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

Editorial

Dear reader

Thank you for your interest in the first issue of the SNB Research Update.

This new publication provides information on research activities at the Swiss National Bank. In-house research allows the SNB to contribute to academic discourse and at the same time facilitates the implementation of new research insights into monetary policy.

The SNB Research Update will be published semi-annually and presents recent research relevant SNB publications, with a special focus on a specific paper. It also provides further information on past and upcoming research relevant events organised by the SNB.

We hope you find the SNB Research Update informative.

Thomas J. Jordan
Chairman of the Governing Board

Contents

Editorial
Focus paper
SNB Working Papers
Publications by SNB staff
Events

Publisher
Swiss National Bank, Research Coordination
Börsenstrasse 15, P.O. Box, CH-8022 Zurich
E-mail research.update@snb.ch

Documents available at www.snb.ch, *Research*.

SNB Working Papers No. 2011-7

Sectoral Inflation Dynamics, Idiosyncratic Shocks and Monetary Policy

by Daniel Kaufmann and Sarah Lein[1]

Daniel Kaufmann and Sarah Lein estimate price responses to sector-specific and macroeconomic shocks in Switzerland for different sectors. The sectoral heterogeneity of these responses has implications for how macroeconomists should model the price-setting behaviour of firms. The authors find that the pattern of the sectoral heterogeneity is more in line with the menu cost model than with the rational inattention model of price setting. Furthermore, they find no evidence of a price puzzle (an increase after a tightening monetary policy shock in the aggregate price level), in accordance with standard economic theory. In the rental and durable-goods sectors, however, prices temporarily increase after a tightening monetary policy shock.

What drives sectoral price responses?

Recent research on price-setting behaviour has shown that although prices are adjusted relatively frequently at the firm level, inflation behaves sluggishly at the aggregate level. The present paper evaluates two theories – menu cost and rational inattention – that aim to reconcile these observations (cf. Theory box 1).

The authors use Swiss CPI data and a FAVAR approach (cf. Theory box 2) in order to empirically test these two theories.

The authors find that prices respond faster to sector-specific shocks than to macroeconomic shocks. Prices react particularly sluggishly to monetary policy shocks. Sector-specific shocks tend to cancel each other out at the aggregate level. Therefore, the aggregate CPI is mainly driven by macroeconomic shocks. Flexible prices are thus consistent with persistent inflation if the nature of the shocks is taken into account.

Authors: Sarah Lein and Daniel Kaufmann

Despite the overall slow reaction to monetary policy shocks, there is a substantial heterogeneity across sectors in the response to a monetary policy shock. Some prices show a rapid decline, for example non-durable goods, while other prices – such as rents – initially increase.

The authors show that sectors with more volatile idiosyncratic shocks react more strongly and more quickly to a monetary policy shock. In addition, the responses to a monetary policy shock tend to be slower in sectors with infrequent price adjustments. These findings support the theory of menu costs, and are not in line with the implications of the rational inattention model.

Theory box 1: Price-setting theory

Two popular theories to explain the sectoral differences in price setting are:

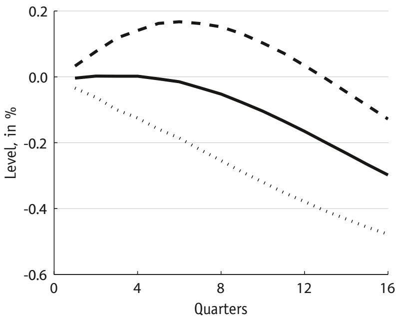
Menu costs

Menu costs refer to the costs that arise when adjusting prices (such as rewriting the menu). The larger these costs, the weaker the incentive to adjust prices frequently, irrespective of the nature of the shock. Those firms facing low menu costs would thus react quickly to both macroeconomic shocks and idiosyncratic shocks. Furthermore, firms that are faced with volatile idiosyncratic shocks would need to pay menu costs more often and thereby adjust prices more frequently to all types of shocks.

Rational inattention

According to rational inattention, firms have limited capacity to process information and therefore have to decide what to pay attention to. The theory predicts that firms facing volatile idiosyncratic shocks respond less to macroeconomic shocks.

Figure 1: Price responses to a tightening monetary policy shock



This figure depicts price responses of aggregate CPI (solid line) and two sectors – rents (dashed line) and non-durable goods (dotted line) – to a surprise increase in the 3M Libor by 25 basis points.

