



# Portfolio balance effects of the Swiss National Bank's bond purchase program



Andreas Kettemann<sup>a,1</sup>, Signe Krogstrup<sup>b,\*,1</sup>

<sup>a</sup> University of Zurich, Department of Economics, Schönberggasse 1, 8001 Zürich, Switzerland

<sup>b</sup> Swiss National Bank, Börsenstrasse 15, 8022 Zürich, Switzerland

## ARTICLE INFO

### Article history:

Received 17 May 2013

Accepted 15 March 2014

Available online 3 April 2014

### JEL classification:

E5

E65

### Keywords:

Portfolio balance

Corporate spread

Unconventional monetary policy

Central bank asset purchases

Zero lower bound

## ABSTRACT

This paper carries out an empirical investigation of the impact on bond spreads of the announcement, purchases and exit from the Swiss National Bank's bond purchase program in 2009–2010. We find evidence in favor of a narrowing yield spread of covered bonds as a result of the program. The effect materialized in the days following the announcement of the Swiss National Bank's intention to buy bonds issued by private sector borrowers, as markets learned that covered bonds were being bought. The specification of the bond spreads used allows us to identify this effect as a discounted portfolio balance effect of the expected purchases, as distinct from policy signaling. In contrast, we find no evidence of a further effect of the actual purchases and subsequent sales on bond spreads.

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## 1. Introduction

As policy rates were reduced to the lower bound in early 2009 in many western countries, and the economic outlook called for further monetary stimulus, a number of central banks resorted to using alternative monetary policy tools. Among these were outright asset purchases. The Federal Reserve engaged in large scale asset purchases in several rounds, starting in late 2008. The Bank of England carried out purchases of Gilts, also in several rounds. The Bank of Japan was engaged in government bond purchases even before the Financial Crisis, and has recently scaled up its asset purchases in connection with its quantitative monetary easing program. The ECB has also purchased sovereign bonds, although on a smaller scale and with a different objective. What is less well known is that the Swiss National Bank (SNB) has engaged in asset purchases as an unconventional policy measure. In March 2009, the SNB announced its intention to buy Swiss franc bonds by private issuers, after which it bought covered and non-bank corporate bonds directly from the markets. The SNB's bond purchase program is unique in international comparison in that the program has already been exited. Without announcement, the bonds were

\* Corresponding author. Tel.: +41 44 6313813.

E-mail addresses: [andreas.kettemann@econ.uzh.ch](mailto:andreas.kettemann@econ.uzh.ch) (A. Kettemann), [signe.krogstrup@snb.ch](mailto:signe.krogstrup@snb.ch) (S. Krogstrup).

<sup>1</sup> The views represented in this paper reflect those of the authors and not necessarily those of the Swiss National Bank. Thanks for valuable comments and suggestions to Katrin Assenmacher, Jean-Pierre Danthine, Oliver Gloede, Andre Guettler, Sebastien Kraenzlin, Christopher Neely, Angelo Ranaldo, Sandro Streit, Jonas Stulz, and an anonymous referee. Thanks also to participants at the SNB brownbag seminar, the University of Basel Research Seminar, the SGVS Annual Conference 2012, the Federal Reserve Day-Ahead Conference 2013, and the Annual Conference of the Swiss Society for Financial Market Research 2013. Finally, we would also like to thank Markus von Allmen and Marco Nigg for excellent research assistance.

discretely sold off in 2010. This paper looks at the effect of the announcement of the program, and exploits the variation in the Swiss data on bond purchases and sales to carry out an empirical investigation and identification of the effects of these on Swiss covered and corporate credit spreads.

