Discussion of "Beggar-Thy-Neighbor? The International Effects of ECB Unconventional Monetary Policy Measures"

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1. Introduction

The paper by Bluwstein and Canova advances our understanding about the existence and nature of potential spillovers of non-standard monetary policy measures executed in the euro area into other European economies. It appears to be the first paper analyzing the output, inflation, and financial market spillovers of European Central Bank (ECB) non-standard measures for neighboring European Union countries and thus is a most welcome addition to the increasing number of empirical studies analyzing and quantifying the effects on non-standard monetary policy measures. Understanding the spillover effects of non-standard measures is especially important for assessing whether or not the potential gains of non-standard measures within the euro area come at the expense of other neighboring economies, which would limit their overall usefulness from an aggregate standpoint.

The analysis covers the data period starting in December 2008 and ending in May 2014, thus excluding the recent period with large-scale public bond purchases of the ECB that was initiated in the beginning of 2015 under the Public Sector Purchase Programme (PSPP). Nevertheless, over the considered sample period the ECB implemented a large number of non-standard policy measures, including foreign currency lending operation (backed by currency swap agreements with other central banks), longer-term refinancing operations (LTROs) of increasing duration, and covered bond purchases (CBPs). In addition, it has announced the Outright Monetary Transactions (OMT) program, which was never activated, and it has issued forward guidance on the future path of interest rates. There is thus no shortage of non-standard measures within

the considered sample period, even if the implemented measures display a considerable degree of heterogeneity over time.

The list of countries considered for potential spillover effects includes a set of advanced European countries (Denmark, Sweden, Norway, and Switzerland), two Central and Eastern European countries (Czech Republic and Poland), and three Southeastern European countries (Bulgaria, Hungary, and Romania). The omission of the United Kingdom is noteworthy but may be motivated by the fact that it conducted non-standard monetary policy on its own on a fairly large scale. Clearly, the set of considered countries displays a substantial degree of heterogeneity in terms of their exchange rate arrangements, their economic structure, and their stage of economic and financial development. This heterogeneity will also be reflected in the transmission outcomes.

To analyze the spillovers, the analysis uses an innovative mixed-frequency vector autoregression (VAR) approach at a weekly frequency, which allows the combining of higher-frequency financial data with lower-frequency macroeconomic data within a common dynamic framework. The authors use this approach to first estimate euro-area dynamics and then add, in a second stage, a VAR for the non-euro-area country, so as to estimate the spillover effects.

In terms of findings, the main takeaways for the euro area are as follows: (i) non-standard monetary policy measures are found to have no significant effect on euro-area output and only a slightly positive effect on inflation, which is marginally significant at the 32 percent level for about six to eight weeks; and (ii) announcements of non-standard measures are found to have no significant effects on euro-area output, inflation, stock prices, credit default swap (CDS) spreads, or the three-month EURIBOR-EONIA spread.

Overall, with regard to the effect on non-standard measures on standard monetary policy target variables, i.e., output and inflation, the documented responses are somewhat disappointing and suggest that the non-standard measures implemented during the sample period had largely insignificant effects in the euro area. The fact that even the stock market reaction to announcement effects proves insignificant, however, suggests that the analysis is missing an important part of the reaction. As is well known (see Krishnamurthy, Nagel, and Vissing-Jorgensen 2015), the stock market did react significantly around OMT announcement days. It may thus be

the case that the heterogeneity across the considered non-standard measures damages the statistical significance of the average effects identified by the VAR.

Regarding the transmission of non-standard measures into non-euro-area countries, the main findings are as follows: (i) advanced countries tend to display a mildly positive output response and no inflation response; (ii) Central and Eastern European countries display no significant output response and a positive inflation response; and (iii) Southeastern European countries tend to display a negative output response (particularly Romania) and a positive inflation response (particularly Bulgaria).