How do Swiss prices react to monetary policy?

Whilst standard economic theory predicts that prices fall immediately after a monetary policy tightening, the early VAR literature often showed price increases after the shock. This finding is referred to as the price puzzle. The literature shows that the price puzzle can be solved when identifying the monetary policy shock by using a FAVAR model.

In line with evidence for the US, the authors find that for Swiss data the price puzzle does not appear on the aggregate level when using a FAVAR (solid line in figure 1). However, in some sectors, monetary policy has a perverse effect on prices, with monetary tightening leading to higher prices. This is especially true for rents (dashed line in figure 1), but not surprising as rents are linked to the short-term mortgage rate in Switzerland.

Furthermore, whilst non-durable goods prices immediately decrease with monetary tightening (dotted line in figure 1), durable goods prices increase. The authors provide an economic interpretation for the response in the durable goods sector. Arguably, inventory holdings are more important for durable goods than for non-durable goods and services. To the extent that firms have to finance their inventories in advance, monetary policy may temporarily lead to higher costs for inventory holdings and thus lead to higher prices. In the literature, this is referred to as the cost channel of monetary policy.

Monetary policy transmission mechanism

The findings of this paper show that monetary policy has differing effects on different sectors in the Swiss economy. Some theoretical results in the literature suggest that in light of this, monetary policy should put more weight on price developments in sectors with slower responses.

[1] Swiss National Bank Working Papers No. 2011-7.
Part of this working paper was published in the *Swiss Journal of Economics and Statistics*: Daniel Kaufmann and Sarah Lein. 2012. Is There a Swiss Price Puzzle? *Swiss Journal of Economics and Statistics* 148(1): 57–75.

Theory box 2: FAVAR model

FAVAR stands for factor-augmented vector auto-regression. In a vector auto-regression (VAR) model it is assumed that each variable (such as inflation or GDP) depends on its own lagged values as well as on the lagged values of all other variables. In comparison to a standard VAR, the FAVAR also includes factors that summarise the information content of a large number of economic variables. Therefore, the FAVAR captures more information than a standard VAR. This is why FAVAR is less prone to price puzzles (a temporary increase in prices after a monetary policy tightening).

SNB Working Papers

SNB Working Papers No. 2012-3

Risk spillovers in international equity portfolios

Matteo Bonato, Massimiliano Caporin and Angelo Ranaldo

We define risk spillover as the dependence of a given asset variance on the past covariances and variances of other assets. Building on this idea, we propose the use of a highly flexible and tractable model to forecast the volatility of an international equity portfolio. According to the risk management strategy proposed, portfolio risk is seen as a specific combination of daily realised variances and covariances extracted from a high frequency dataset, which includes equities and currencies. In this framework, we focus on the risk spillovers across equities within the same sector (sector spillover), and from currencies to international equities (currency spillover). We compare these specific risk spillovers to a more general framework (full spillover) whereby we allow for lagged dependence across all variances and covariances. The forecasting analysis shows that considering only sector and currency-risk spillovers, rather than full spillovers, improves performance, both in economic and statistical terms.

SNB Working Papers No. 2012-4

Banking sectors' international interconnectedness: Implications for consumption risk sharing in Europe

Thomas Nitschka

Cross-border asset and liability holdings allow countries to insulate their consumption streams from idiosyncratic output shocks, i.e. consumption risk sharing. By contrast, banks' international interconnectedness spread the US subprime mortgage crisis to various economies with adverse macroeconomic consequences. This paper evaluates the partial impact of banks' cross-border links on the ability of their host countries to share consumption risk internationally. It shows that the impact of banks' links to the non-bank sector in the rest of the world on consumption risk sharing is negligible while strong interbank links are associated with relatively little consumption risk sharing of banks' host countries.

SNB Working Papers No. 2012-5

Information Asymmetry and Foreign Currency Borrowing by Small Firms

Martin Brown, Steven Ongena and Pinar Yesin

We model the choice of loan currency in a framework which features a trade-off between lower cost of debt and the risk of firm-level distress costs. Under perfect information, if foreign currency funds come at a lower interest rate, all foreign currency earners as well as those local currency earners with high revenues and/or low distress costs choose foreign currency loans. When the banks have imperfect information on the currency and level of firm revenues, even more local earners switch to foreign currency loans, as they do not bear the full cost of the corresponding credit risk. Thus information asymmetry between banks and firms can be a potential driver of 'dollarisation' in credit markets.

