[Abstract] This paper constructs and documents a dataset of the maturity structure of the Japanese government bonds from the issue level for fiscal years 1965–2019. Using the maturity structure data at the end of fiscal year, the bond supply factor is extracted using a principal component analysis, and a term structure model of Greenwood and Vayanos (2014) is structurally estimated. The estimated results confirm their key findings, provide a debt maturity equation in the fiscal year cycle, and show that two yield factors (the bond supply factor and the short term interest rate) can account for annual-frequency variations in Japanese bond yield. The supply factor also explains the continued decline in the long term interest rate at a zero lower bound environment for the last two decades.