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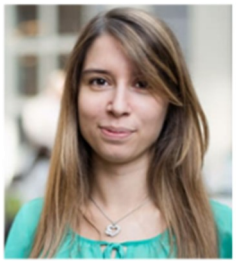
When domestic and foreign QE overlap[1]




By Paola Di Casola[2] and Pär Stockhammar[3]

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What are the effects and transmission channels of asset purchase programs conducted simultaneously locally and abroad on a small open economy? This question is particularly relevant in the current situation, when the recovery after the pandemic might require major central banks around the world to consider a normalization of monetary policy and small open economies may be affected both by the foreign and domestic quantitative tightening. Studying the case of Sweden, we find that the Riksbank QE raised GDP, lowered unemployment and depreciated the local currency, while effects on inflation are less clear. The ECB QE had large positive spillover effects on both GDP and inflation in Sweden and induced an endogenous response of the domestic QE program. The domestic QE worked through improved lending conditions for households and lower expected future rates, while the foreign QE improved financing conditions for firms.

[1] This policy brief should not be reported as representing the views of Sveriges Riksbank or the European Central Bank. The views expressed are those of the authors and do not necessarily reflect those of the Riksbank, ECB or the Eurosystem.

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1. Introduction

The Covid-19 pandemic induced many central banks around the world to intervene to help the functioning of the financial markets and cut their interest rates close to the effective lower bound to stimulate the economy. With the pandemic, unconventional monetary policy tools, such as large-scale asset purchases, were used contemporaneously by many central banks. Despite a large literature on the macroeconomic effects of quantitative easing (QE) programmes (Borio and Zabai, 2016, Bhattarai and Neely, Forthcoming, Dell'Ariccia et al., 2018, Kuttner, 2018 and BIS, 2019), there is still limited knowledge on the effects and distinctive transmission mechanisms of domestic and foreign QE programmes in small open economies.

In Di Casola and Stockhammar (2021) we use the case of Sweden and study the effect of the Quantitative Easing (QE) programmes conducted by Sveriges Riksbank and the ECB during the period 2015-2018, highlighting the different financial transmission channels.[4] Sweden is a small open economy strongly affected by shocks originating from its main trading partners, such as the euro area (Corbo and Di Casola, 2022). Moreover, interest rates in Sweden were cut into negative territory during the period the Riksbank purchased government bonds. Hence, QE was conducted at the same time as conventional monetary policy.

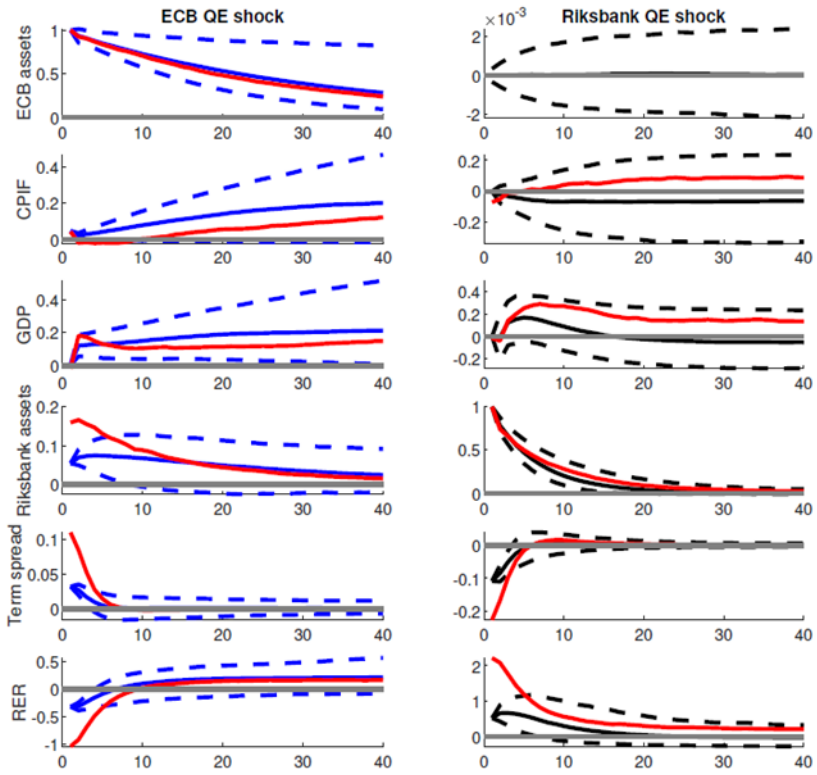
2. Methodology

In order to address the specific features of the Swedish QE programme, we use a structural BVAR model with two identification schemes, inspired by Weale and Wieladek (2016), which we extend to account for foreign QE, the exchange rate channel and the contemporaneous conventional monetary policy carried out in Sweden. One identification strategy (identification I) relies on zero short-run restrictions, while one relies on short-run zero and sign restrictions (identification II). In both cases, no assumptions are made on the sign of the effect of domestic and foreign QE shocks on Swedish output and prices. The main benefit of this approach is the use of the cumulative announcement of purchases by the ECB and the Riksbank, scaled by GDP, as proxy for QE, thereby allowing for the effects of QE announcements in a BVAR model. The distinction of the two types of QE shocks relies on the assumption that the Swedish QE programme was determined both by Swedish economic conditions and the ECB QE programme – in line with the assumption that Sweden is a small open economy.

