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Price effects of sovereign debt auctions in the euro-zone: The role of the crisis ☆

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ABSTRACT

We show that new public debt issues cause an auction cycle for Italian secondary-market debt, but not for German debt. The cycle is mainly observed for the crisis period since mid-2007 and is larger when the crisis, as measured by yield volatility and CDS spreads of primary dealers, is more intense. Volatility seems to be the main driving factor. The cycle is also present in secondary-market series with maturities close to the auctioned series. Our findings are consistent with the theory of primary dealers' limited risk-bearing capacity. There is also weak evidence of spill-overs from foreign auctions to domestic markets.

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1. Introduction

Auctions are important events in the treasury bond market. As their timing and size are typically known several days in advance, in an efficient market one would expect no predictable bond price or yield movements around auctions.[3] Nevertheless, recent empirical research documents the existence of an 'auction cycle' in the U.S. treasury bond market, in which bond yields show an inverted V-shaped pattern around the auction dates.[4] That is, bond yields rise in the run-up to the auction and fall back to their original level after the auction.

In this paper, we offer new evidence on the existence of an auction cycle in secondary markets for public debt and explore specifically the impact of the economic and financial crisis on the magnitude of the auction cycle. We focus on two countries, Germany and Italy, with large economies and substantial amounts of public debt outstanding.[5] Hence, these countries have public debt markets that are among the most liquid and active of the euro-zone. However, they have been affected in substantially different ways by the crisis, with German yields falling to unprecedentedly low levels and Italian yields rising to dangerously high levels. Moreover, the two countries generally feature different auctioning mechanisms and auctioning policies. We compare the auction cycle for the two countries during periods of different intensity of the crisis and find that the crisis has a strong effect on the Italian auction cycle, but essentially no effect on the German auction cycle.[6]

We focus on a particular theoretical explanation for the existence of the auction cycle, namely the inventory management operations of the primary dealers. This theory has a number of testable predictions specifically related to the crisis. A first prediction is that if the crisis intensifies as evidenced by higher market volatility, primary dealers will charge higher markups and we expect the auction cycle to be larger. A second prediction is that the auction cycle also becomes larger if, as a result of the crisis becoming more intense, the risk-bearing capacity of the primary dealers shrinks. Since primary dealers make the market in bonds of various maturities, a third prediction of the theory is that an auction also puts pressure on the yields of bonds with maturities close to the auctioned maturity.

Our results are strongly in line with these predictions. Secondary-market yields on Italian public debt increase in anticipation of a new debt auction and decrease after the auction, while there is little evidence of such an auction cycle for German public debt. Importantly, this difference in the behaviour of Italian and German secondary-market yields is only present between in the period of the crisis since mid-2007, which is in line with the strong adverse tensions in the Italian debt markets during the crisis, while no such tensions were observed for the German debt markets. We provide further testing of the crisis-related predictions of the theory by linking the size of the auction cycle to the yield volatility and the risk-bearing capacity of the primary dealers, as captured by an index of CDS spreads, in the relevant market. While for Germany we are unable to detect any link between an auction cycle and any of the two measures, for Italy we do find that an increase in market volatility or a reduction in risk-bearing capacity has a strong positive effect on the size of the auction cycle. While the Italian auction cycle ranges over an average of 13–17 basis points since mid-2007, depending on the maturity of the issued debt, there are moments when the auction cycle is far larger with estimated peaks of up to 80–130 basis points around the end of 2011.

Alternative explanations of predictable price patterns around auctions have been put forward, such as the on/off-the-run effect, price effects of repo specialness and supply effects (see Section 2). All these theories predict price effects in anticipation of the auction, but little or no effect after the auction. Instead, we do find predictable patterns after auctions. We also find that the secondary-market behaviour of series for which there is *no* auction, but with a maturity close to that of the auctioned series, is very similar to the secondary-market behaviour of the auctioned series. This particular

[3] Of course, the announcement of the auction outcome may move the market in so far as it is unexpected, see Fleming and Remolona (1997).

[4] See Fleming and Rosenberg (2007) and Lou et al. (2013).

[5] At the end of December 2012 the total Italian public debt was €1990 billion (of which €1640 billion of outstanding bonds), while the German public debt was €1139 billion.

[6] However, German public debt markets are affected by the crisis in other ways, in particular by flight-to-safety effects (e.g., see De Santis, 2014).