

Discussion of “The Financial and Macroeconomic Effects of the OMT Announcements”*

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1. Introduction

In their paper titled “The Financial and Macroeconomic Effects of the OMT Announcements,” Carlo Altavilla, Domenico Giannone, and Michele Lenza (henceforth, AGL) aim at quantifying the financial and macroeconomic effects of the European Central Bank’s (ECB’s) announcements about the possibility of engaging in outright monetary transactions (OMTs). Specifically, the financial impact is estimated using an ameliorated version of the commonly used event-study methodology; subsequently, the estimated size of the high-frequency financial impact is imposed as an “OMT shock” in a lower-frequency vector autoregression (VAR); and finally, the macroeconomic effect is given by the difference between the macro variables’ forecasts implied by the VAR with and without the “OMT shock,” which decreases the government bond yields only of Italy and Spain. The key result is that the financial and macroeconomic effects are found to be statistically and economically significant for relatively more distressed euro-zone countries.

While most of the literature that attempts to measure the impact of central bank unconventional policies focuses on financial markets, AGL is one of the few studies that goes beyond the financial impacts and tries to determine the wider economy effects. Therefore, it is a nice advance over previous efforts to quantify the efficacy of the ECB’s unconventional monetary policies in the euro area, which is much more difficult than evaluating the efficacy of the

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Federal Reserve's unconventional policies in the United States. This is because, in the case of the euro zone, researchers have to account for a multi-country framework with very heterogeneous countries; a model specification that is flexible enough to capture spillovers among variables and countries; the ECB's policy decision announcements taking place in stages, arguably more complex and less transparent; and the possibilities that past regularities in relations across variables and countries may not hold in the post-announcement period—not to mention having to deal with a shorter sample period due to the introduction of the euro in 1999.

Recognizing all these difficulties has been an extremely humbling process that has raised some additional concerns relative to those that usually apply to the type of analysis and methodologies employed in this study (e.g., we all know that event-study analysis cannot tell us anything about the impact's persistency; this would be one of the usual concerns that I am not going to address in this discussion), which to some extent are common to many empirical works focused on evaluating central bank unconventional policies.

The first set of concerns is about applying the event-study methodology to the OMT announcements, as these announcements are about the *possibility* of engaging in a policy rather than *actually* engaging in a policy or engaging in a policy with well-defined parameters. To fix ideas, before analyzing the problematic aspects of OMT announcements in more detail, it might help to order a few unconventional monetary policy announcements by an increasing degree of difficulty in the identification and estimation of their effects: the first U.S. large-scale asset purchase (LSAP) program, the third U.S. LSAP program, and the ECB's OMTs. The first LSAP is, in my mind, the only case where an event-study methodology can be applied with little concern, as it was mostly unexpected, all the relevant information is released during the announcement, and the content of the announcement reveals clearly the program's main characteristics, that is, a fixed size, a specific duration, and even the intended maturity distribution of purchases. The third LSAP is much harder to evaluate based on the related announcements because it was mostly expected, that is, the information about a potential third round of quantitative easing (QE) was incrementally released to the public through different Federal Reserve communication tools, and it was open ended, which implies that on

the announcement day market participants could not determine the total size and duration of the program. The three OMT announcements not only were mostly expected by investors but also were about programs that never were activated, so the resolution of uncertainty is incomplete. Thus, the associated expectation formation process after and in between each of the OMT announcements will also be incomplete. This in turn implies that the effect on asset prices will not be exhausted within a small time window around the announcements. This is the reason why I think that the event-study methodology, in this particular case, can only *partially* capture the impact of these policies.

The second set of concerns deals with applying a linear model with time-invariant parameters to estimate the macroeconomic effect of OMT announcements. Although this is always a concern when we estimate VAR models, and therefore it may seem an unfair comment, in the particular cases where we deal with exceptional economic circumstances and unconventional policies that are meant to shape expectations about future events, these concerns become more important, especially if the analysis does not control properly for direct measures of expectations. I will elaborate on this in more detail in section 3.

The third set of concerns has to do with the choice of a pertinent counterfactual to evaluate the macroeconomic impact of the OMT announcements. More specifically, I will suggest an alternative “counterfactual” that, for various reasons that I will mention soon, I consider at least as valid as the one used in this study.

Finally, I will conclude by providing some additional suggestions that could both improve the robustness of the empirical analysis and widen its scope a bit.

