Discussion:
The Demand for Government Debt

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Summary

1. This paper documents how sector-level holdings of Treasuries shift in response to changes in outstanding government debt
2. It uses the demand system approach to estimate how each sector's holdings change in response to changes in government bond yields
3. These estimates are used to make an important point: The effect of QE/QT depends on investor composition, because this composition determines the elasticity of the aggregate demand for Treasuries

- This is a powerful result, but can policy makers and implementers rely on this framework and estimation approach?

Broad Comments

- In analyzing QE/QT, do benefits of the demand system approach outweigh its costs?
  - Certainly for the contour of the effects but not necessarily for quantifying magnitudes
- How would the consideration of investors' expectations affect the analysis?
  - It affects the validity of the entire approach, including IV, choices of sub-periods, omitted variable issues
- Going forward, should we think about asset supply shocks as a more promising IV (e.g., Jones, 2024)?
- These comments apply to the demand system approach when used to study central bank asset purchases, not specific to this study

Why a demand system approach to QE/QT

- Usually impact of QE/QT is measured by asset price sensitivity to quantity shocks:

$$\alpha_t = \frac{dP_t/P_t}{dQ_t/Q_t}$$

- Powerful IVs for Q (e.g., D'Amico and King, 2013; Vissing-Jorgensen, 2021) and maturity-level estimates
- But α is the weighted average of sector-level price elasticities

$$\alpha = \sum_s w_s \alpha_s \tag{1}$$

- There are no sector-level prices, but there are sector-level holdings!!!

Benefits of demand system approach for QE/QT

- Hence, to estimate sector-level elasticities, instead of estimating $\alpha_t = \frac{dP_t/P_t}{dQ_t/Q_t}$, use demand system approach to estimate

$$\beta_t^s = \frac{dQ_t^s/Q_t^s}{dP_t/P_t}$$

- Then use the equilibrium price condition, $\Delta P = \Delta Q/\beta$, to derive impact on prices, where $\beta = \sum_s w_s \beta_s$

- Clearly, estimates of sector-level weight (w_s) and sector-level elasticities (β^s) can improve our understanding of QE/QT
- QE/QT have larger price effects when asset demand is less elastic
- If investor composition is tilted toward inelastic investors, price effects will be larger

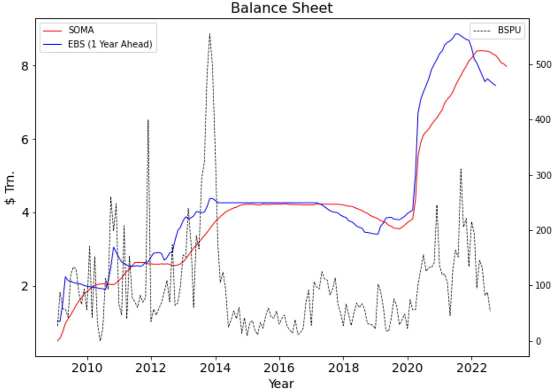
Costs of demand system approach for QE/QT

- However, it is very hard to find valid IV for P (Prices or Yields)
- Therefore, it is very hard to identify β^s
- Why? Because latent demand is function of sector-level beliefs about returns and risk, so need to find a variable related to P but exogenous to each sector's beliefs
- This implies finding a variable related to P but orthogonal to beliefs about expected growth, inflation, and short rate, which all determine beliefs about returns...........it seems an heroic task

Expectations and Communications about QE/QT

- In this framework, communications about asset purchases do not matter, as nothing is forward looking in the baseline specification
- But empirically we know that QE/QT announcements matter a lot, while actual purchases do not matter much
- At announcement, in the baseline specification, nothing happens; only when purchases take place, holdings change, and prices adjust to clear the market
- But in reality, prices change well in advance of actual holdings
- So, there must be the implicit assumption that the difference in time between announcement and implementation does not matter
- Is this time difference relevant?

Investor Expectations about Fed's Balance Sheet (EBS)



- Expected size of Fed's balance sheet tends to change months before the actual size and at a faster rate
- Therefore, prices change months in advance of actual holdings

Expectations matter

- Investors maximize $E[qR + (1-q)r] - aVar(qR)]$
- Since $q = [E(R) - r]/aVar(R)$ and $R = P_{t+1}/P_t$, a linear approximation implies

$$q \approx \beta_0 + \beta_1 E(P_{t+1}) + \beta_2 P_t + \beta_3 r_t + \beta_4 a + \beta_5 var[R_t]$$

- This implies that there are key omitted variables in the baseline specification; identification focuses on β_2 but what about β_1
- These omitted variables matter for the validity of the IV, see β_3, and the choice of X, i.e., the characteristics to control for
- I think all those X need to be forward looking

To conclude

- This study brought to light an important result that needs further investigation to quantify its relevance
- This is because the demand system approach is problematic when applied to settings in which expectations matter a lot
- This is precisely the case of monetary policy, which relies heavily on shaping expectations through communication