SNB Working Papers No. 2012-6

Retirement Age across Countries: The Role of Occupations

Philip Sauré and Hosny Zoabi

Cross-country variation in average retirement age is usually attributed to institutional differences that affect individuals' incentives to retire. We suggest a different approach. Since workers in different occupations naturally retire at different ages, the composition of occupations within an economy matters for its average retirement age. Using US data we infer the average retirement age by occupation, which we then use to predict the retirement age of 38 countries according to the occupational composition of these countries. Our findings suggest that the differences in occupational composition explain up to 39.2% of the observed cross-country variation in retirement age.

SNB Working Papers No. 2012-7

Housing Bubbles and Interest Rates

Christian Hott and Terhi Jokipii

In this paper we assess whether persistently too low interest rates can cause housing bubbles. For a sample of 14 OECD countries, we calculate the deviations of house prices from their (theoretically implied) fundamental value and define them as bubbles.

We then estimate the impact that a deviation of short term interest rates from the Taylor-implied interest rates have on house price bubbles. We additionally assess whether interest rates that have remained low for a longer period of time have a greater impact on house price overvaluation. Our results indicate that there is a strong link between low interest rates and housing bubbles. This impact is especially strong when interest rates are 'too low for too long'. We argue that, by ensuring that rates do not deviate too far from Taylor-implied rates, central banks could lean against house price fluctuations without considering house price developments directly. If this is not possible, e.g. because a single monetary policy is confronted with a very heterogenous economic development within the currency area, alternative counter cyclical measures have to be considered.

SNB Working Papers No. 2012-8

Reducing overreaction to central banks' disclosures: Theory and experiment

Romain Baeriswyl and Camille Cornand

Financial markets are known for overreacting to public information. Central banks can reduce this overreaction either by disclosing information to a fraction of market participants only (partial publicity) or by disclosing information to all participants but with ambiguity (partial transparency). We show that, in theory, both communication strategies are strictly equivalent in the sense that overreaction can be indifferently mitigated by reducing the degree of publicity or by reducing the degree of transparency. We run a laboratory experiment to test whether theoretical predictions hold in a game played by human beings. In line with theory, the experiment does not allow the formulation of a clear preference in favor of either communication strategy. This paper then discusses the opportunity for central banks to choose between partial transparency and partial publicity to control market reaction to their disclosures.

Publications by SNB staff

SNB Economic Studies

(None in this issue)

Publications in journals

Katja Drechsel and Rolf Scheufele. 2012.
The performance of short-term forecasts of the German economy before and during the 2008/2009 recession.
International Journal of Forecasting 28: 428-445.

Sebastian Giesen, Oliver Holtemöller, Juliane Scharff and Rolf Scheufele. 2012.
The Halle Economic Projection Model.
Economic Modelling 29(4): 1461–1472.

Mathias Hoffmann and Thomas Nitschka. 2012.
Securitisation of Mortgage Debt, Domestic Lending and International Risk Sharing.
Canadian Journal of Economics 45(2): 493-508.

Sébastien Kraenzlin and Martin Schlegel. 2012.
Bidding Behavior in the SNB's Repo Auctions.
Journal of International Money and Finance 31: 170-188.

Sébastien Wälti. 2012.
Trust no more? The impact of the crisis on citizens' trust in central banks.
Journal of International Money and Finance 31: 593-605.

Raphael A. Auer, Andreas M. Fischer and Andreas Kropf. 2012.
The arrival of cheap goods: measuring the impact of Chinese import competition on Nordic prices.
Sveriges Riksbank Economic Review 2012(2): 7-17.

Raphael Auer and Philip Sauré. 2012.
CHF strength and Swiss export performance - evidence and outlook from a disaggregate analysis.
Applied Economics Letters 19(6): 521-531.

Thomas Bolli und Mathias Zurlinden. 2012.
Measurement of labour quality growth caused by unobservable characteristics.
Applied Economics 44: 2297-2308.

Carlos Carvalho, Stefano Eusepi and Christian Grisse. 2012.
Policy initiatives in the global recession: what did forecasters expect?
Current Issues in Economics and Finance 18(1): 1-11.