2. The Financial Impact of OMT Announcements

As already mentioned, the financial impact is estimated using a controlled event-study approach that focuses on three *consecutive* announcements about the *same* unconventional monetary policy, that is, the OMTs. During the last announcement, the technical features of the OMTs are released; however, this program has never been activated. It is extremely challenging to identify and estimate the effects of unconventional monetary policy announcements for

which it is hard to determine the type of announcement, the size of the program, the duration of the program, the euro-zone countries that qualify for the program, and so on. Most of these features, which after the first two announcements were still left to the ECB's discretion, were never revealed to the public, and in the end, the OMT policy turned out to be only about communication (and no action), albeit incomplete communication. Thus, it is reasonable to assume that after the first two announcements, market participants could have been waiting for more clarification, and it can be seen from the plots of the government bond yields shown in AGL that those yields declined significantly well before the third OMT announcement, suggesting that news about the content of the last ECB press release had emerged between announcements.

For example, *Der Spiegel* on September 6, 2012, reported the following: "The ECB has resembled a sieve this week. Ahead of Thursday's much anticipated press conference, financial websites and business papers were full of reports detailing ECB President Mario Draghi's plan for holding down the borrowing costs of debt-plagued euro-zone member states. Discretion was in short supply." This strongly suggests that after the first OMT announcement, as the ECB signals its intentions gradually and ahead of the official policy announcements, it becomes increasingly harder to even identify the relevant events to include in the event study, not to mention to choose the length of the event window.

The ECB's OMT announcements are one of the many instances where this type of concern applies. As is often the case, for most unconventional policy announcements following the first one of a significant series, central banks moved to provide *incremental* news about their intentions through different communication tools, such as each policy meeting's statement (including those meetings characterized by inaction), policymakers' speeches and interviews, and even policy conferences (e.g., the Jackson Hole Economic Policy Symposium). More importantly, frequently, the beginning and adjustment of these policies became conditional to data, implying that any data release could affect expectations about these programs, and these changes in expectations would get priced in across various financial assets. In other words, when central banks' communication about a certain program becomes gradual, incremental, and conditional to data, it becomes extremely tricky to correctly identify all the

relevant events. Unless it is possible to control for the evolution of market expectations about the unconventional policy ahead of the few chosen announcements, it is difficult to obtain correct estimates of the financial impact relying only on event studies. Nevertheless, this is often the best an econometrician can do given the available information.

Further, dealing with consecutive announcements about a program that does not get implemented makes it even harder to apply the event-study methodology, as following each of the announcements there is no validation of the change in expectations triggered by the announcement itself, so expectations and therefore asset prices must keep changing in subsequent days. I do not have a good suggestion on how to deal with this particular problem. Previous studies have suggested different approaches to address some of the complications introduced by different types of unconventional policy announcements. For example, Trebesch and Zettelmeyer (2014) show how to modify the methodology of D'Amico and King (2013), which has been used to estimate the impact of the first LSAP (the relatively easier case), to measure the effects of open-ended programs such as the ECB's Securities Markets Programme (SMP) or similarly the Federal Reserve's third LSAP; D'Amico et al. (2014) illustrate the importance of isolating the unexpected component of the Federal Reserve's LSAPs' and maturity extension programs' (MEPs') announcements to evaluate the efficacy of these policies. But, as was already stressed in the introduction, dealing with these Federal Reserve policies' announcements is much easier than dealing with the OMT announcements. The only tentative suggestion I have is to try to develop a two-step estimation procedure for the daily regressions, where in the first step, maybe using interest rate derivatives, AGL should try to keep track of the probability of an OMT announcement occurring given the macroeconomic surprises in the period before the announcement, that is, using their same notation, try to estimate the $\Pr(D_t = 1 | News_{t-1})$, where D is the dummy that equals one if the announcement occurs and $News$ is the macroeconomic surprises. Then, in the second step, estimate the impact of the OMT announcements controlling for this probability. And eventually, following the first OMT announcement, AGL should try to keep track of the probability of the OMT program being activated conditional to the previous announcement and macroeconomic surprises,

that is, using again their same notation $\Pr(OMT_t > 0 | D_{t-1} = 1, News_{t-1})$.

3. The Macroeconomic Effect of OMT Announcements

Let me first start with what I perceive to be the broader objective of the OMTs and then discuss how this might affect the estimation of the macroeconomic effect. In one of the statements about OMTs, ECB President Mario Draghi said the following: “OMTs will enable us to address severe distortions in government bond markets which originate from, in particular, unfounded fears on the part of investors of the reversibility of the euro. Hence, under appropriate conditions, we will have a fully effective backstop to avoid destructive scenarios.” Differently from the Federal Reserve’s LSAPs and MEPs, it seems to me that the most immediate objective of the OMTs is not to stimulate economic activity but to provide insurance against worst-case scenarios. Therefore, effectively, these announcements may have changed the shocks’ distribution by cutting the extreme right tail, if we think in terms of very large and positive shocks to government bond yields. Alternatively, if we think in terms of lower probability of destructive growth scenarios, then we might say that these announcements eliminated the extreme left tail. Either way, risk is strongly reduced and the volatility of the variables included in the VAR might be much smaller. In other words, the post-OMT sample period may be characterized by non-Gaussian distributions of the shocks, and non-linearities become more relevant than previously experienced.

