: Credit expansion vs. lump-sum transfers in the lab 29
- Collateralised liquidity, two-part tariff and settlement coordination 35

F – International Economics

F1 – Trade

F11 – Neoclassical Models of Trade

- Per capita income and the extensive margin of bilateral trade 23

F12 – Models of Trade with Imperfect Competition and Scale Economies

- Trade openness and cross-country income differences 23
- Time-intensive R&D and unbalanced trade 36

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- The resilient trade surplus, the pharmaceutical sector, and exchange rate assessments in Switzerland 36

F16 – Trade and Labor Market Interactions

- Human capital and the dynamic effects of trade 17

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<i>F31 – Foreign Exchange</i>	
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– On financial risk and the safe haven characteristics of Swiss franc exchange rates	22
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<i>F32 – Current Account Adjustment; Short-Term Capital Movements</i>	
– A safe haven: International demand for Swiss francs during the euro area debt crisis	16
– On the roles of different foreign currencies in European bank lending	34
<i>F36 – Financial Aspects of Economic Integration</i>	
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– Deciphering financial contagion in the euro area during the crisis	26

G – Financial Economics

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O – Economic Development, Innovation, Technological Change, and Growth

O1 – Economic Development	
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R – Urban, Rural, Regional, Real Estate, and Transportation Economics

R3 – Real Estate Markets, Spatial Production Analysis, and Firm Location	
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Key:
Articles in research journals
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4.1.2 KEYWORDS

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4.2 RESEARCH PUBLICATIONS SORTED BY AUTHOR

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Key:
Articles in research journals
Working papers

Appendix

EVOLUTION OF SNB RESEARCH OVER RECENT YEARS

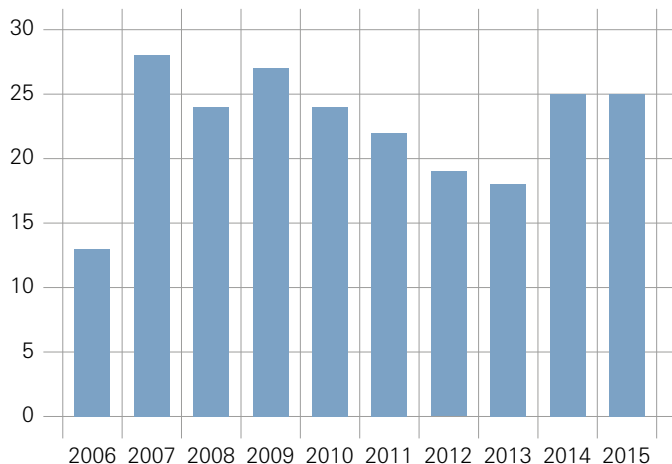
This appendix provides an overview of the quantity of research articles and working papers written by SNB staff in the last decade.

Articles in research journals

The quantity of articles in research journals has been stable since 2007 (cf. chart 1). SNB staff have 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.

CHART 1

Number of articles in research journals

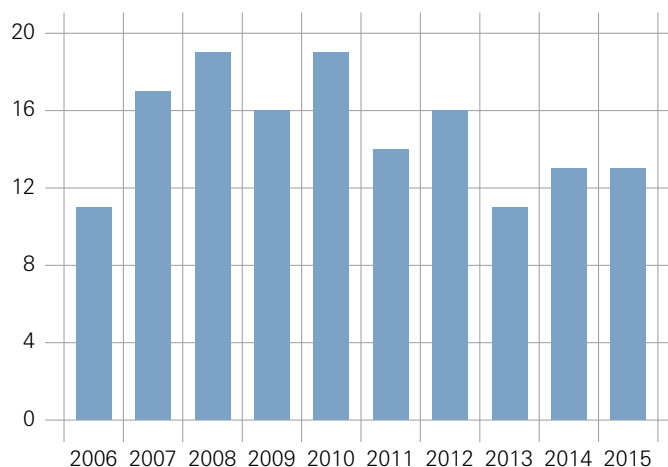


SNB working papers

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).

CHART 2

Number of SNB Working Papers



Published by
Swiss National Bank
Research Coordination
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P.O. Box
CH-8022 Zurich

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Neidhart + Schön AG, Zurich

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