In the literature, central bank asset purchases are seen as affecting long-term interest rates mainly through two channels. The first is the policy signaling channel. A policy signaling effect occurs when a central bank's engagement in asset purchases independently sends a signal to market participants about the central bank's view of the future outlook and intended future policy stance. This in turn affects expected future short-term interest rates. The second is the portfolio balance channel. Under certain assumptions about market imperfections, a central bank asset purchase can give rise to a portfolio balance effect because the purchase changes the remaining relative supply of the asset in the market. A large and very active empirical literature investigates the importance of the different channels of transmission. Recent examples of studies of the US and UK asset purchase programs include [Gagnon et al. \(2011\)](#), [Hamilton and Wu \(2012\)](#), [Neely \(2010\)](#) and [Joyce et al. \(2011a\)](#). Preliminary investigations of the ECB's securities markets program are discussed in [Manganelli \(2012\)](#). While this literature has made substantial advances in estimating the likely effect of central bank asset purchases on the yields of the purchased assets, it has proved harder to empirically identify the channels through which this effect has come about ([Bauer and Rudebusch, 2011](#); [Christensen and Rudebusch, 2012](#)). The predominant approach to identifying the transmission channels has been to estimate term structure models, noting that portfolio balance effects should affect only term premia, whereas policy signaling effects should affect only the risk neutral part of interest rates (i.e. expected future short rates). However, term structure estimation is uncertain and highly dependent on the specific model estimated.

We contribute to this literature by studying the effects of the SNB bond purchase program on bond spreads. In March 2009, the SNB announced that it would be purchasing Swiss franc bonds issued by private borrowers.<sup>2</sup> The announcement was part of a broader package of measures to address the adverse economic circumstances at the time, including more provision of liquidity and foreign exchange interventions. The purpose of the bond purchase program was to reduce risk premia and hence funding costs in capital markets. The bond purchases took place during the spring and summer of 2009. The purchased bonds were subsequently discretely sold back into the markets during 2010. This is, to the knowledge of the authors, the only central bank bond purchase program initiated as an unconventional policy measure during the financial crisis which has been fully exited.

As only one announcement of the program was made, and many other policy initiatives were announced by the SNB at the same occasion, we are not able to identify potential policy signaling effects of the announcement of this specific program. We are, however, able to identify portfolio balance effects. Data for the Swiss bond market allows us to compute a model-independent measure of the variation in the issuer-specific term premium for the categories of bonds purchased by the SNB. Portfolio balance effects affect the issuer specific term premium, while policy signaling effects do not. Following [Joyce et al. \(2011b\)](#), portfolio balance effects are identified by matching the variation in the issuer specific term premium with the announcement and time profile for the SNB bond purchases.

We find evidence that the SNB bond purchase program succeeded in significantly reducing the term premium on covered bonds following the announcement and initial implementation of the SNB bond purchase program. The findings suggest the presence of portfolio balance effects in the Swiss covered bond market. The actual purchases of covered bonds during the rest of 2009 were not associated with significant changes in the covered bond spread in the daily frequency. We do not find any effects of the unannounced sales of bonds in 2010 on bond spreads at the daily frequency.

One interpretation of these findings is that markets fully and correctly discounted the expected effect of the purchases and subsequent sales in the days following the onset of the program, leaving no further effects of the actual purchases and sales when these occurred. This would have required that markets correctly forecasted the SNB's intended purchases and sales, both in terms of volumes and dates, which is unlikely. Another interpretation is that portfolio balance effects of the actual purchases and subsequent sales possibly did occur, but the size and sign of these varied over time depending on market expectations and information about the central bank's actions. In this latter case, our data and econometric methods would not allow us to pick up these effects. Moreover, a high likelihood of reverse causality in the actual bond purchases and sales may have biased parameter estimates toward zero.

The paper proceeds as follows. Section 2 discusses how central bank purchases of Swiss corporate bonds should be expected to affect credit spreads, and how we identify these effects empirically. Section 3 describes an index of the credit spread for sub-categories of bonds in the Swiss bond market. This index allows us to isolate the exact component of the term premium which is affected by portfolio balance effects of central bank purchases. Section 4 presents the data and conducts an event analysis based on graphical evidence, while Section 5 outlines the econometric approach and provides regression results. The final section concludes and the appendix provides details on the data.

## 2. The SNB bond purchase program and identification of its impact

At 2:00 pm on 12 March 2009, in connection with its regular quarterly monetary policy assessment, the SNB announced that it would engage in purchases of Swiss franc bonds issued by private sector borrowers, in order to reduce risk premia and

<sup>2</sup> A similar idea for the US bond market is described in [Duca and Murphy \(2013\)](#).

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