In terms of output gains or losses, non-standard monetary policy measures in the euro area thus appear *not* to have any quantitatively significant beggar-thy-neighbor effects for European countries outside the euro area. Given that non-standard policy measures also fail to have significant output effects in the euro area itself, this may not come as too big of a surprise.

My discussion of these findings will focus on the following points: I will start by discussing some aspects of the VAR specification used for estimating the effects of non-standard monetary policy, then discuss how the stance of non-standard monetary policy is measured in the main analysis and how robust the main findings are toward using other measures. Finally, I will review some of the intriguing findings about what drives the heterogeneity of the transmission into other European economies.

2. VAR Specification and Weak Exogeneity Assumptions

The estimation approach pursued consists of first estimating a VAR for the euro-area variables y_{1t}, given by

$$A_{0,11}y_{1t} = A_{1,11}(L)y_{1t-1} + B_1\omega_t + \epsilon_{1t},$$

where $A_{0,11}$, $A_{1,11}$, and B_1 denote coefficient matrices and y_{1t} contains monthly euro-area variables (industrial production, monthly CPI inflation, a measure of the non-standard monetary policy stance, stock prices, the three-month EURIBOR-EONIA spread, and a (weighted) euro-area CDS spread). A distinguishing feature of the VAR specification is that the variable vector ω_t is treated

as weakly exogenous to the dynamics of y_{1t} and contains—amongst other things—a number of (standard and non-standard) monetary policy variables. In particular, ω_t contains in the baseline specification the short-term nominal interest rate and the announcement dummy for non-standard policy measures. The fact that monetary policy variables are treated as weakly exogenous in a VAR that seeks to estimate the effects of monetary policy distinguishes the paper from other studies, which typically include the policy variables in the vector of endogenous variables y_{1t}, e.g., Boeckx, Dossche, and Peersman (2014). Presumably, this approach is motivated by the fact that interest rate dynamics were constrained over part of the sample periods by their lower bound and that linear VAR dynamics have difficulties in appropriately capturing the non-linearities. This said, the assumption of weak exogeneity may not be innocuous.

Following Engle, Hendry, and Richard (1983), some variable ω_t is weakly exogenous to some the parameters of interest (the coefficient matrices $A_{0,11}$, $A_{1,11}$, and B_1 that the authors seek to estimate), if the dynamics of ω_t are free to vary *independently* of the parameters $A_{0,11}$, $A_{1,11}$, and B_1. Since ω_t includes monetary policy variables, this requires—amongst other things—that monetary policy can vary freely without affecting the dynamics of y_{1t} conditional on ω_t. This assumption would be violated by any structural economic model in which different monetary policy rules give rise to different dynamics for output and/or inflation.

The previous considerations suggest that the weak exogeneity assumption is likely going to be violated in practice and that the estimates of $A_{0,11}$, $A_{1,11}$, and B_1 and thus the estimated impulse response functions are asymptotically biased. The extent to which this bias is quantitatively relevant is, however, a priori unclear. It is equally unclear whether or not including the policy variables in y_{1t} and estimating a linear VAR specification leads—due to the omission of non-linearities—to smaller biases or to different conclusions. While I am sympathetic to the approach pursued by the authors, it would have been great to understand better to what extent results prove sensitive toward including the policy variables in the vector of endogenous variables y_{1t}.

Another feature of the VAR specification is that its specification varies depending on the considered policy shock. To estimate the effects of unconventional monetary policy shocks, the specification

is as described in the previous paragraphs. When estimating the effects of a conventional monetary policy shock, however, the authors move the short-term nominal interest rate into the vector y_{1t} and put the non-standard policy variable into the set of weakly exogenous variables ω_t. A third specification is used when estimating the effects of "announcements" about unconventional monetary policy. The announcement variable is then moved into the vector y_{1t} and the unconventional monetary policy variable is included (in lagged form) in the set of weakly exogenous variables ω_t. Unfortunately, it remains somewhat unclear exactly what motivates these different specifications. Clearly, tracking over time the data-implied dynamic response of the policy variable following an initial policy disturbance requires including the policy variable in the set of endogenous variables. The authors apparently believe it to be important to track this dynamic response, possibly to guard against potential violations of the weak exogeneity assumption. This said, if endogeneity of some variable is a concern, then it would be more appealing to consistently treat the variable as endogenous across all specifications.