[4] De Rezende and Ristiniemi (2020) is another paper studying the effects of the Riksbank's 2015-2017 QE programme on the macroeconomy, deriving a shadow rate for Sweden.

3. Results

Figure 1. Impulse response functions to ECB QE shock (left) and Riksbank QE shock (right)



Note: Results refer to Identification I (blue and black lines) and Identification II (red lines). Sample period is 2015:01-2018:12. Responses are in percentage terms. The solid lines represent the median response. The dashed lines denote a 68 percent credible interval.

We find that the Riksbank QE shock had expansionary effects on the real economy, both in terms of output and unemployment, while the effects on prices are less clear, even though the Swedish krona weakened in real terms in response to QE (Figure 1). Using the scaling of purchases over GDP, the effects on output are comparable to the effects found in the VAR literature for the US, the euro area and UK (see Table A1 in Appendix). At the same time, the ECB QE shock had expansionary effects both on output and inflation in Sweden, despite the Swedish krona strengthening on impact (Figure 1). Following the ECB QE shock, inflation expectations and households' confidence increased in Sweden. These effects are comparable to the effects found in the VAR literature for the ECB QE on the euro area (see Table A1 in Appendix). The positive spillover effects are partly due to the response of the Swedish asset purchase programme to the ECB's programme, that limited the appreciation of the real exchange rate. The larger effect of foreign QE rather than domestic QE on Swedish inflation seems to be driven also by energy prices, in line with studies of spillover effects of ECB monetary policy, that turns out to affect non-oil commodity prices globally (Ca' Zorzi et al., 2020).

We find evidence of the exchange rate channel of QE and low exchange rate pass-through. Regarding the signalling channel, the Riksbank QE lowered the interest rate expectations six months, two and five years ahead, unlike the ECB QE. There is also evidence of the portfolio balance channel for both the domestic and foreign QE, but in different ways. The domestic QE shock improved the domestic financing conditions more than the ECB QE

shock. The ECB QE transmitted through a drop in risk premia, for both corporate and mortgage bonds in Sweden. These results are consistent with the large role of funding in global financial markets of Swedish banks and firms (Gustafsson and von Brömsen, 2021).[5] The Riksbank QE shock raised stock prices and housing prices, and lowered the term spread.

Few papers in the literature discuss the spillovers of foreign QE for a small open economy. Examples of empirical studies on the spillovers of the ECB's asset purchase programmes are Bluwstein and Canova (2016), Chen et al. (2017), Moder (2019) and Kolasa and Wesolowski (2020). To the best of our knowledge, our paper is the first one to evaluate the different effects and transmission channels on a small open economy of domestic and foreign QE programs conducted at the same time.

4. Conclusions

The main contribution of our work to the current policy debate is the importance of evaluating the role of spillovers of foreign unconventional monetary policy for small open economies and the response of the central banks of those economies with their domestic unconventional monetary policy. This question is particularly relevant in the current situation, when the recovery after the pandemic might require major central banks around the world to consider a normalization of monetary policy and small open economies may be affected both by the foreign and domestic quantitative tightening.

Appendix

Table A1. Standardized effects of QE programmes

Country	Peak effect on GDP	Total effect on inflation
	Baseline model Identification I / II	
ECB → Sweden	0.21*/0.18	0.22*/0.12
Riksbank → Sweden	0.16*/0.29	-0.06/0.09
	VAR models in the literature (Fabo et al., 2021)	
USA	0.32	0.24
UK	0.14	0.05
Euro area	0.26	0.08

Note: Results for Sweden come from baseline model with Identification I (with short-run zero restrictions) and Identification II (with short-run zero and sign restrictions), standardized to one percent of GDP of the correspective economy. * refers only to results for Sweden and indicates that at the time of the effect the 68 percent credible intervals are excluding zero. Data for UK, USA and euro area from Fabo et. al. (2021), average values from 48 studies. Effects in percentage terms.

[5] Given their financing through the financial market, corporate and mortgage spreads are important indicators of financing conditions for firms, but also foreign market conditions are extremely important for Swedish banks and firms.

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