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Contents lists available at ScienceDirect

Journal of International Money and Finance

journal homepage: www.elsevier.com/locate/jimf



The side effects of quantitative easing: Evidence from the UK bond market



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ARTICLE INFO

Article history:

Available online 26 November 2014

JEL:

G12

G14

E43

E44

E52

Keywords:

Quantitative easing

Gilts

UK bonds

Price efficiency

Bond investors

ABSTRACT

We examine the returns to UK government bonds before, during and between the phases of quantitative easing to identify the side effects for the market itself. We show that the onset of QE led to a sustained reduction in the costs of trading and removed some return regularities. However, controlling for a wide range of market activity, including issuance and QE announcements, we find evidence that investors could have earned excess returns after costs by trading in response to the purchase auction calendar. Drawing on economic theory, we explore the implications of these findings for both the efficiency of the market and the costs of government debt management in both the short and long run.

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1. Introduction

The UK government bond market (the gilt-edged bond market, or gilts) has been the main financial market within which the Bank of England's Monetary Policy Committee (MPC) has undertaken its programme of asset purchases, funded by central bank money creation, known as Quantitative Easing (QE). By the end of the most recent phase of QE in March 2013, the Bank of England had completed £330 billion of purchases of gilts, amounting to just over one-third of the total nominal stock outstanding.

Existing research on the effects of the QE programme in the UK has focussed either directly on the impact on various macroeconomic aggregates, or indirectly on the economic effects by examining the

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implications for the economy of certain bond and other financial market effects. The aim of this paper is to examine whether there are side effects, beneficial or detrimental, for the bond market itself of it being the prime vehicle for the asset purchase programme. While the potential for the existence of side effects of the asset purchases has been acknowledged by policy-makers, for example.

“The MPC did not explicitly use these purchases to signal future intentions, Nor were its actions focussed on improving the functioning of gilt markets where liquidity premia, even in stressed times, were considered to be small.” (Joyce et al., 2011)

there has been no direct attempt to identify whether such effects were experienced during the UK QE programme.

This research question is important because of the other key function of the gilt market; it is the main debt instrument used to fund the UK government's spending deficit. The stated aim of the UK Treasury's debt management policy objective is:

“to minimise over the long term, the costs of meeting the Government's financing needs, taking into account risk, whilst ensuring that debt management policy is consistent with the aims of monetary policy”. (UK Debt Management Office, 2013).

If QE affects the market in ways that could also reduce the cost of debt issuance, these would be clear beneficial side effects of QE. By contrast, if QE adds to the costs of debt issuance then this potentially compounds the economic woes that QE is attempting to fix. We are particularly motivated to understand such side effects because of the separation of policy responsibilities between the UK Treasury and the Bank of England. As the Bank of England has operational independence in the conduct of monetary policy, the Treasury has no choice but to accept the consequences of QE activity for the costs of debt issuance. The Treasury may feel further constrained in that, in order not to damage the objectives and the credibility of the Bank's QE policy, it may choose not to undertake any mitigating activity within its debt issuance programme. Our study, therefore, seeks to identify whether there is evidence that QE may have put any pressure on the costs of debt issuance.

The approach that will be taken to identify the side effects of QE is to examine the behaviour of the returns to gilt investment and the costs of trading for gilt investors in the periods of QE and compare these to the situation before and between phases of QE. If the (secondary) gilt market is a more attractive investment prospect as a result of QE then this should feed through to a lowering of the costs in the primary gilt market. By contrast, if QE activity creates or maintains pricing anomalies this could discourage investors and raise issuance costs. Thus, a key objective of our study is to assess whether QE led to beneficial side effects for either the investors in or issuers of gilts.

In meeting this objective, this study makes a number of contributions to our understanding of the effects of QE and of the functioning of the gilts market. While other studies have considered the immediate market reactions to QE activity, this study examines the behaviour of gilt returns and transactions costs over the fullness of the recent QE and non-QE phases. In addition, this paper is the first paper to analyse all three of the QE phases undertaken so far in the UK permitting comparisons to be drawn across the entirety of the QE exercise. Specifically, we partition our analysis into four sub-samples, a period prior to QE, the first phase of QE (QE1), the period between the end of QE1 and the start of the second phase, and the period of time since the start of the second phase (QE2) until two months after the end of the third phase (QE3).

We first examine the time series behaviour of gilt returns in each sub-sample to determine whether QE activity was generating any return behaviour that is indicative of market inefficiencies, and whether this could be associated with the phases of QE. We find that the QE1 period was characterized by the disappearance of significant first-order autocorrelation in returns, indicative of an improvement in pricing efficiency. By contrast, we find that in the periods following QE1 and including QE2 and QE3, the market displayed significant negative second and third-order correlation. However, simple market timing trading rules designed to exploit this autocorrelation could not generate profits in excess of transactions costs measured by the bid-ask spread, giving no reason to doubt the continued efficiency of the market. This result is further strengthened by the fact that bid-ask spreads themselves were reduced to around one-half of their pre-QE levels with the onset of the asset purchase programme and have remained at these lower levels in the more recent sub-samples.

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