A Portfolio Model of Quantitative Easing by Jens Christensen and Signe Krogstrup

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Main Idea:

- Response to the financial crisis: Central bank conducted large scale asset purchases (QE).
  Objective: long-term interest rates $\downarrow$ - However, how?

- Christensen and Krogstrup (CK) look at two channels:

  supply-induced portfolio channel: central bank buys long-term bonds $\rightarrow$ availability of bonds $\downarrow$ $\rightarrow$ bond prices $\uparrow$ $\rightarrow$ return $\downarrow$

  reserve-induced portfolio channel: central bank buys long-term bonds from non-bank financial institutions (NB) $\rightarrow$ bank deposits $\uparrow$ $\rightarrow$ bank reserves $\uparrow$ $\rightarrow$ portfolio adjustment, banks buy bonds $\rightarrow$ bond prices $\uparrow$ $\rightarrow$ return $\downarrow$

$$\frac{dP_L}{dL_{CB}} = \frac{-1}{\frac{\partial f_B}{\partial P_L} + \frac{\partial f_{NB}}{\partial P_L} - P_L \frac{\partial f_{NB}}{\partial P_L} \frac{\partial f_B}{\partial F_B}} > 0$$

I very much liked reading the paper

- highly topical (bank behaviour in response to a huge, autonomous increase in reserves triggered by QE)

- very interesting, good starting point for more related discussion

- very nicely written

4 comments/question ...

1. Preferences of the NBFS and the BS?

- There are three agents: Central Bank (CB), Nonbank Financial Sector (NBFS), Banking Sector (BS)
- CK: no microfoundations, standard preferences
- however, some more information would be nice:

  BS: hold reserves and bonds - why? Should be important for your result.
  CK: Reserves are more liquid but no interest - why do banks hold reserves? Liquidity risk, f.e. is assumed away.

  NBFS: hold deposits and bonds - why? Should be important for your result.

2. Function of Equity

- CB, NBFS, BS: all agents do only hold equity to buffer changes in bond prices
- Suggestion: mention this at the very beginning, skip equity from bond demand functions, so that: $f_{NB}^j(P_L)$, $f_B^i(P_L, D_B(P_L))$

3. Superskripts j and i

- Why are these indexes used? One starts to think how do banks (non-banks) differ, just in order to learn that they do not...
- Suggestion: mention at the very beginning that all banks (non-banks) are identical and skip the indexes

4. Consolidated budget constraint

CK: Consolidated Budget Constraint, equation 24:

$$P_L \cdot (L - L_{CB}) = P_L \cdot (L_B + L_N B)$$

Total Differentiation:

$$dP_L \cdot (L - L_{CB}) + P_L \cdot (dL - dL_{CB}) = dP_L \cdot (L_B + L_N B) + P_L \cdot (dL_B + dL_N B)$$

(Nevertheless) you end up with the key equation (28):

$$\frac{dP_L}{dL_{CB}} = \frac{-1}{\frac{\partial f_B}{\partial P_L} + \frac{\partial f_{NB}}{\partial P_L} - P_L \frac{\partial f_{NB}}{\partial P_L} \frac{\partial f_B}{\partial F_B}} > 0$$

Comment: It is not the consolidated budget constraint, but that is:

$$P_L \cdot (L - L_{CB}) = E_{CB} - P_L \cdot (L_B + L_{NB}) + E_B + E_{NB}$$

Why not saying instead "market clearing condition" requires:

$$L - L_{CB} = L_B + L_{NB} \quad \text{totally diff.} \quad \rightarrow \quad (28)$$

Thank you for

a nice, interesting, highly topical paper

and for your attention!