Further, in principle, “whatever-it-takes” type of announcements (that is, the first announcement included in the AGL’s study), similarly to forward guidance, are about *commitments* to *future* policy actions. In other words, their main objective is to manipulate expectations about the future state of the economy by convincing investors today that the central bank will act tomorrow, if necessary. If the VAR model includes direct measures of expectations and these commitments to future policies are perceived as something new, then they will manifest either as shocks to expectations of future variables or as future changes in the VAR’s coefficients (e.g., the coefficients of the perceived monetary policy rule). But, if the VAR model doesn’t control properly for expectations, almost certainly they will

show up as future changes in the coefficients, making time-invariant parameters a more acute problem.

Overall, considering the potential issues raised so far about nonlinearities and time-varying parameters, it seems to me that, to improve the econometric analysis, it becomes important to try to do the following: (i) control for direct measures of expectations in VAR models (see for example, Chun 2011; Orphanides and Wei 2012; D'Amico and King 2015; Piazzesi, Salomao, and Schneider 2015); (ii) show robustness of the VAR estimation to the inclusion/exclusion of the OMT period to verify the stability of the parameters; and (iii) eventually, estimate a time-varying VAR that can capture shifts between the pre- and post-OMT periods (e.g., Baumeister and Benati 2013).

Let me now turn to the discussion of the choice of a pertinent counterfactual to correctly quantify the macroeconomic effect of the “OMT shock.” When I started reading the section about the forecasting exercise, my first reaction was to think immediately about a more obvious way (at least to me) to quantify the impact of a shock when I am estimating a VAR: to compute impulse response functions (IRFs). That is, instead of stopping the estimation in 2012:Q3 and evaluating the macroeconomic effect through the lens of a forecasting exercise that prevents the use of the full sample (especially considering the length of the quarterly sample period), what about using all the available data, including the post-OMT period, and simulating the IRFs to a 200-basis-point shock in the path of the two-year yield that leaves the policy rate path unchanged over the same period? It might capture better what actually happened following the “OMT shock.” Further, using this alternative approach, it is easier to verify if the IRFs to the “OMT shock” change once the post-OMT period is excluded. And, if in 2012:Q3 there was a structural break in the regularities across variables and countries relations, then the forecasting exercise based on the pre-2012:Q3 estimates might not be the best approach.

3.1 Additional Suggestions for the VAR Estimation

If we are trying to evaluate the impact of a policy that might change the amount of government-issued bonds that mature in one to three years, it might be reasonable to include quantity variables in the

VAR, as, at the very least, those variables might help us understand the heterogeneous response across countries. For example, I would control for the amount of government debt with three years or less left to maturity in each country and/or banks' holdings of GIIPS (Greece, Italy, Ireland, Portugal, and Spain) countries' debt in each country (e.g., Acharya et al. 2015).

In addition, to better capture the risk channel of OMTs and avoid issues related to the impact of unconventional monetary policy on the term structure of interest rates, in the VAR specification I would replace the ten-year yields with the credit default swap spreads.

Finally, if the spillovers between OMT effects on the two-year yield and the policy rate path are significantly different from zero in the VAR estimation, killing these spillovers in the OMT scenario—depending on whether policy tools that affect the policy rate and the OMTs are perceived as complements or substitutes—can bias estimates of the macroeconomic effect in either directions. For example, if OMT announcements are interpreted as signaling that the policy rate path might stay lower for longer (that is, the policy tools are perceived as complements), then killing those spillovers (that is, assuming that the policy rate path is unchanged) might bias downward the estimated magnitude of the macroeconomic effect.

4. Additional Considerations for Future Research

To widen a bit the scope of AGL's analysis and in light of the recent literature investigating the different channels of the transmission mechanism of unconventional monetary policies (e.g., Krishnamurthy and Vissing-Jorgensen 2011; D'Amico et al. 2012; Li and Wei 2013), I would encourage the authors to try to shed some light on the channels of the OMTs' transmission mechanism by answering some of the following questions: Why is the ten-year yield changing significantly following the OMT announcements if government bond purchases would be concentrated in the one- to three-year maturity sector? Then, why not consider more granular maturities and see if there is a pivotal point at around the three-year maturity threshold? Why do Italy and Spain react differently from Germany and France? Why do stock prices increase significantly in both distressed and core countries following OMT announcements (Krishnamurthy, Nagel, and Vissing-Jorgensen 2015), but the macro effect is much

larger in distressed countries? And finally, is it possible to learn something about the effect of sterilization relative to QE operations?

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