Discussion of "Can QE be market neutral? Monetary policy with many firms & securities" by Papoutsi, Piazzesi and Schneider

Foundations of Monetary Policy, September 1-2, 2022

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Overview

- Key argument: asset purchases proportional to market holdings are "non-neutral" (i.e., they alter relative returns)

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My discussion:

1. How portfolio costs break Wallace irrelevance proposition
2. Differential effects on returns
3. Comments on portfolio costs

Households

$$\max_{c,k,d} u(c)$$

subject to

$$\begin{aligned} k + d &\leq \omega \\ c + h(k) &\leq R^k k + Rd + T_2 \end{aligned}$$

Firms

$$\max_{K} zK - R^k K$$

Government

$$\begin{aligned} d &= k_g \\ T_2 &= R^k k^g - h^g(k^g) - R^d d \end{aligned}$$

Resource constraints:

$$\begin{aligned} \omega &= k + k^g \\ c &= z\omega - h(k^g) - h^g(\omega - k^g) \end{aligned}$$

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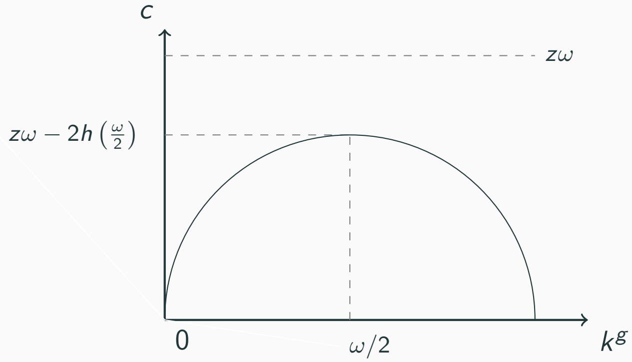
- If h is linear: k^g irrelevant
- If h is concave: optimal policy, either $k^{g*} = 0$ or $k^* = 0$
- If h is convex: optimal policy, $k^{g*} = k$

Illustration: Convex case



Households

$$\max_{c,k_a,k_b,d} u(c)$$

subject to

$$k_a + k_b + d \leq \omega$$

$$c + h(k_a, k_b, d) \leq R_a^k k_a + R_b^k k_b + T_2 - dR^d$$

Intermediate goods firms

$$\max_{K_i} p_i z_i K_i - R_i^k K_i, \quad \text{for } i = a, b$$

Final good firms

$$\max_{y_a, y_b, c} y - p_a y_a - p_b y_b$$

$$y = [y_a^{1-1/\eta} + y_b^{1-1/\eta}]^{\frac{\eta}{\eta-1}}$$

Government

$$d = k_a^g + k_b^g$$

$$T_2 + h^g(k_a^g, k_b^g) = R_a^k k_a^g + R_b^k k_b^g - R^d d$$

Resource constraints:

$$\omega = k_a^g + k_b^g + k_a + k_b,$$

$$y_a = z_a(k_a + k_a^g),$$

$$y_b = z_b(k_b + k_b^g)$$

$$c = [y_a^{1-1/\eta} + y_b^{1-1/\eta}]^{\frac{\eta}{\eta-1}} - h(k_a, k_b, d) - h^g(k_a^g, k_b^g)$$

- Consider an eqm. without govt. intervention with $\tilde{k}_a, \tilde{k}_b$

★ Key result: A policy $k_a^g = \delta \tilde{k}_a, k_b^g = \delta \tilde{k}_b$ changes $R_a^k - R_b^k$

$\Rightarrow$ QE is "non-neutral." Not an obvious result..

QE affects returns differently if it changes relative prices

$$R_a^k = p_a z_a, \quad R_b^k = p_b z_b, \quad \frac{p_a}{p_b} = \left(\frac{y_b}{y_a}\right)^{\frac{1}{\eta}}$$

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- Why is QE non-neutral?
- Key mechanism is interaction between d and k_a, k_b
  - "Neutrality" if separable, $h = h^k(k_a, k_b) + h^d(d)$, and h^k is HD1

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- In general, sign and size of effects should depend on cross-partials
  - Interesting to test this empirically. Also role of elasticity

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- **Liquidity costs/OTC frictions?**
- **Limited commitment/leverage constraints?**

  It would be interesting to model explicitly frictions and show equivalence results

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Related question is when/whether we should expect portfolio costs $h(\cdot)$ to be a/symmetric between banks, households, and govt.?

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- Literature moving towards tackling central bank optimal portfolio management. Exciting agenda.
  - Bhandari et al. in this conference
  - See Amador et al. for open economy framework: at ZLB tradeoff between minimizing government losses and altering risk premia