Yield Elasticities of JGB Demands[*]

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Daisuke Miyakawa[**]
Shuji Watanabe[†]

Abstract

Characterizing the system of demand and supply of Japanese government bonds (JGBs) helps us to understand the reaction of the yield curve to various shocks including the large intervention of Bank of Japan (BOJ) as well as traditional monetary policy. Toward this end, we estimate the simultaneous equation system consisting of JGB demand and supply functions by using monthly-frequency data of flow transaction volume and yield associated with newly issued JGBs as well as the records of BOJ's interventions over the periods from July 2001 to March 2016. The estimated equation system, for which we allow structural breaks in its parameters, suggests, first, that the positive elasticity of JGB demand in a specific tenor with respect to the yield in the same tenor (i.e., own-yield elasticity of demand) is smaller for longer tenor, which suggests the preferred habitat tendency is stronger for longer bonds. Second, while the elasticity of JGB demand in a specific tenor with respect to the yields in the other tenors (i.e., cross-yield elasticity of demand) is negative in most cases, we find the positive cross-yield elasticity of demand for some cases. This implies that the bonds in different tenors are basically substitutes but can be complements. Third, the own- and cross-yield elasticities of JGB demands over tenors have been largely changed. Own-yield elasticity and cross-yield elasticity have become larger (i.e., positive with larger absolute value) and smaller (i.e., negative with larger absolute value) over time, respectively. Our simulation shows that the equilibrium price impact of external demand/supply shocks such as BOJ's intervention has been significantly weakened over time, which suggests the weaker preferred habitat phenomenon.

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[**] Associate Professor, Hitotsubashi University Business School (HUB). 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo, 101-8439 Japan. E-mail: dmiyakawa@hub.hit-u.ac.jp.
[†] Professor, College of Economics, Nihon University. 1-3-2 Misakicho, Chiyoda-ku, Tokyo, 101-8360 Japan. E-mail: watanabe.shuji@nihon-u.ac.jp.