

Scarcity and Spotlight Effects on the Liquidity and Yield Term Structures: Quantitative Easing in Japan

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We investigate the determinants of the term structures of bond yield and market liquidity in the case of the Quantitative Easing (QE) programs implemented by the Bank of Japan (BoJ) in the second largest sovereign bond market in the world. We distinguish between two opposing effects of QE on the liquidity of Japanese Government Bonds (JGBs): the "scarcity effect," which is *gradually* manifested as a negative impact on liquidity, due to the shrinkage in the available supply of bonds in the market; and the "spotlight effect," which induces an *immediate* improvement in liquidity, arising from the attention focused on individual bonds selected by an aggressive purchaser (the central bank). Since the Large Scale Asset Purchase (LSAP) program involves the repeated purchase of significant amounts of individual securities that experienced both effects, it is important to disentangle the two effects from each other to assess this time-varying impact. In the case of the BoJ's LSAP programs between 2011 and 2016, we find that government bonds show an improvement in liquidity through the spotlight effect, but also experience a deterioration in liquidity through the scarcity effect. For the yield changes, however, both the spotlight and scarcity effects work in the *same* direction (i.e, they raise bond prices and reduce yields). Illiquidity caused by scarcity amplifies the yield decline rather than adding to the illiquidity premium. This means that the prices of the bonds rise by reflecting only the strong demand from the QE, despite the deterioration in liquidity. Our results suggest, therefore, that an aggressive QE program can eventually weaken the efficiency of pricing, and leave significant negative side-effects in the sovereign bond market.

JEL classification: C54, E43, E52, E58, G12, G14

Keywords: Sovereign bonds, quantitative easing, market liquidity, scarcity, spotlight