

HOUSE OF
FINANCE



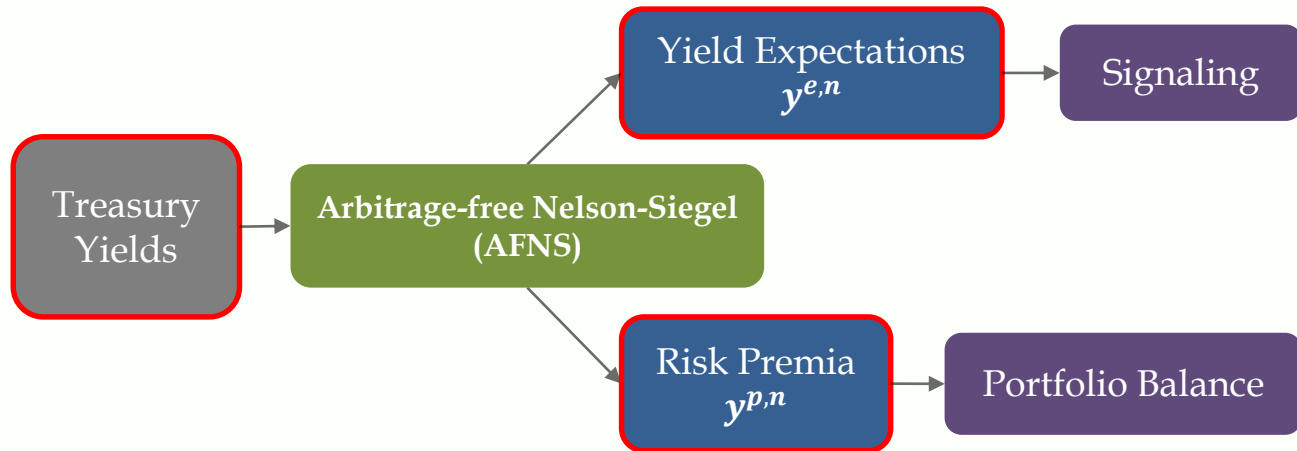
Signaling and Portfolio Balance Effects of QE Announcements on China's Yield Curve

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- ▶ Goal: study the spillover effects of QE announcements on Chinese Treasury yields. (*U.S. Fed, U.K. BoE, Eurozone ECB, and Japan BoJ*)



- ▶ Question: how do QE announcements affect changes in Chinese *Treasury yields, yield expectations* and *risk premia*?

- ▶ Event study (model-free)
- ▶ Regression analysis (event dummies)

- ▶ U.S. QE announcements:
 - ▶ early stage ones affected 10-year Treasury yields in China and U.S.
 - ▶ changes in $y^{p,n} >$ changes in $y^{e,n}$: portfolio balance $>$ signaling
 - ▶ stronger effects on shorter term maturities
- ▶ U.K. and Japan QE announcements:
 - ▶ early stage impact on Chinese 10-year Treasury yields
 - ▶ 3-month yields mostly affected by PBoC's open market operations
- ▶ Eurozone QE announcements:
 - ▶ No significant response of Chinese yields

- ▶ U.S. QE announcements:
 - ▶ portfolio balance > signaling
 - ▶ stronger effects on shorter term maturities
 - ▶ both D_t^{US} and D_{t-1}^{US} affect *Treasury yields*, $y^{p,n}$ and $y^{e,n}$ in China
 - ▶ only $D_{-10Y_t}^{US}$ affects *Treasury yields*, $y^{p,n}$ and $y^{e,n}$ in China
- ▶ U.K. QE announcements:
 - ▶ similar yet more significant results (stronger evidence)
 - ▶ smaller coefficients (less impact)
- ▶ Eurozone and Japan QE announcements:
 - ▶ No significant response of Chinese yields

- ▶ U.S. and U.K. QE impact on domestic markets:
 - ▶ e.g., Krishnamurthy and Vissing-Jorgensen (2011), Joyce *et al.* (2011), Wright (2012), Christensen and Rudebusch (2012), Bauer and Rudebusch (2014), Urbschat and Watzka (2017), Gagnon *et al.* (2019)
 - ▶ e.g., Breedon, Chadha and Waters (2012), Lyonnet and Werner (2012), Pesaran and Smith (2016)
- ▶ U.S. QE spillovers on international (EMEs) asset prices:
 - ▶ e.g., Hausman and Wongswan (2011), Ahmed and Zlate (2014), Bauer and Neely (2014), Chen *et al.* (2014), Neely (2014), Bowman *et al.* (2015)
 - ▶ e.g., Morgan (2011), Fratzscher, Lo Duca and Straub (2012), Lavigne, Sarker and Vasishtha (2014)

Little is known about China...

- ▶ Novel evidence of QE effects on Chinese Treasury yields

- ▶ Why is it interesting/ worthwhile to study the QE effects on China?
 - ▶ Firewall due to strict capital control that deters capital flows
 - ▶ Large economic capacity and better economic performance
 - ▶ Less vulnerable to external shocks
 - ▶ Second biggest economy (GDP)
 - ▶ QE from develop countries may impact monetary policies of PBoC

▶ Why Chinese Treasury bond market?

1. Bond market capitalization

- ▶ Fixed income market cap > equity market cap
- ▶ Expected to quadruple by 2025

2. Interbank liberalization to foreign institutional investors

- ▶ Unfamiliarity → safer + more liquid → an increase in demand of Treasury bonds with short-term maturities
- ▶ In addition to PBoC's open market operations, drastic decline in short-term Treasury bond yields may partially be caused by interbank liberalization policies
- ▶ QE effects (immediate) vs. liberalization effects (less immediate)

- ▶ Explain the choice of 10-year Treasury yield change, $D_{10Y_t^j}$, as a measure of Dum_t^j , but not other maturities [p.16]
- ▶ Add **changes in bond supply** as a control variable [p.16]
 - ▶ Yields are determined from equilibrium prices
- ▶ Add **VIX** to control for global market condition [p.16]
- ▶ Explain how zero-coupon equivalent yield are computed [p.17]
 - ▶ Extremely low trading frequency may cause large estimation errors
- ▶ Separate crucial U.S. QE announcements from less crucial ones and redo the event regression to see if significance levels increase [p.26]

Thank you!