Katja Drechsel and Rolf Scheufele. 2012.
The financial crisis from a forecaster's perspective.
Kredit und Kapital 45: 1-26.

Daniel Kaufmann and Sarah Lein. 2012.
Is There a Swiss Price Puzzle?
Swiss Journal of Economics and Statistics 2012(1): 57-75.

Other publications

Prof. Ernst Baltensperger. 2012.
Der Schweizer Franken – eine Erfolgsgeschichte
NZZ Libro

The Swiss franc was introduced in 1850 and was, for the first fifty years of its life, essentially a satellite of the French franc. Only after the establishment of the Swiss National Bank (SNB) in 1907 did it advance to become a strong and desirable currency. Under commission of the SNB, Ernst Baltensperger provides a history of the Swiss franc over the 19th and 20th centuries.

Patrick Halbeisen, Margrit Müller and Béatrice Veyrassat. 2012.
Wirtschaftsgeschichte der Schweiz im 20. Jahrhundert
Schwabe Verlag

Throughout the 20th century, Switzerland belonged to those countries with an especially high level of prosperity. In this broad-based study, the conditions for this ongoing success are presented, and the comparison is made with economic developments in other countries. Switzerland's unique path or *Sonderweg* is thereby examined anew.

Events

Past events

23/24 August 2012

Exchange Rates and External Adjustment

Host: Swiss National Bank, Zurich

The SNB, together with CEPR, held a conference on 'Exchange Rates and External Adjustment' in Zurich on 23/24 August 2012. Among others topics, the conference focused on the role of risk and financial intermediation as determinants of the exchange rate, external adjustment in and out of monetary unions, global imbalances, as well as the determinants of 'equilibrium' exchange rates. Thomas Wieser, President of the Economic and Financial Committee of the European Union and President of the Euro Working Group, delivered a keynote speech on external imbalances and adjustment in the euro area. The organisation committee of the conference consisted of Raphael A. Auer (SNB), Andreas M. Fischer (SNB and CEPR), Gian Maria Milesi-Ferretti (IMF and CEPR), Philip Lane (Trinity College Dublin and CEPR), and Cédric Tille (Graduate Institute for International and Development Studies, University of Geneva and CEPR).

14/15 September 2012

SNB Research Conference

Host: Swiss National Bank, Zurich

The SNB held its 6th annual Research Conference in Zurich on 14/15 September 2012. The theme of the conference was 'Policy Challenges and Developments in Monetary Economics' and provided a forum for discussing a wide range of theoretical and empirical issues related to current and future monetary policy challenges. The subjects of the papers presented and discussed this year addressed topical themes such as liquidity effects, the zero lower bound and prudential policies. Athanasios Orphanides, former Governor of the Central Bank of Cyprus and currently at the MIT Sloan School of Management and Goethe University Frankfurt, presented the dinner address, titled 'Monetary and banking challenges in the euro area: Towards a resolution?' The organisation committee of the conference consisted of Ernst Baltensperger (Study Center Gerzensee), Marcel R. Savioz (SNB) and Samuel Reynard (SNB).

20/21 September 2012

8th Dynare Conference

Host: Swiss National Bank, Zurich

The SNB, together with the Bank of France, CEPREMAP and DSGE-NET, held the 8th Dynare Conference in Zurich on 20/21 September 2012. Among other topics, the conference focused on dynamic stochastic general equilibrium (DSGE) modelling and related computational methods. Lawrence Christiano (Northwestern University) and Junior Maih (IMF) delivered keynote speeches. The organising committee of the conference consisted of Michel Juillard (Bank of France), Nicolas Cuche-Curti (SNB) and Alain Gabler (SNB).

2/3 October 2012

Workshop Deutsche Bundesbank, Schweizerische Nationalbank, Oesterreichische Nationalbank

Host: Oesterreichische Nationalbank, Vienna

The 14th annual joint workshop of the SNB, the Deutsche Bundesbank and the Oesterreichische Nationalbank was held in Vienna on 2/3 October 2012. Each central bank had the opportunity to present three working papers related to both monetary and fiscal policy. The workshop was organised by Martin Summer (OeNB).

19/20 October 2012

JME-SNB-SCG Conference

Host: Study Center Gerzensee (SCG), Gerzensee

A short summary will follow in the next issue.

Upcoming events

16/17 November 2012

Joint Central Bank Conference

Host: Fed Atlanta, New Orleans