3. Measuring the Stance of Non-Standard Monetary Policy in the Euro Area

The baseline approach measures the stance of unconventional monetary policy by summing up the liquidity issued through the long-term refinancing operations (LTROs), through purchases of government bonds within the Securities Market Programme (SMP), and through purchases within the covered bond purchase programs (CBPs). It is important to note that besides purchasing rather different assets,[1] these programs have fairly different maturity structures and thus may have rather different effects on the economy.[2] Furthermore, some of these programs, especially the LTROs, may simply be a substitute for (repeated) standard short-term liquidity operations, so that by summing up the total liquidity issued via LTROs, one

[1] LTROs do not purchase assets but issue liquidity against appropriate collateral.

[2] The maturity of LTROs gradually increased from six months to thirty-six months. The SMP injected liquidity for a period equal to the maturity profile of the acquired bonds, i.e., on average for several years, while covered bonds tend to have an even longer maturity profile.

may exaggerate the overall amount of additional liquidity issued. This in turn may induce a downward bias in the size of effects of unconventional measures in the euro area and their spillovers into other economies. To check the robustness to such considerations, the authors repeat their analysis using a measure of excess liquidity instead as their unconventional monetary policy variable. Excess liquidity is thereby defined as the amount of central bank balances that are issued in excess of the mandatory reserve requirements and net of reserves that are redeposited at the Eurosystem. Unfortunately, however, the euro-area inflation response to a euro-area unconventional monetary policy shock becomes largely insignificant once the stance of monetary policy is measured using excess reserves. See figure 7 in appendix 3.

4. Transmission into Non-Euro-Area Countries

An interesting finding of the paper is that the country spillovers appear to be heterogeneous depending on whether the share of banks owned by foreign owners is high or low. Countries with a low foreign bank share experience a stock price decline, and (CDS) risk increases following an expansionary euro-area non-standard monetary policy shock; countries with a high foreign bank share experience the opposite reaction. What is interesting is the fact that it is precisely the countries facing a worsening in financial conditions (stock price decline and CDS increase) that experience an expansion of industrial production, while countries with improving financial conditions experience a slight real contraction. This difference is obtained even though the exchange rate responses for both country sets are fairly similar.

Since countries with a low foreign bank share tend to be financially more advanced countries, the reported results tend to be in line with previous findings in literature, but it remains somewhat mysterious how precisely countries whose financial conditions deteriorate more can experience a better real performance. Understanding this seemingly paradoxical finding would be of importance. Unfortunately, the evidence presented in section 5.1 which—at least in principle—could shed light on the transmission channels has fairly weak theoretical foundations. Contrary to the authors' suggestion, one cannot reliably compute the impact of a particular transmission

channel simply by exogenously altering the path of endogenous variables in the VAR (exchange rates, stock prices, etc.). In any case, the findings that financial development matters for the impact of non-standard monetary policy measures points toward the existence of a potentially important trade-off in terms of having to accept either adverse financial market consequences or experience worse real responses.

References

Boeckx, J., M. Dossche, and G. Peersman. 2014. "Effectiveness and Transmission of the ECB's Balance Sheet Policies." CESifo Working Paper No. 4907.

Engle, R. F., D. F. Hendry, and J.-F. Richard. 1983. "Exogeneity." *Econometrica* 51 (2): 277–304.

Krishnamurthy, A., S. Nagel, and A. Vissing-Jorgensen. 2015. "ECB Policies Involving Government Bond Purchases: Impacts and Channels." Mimeo, Stanford University.