International Portfolios with Supply, Demand and Redistributive Shocks

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1’ Summary

- Very interesting paper.

- Three stylized facts of international portfolios for industrial economies:

  a. Portfolios are biased toward local equity.

  b. They are long in foreign currency, short in domestic currency.

  c. Valuation effects are such that exchange rate depreciation induces a positive transfer of wealth.

- How do we construct an international portfolio model that jointly reproduces these facts?

- CKM’s answer: home bias in consumption, a realistic menu of assets (bonds and equities), and multiple shocks (productivity, preference, income distribution).

  – In the process of obtaining this result, CKM illustrate a number of properties of international portfolios under complete and incomplete markets.

    · Market (in)completeness depends on the number of shocks relative to the number of assets.

Multiple *Structural* Shocks?

- The nature and number of exogenous shocks are crucial for CKM's results.

- I will focus on the interpretation of two of these shocks (preference and income distribution) and its potential implications for further research in this area.

Income Distribution Shocks

- CKM assume that a portion $k \in (0,1)$ of each country's endowment is distributed to (domestic and foreign) equity holders, while the fraction $1-k$ is distributed to domestic households as "labor" income.

- The fraction k is subject to shocks.

- But do we really want to treat income distribution as exogenous and its fluctuations as structural shocks?

- In a model with monopolistic competition, fixed number of producers, labor as the only factor of production, and flexible prices, income distribution is determined by the elasticity of substitution between products ($\theta > 1$):

  labor income $= w_t L_t = \left(\frac{\theta-1}{\theta}\right) Y_t = \frac{1}{\mu} Y_t,$ dividend income $= d_t = \frac{1}{\theta} Y_t = \left(1 - \frac{1}{\mu}\right) Y_t,$

  where $\mu > 1$ is the markup of price over marginal cost.

- Changes in income distribution would be induced by shocks to θ.

Income Distribution Shocks, Continued

- But I am not sure we want to go in that direction.

- Price stickiness is a natural alternative.

- With quadratic costs of price adjustment (Rotemberg, 1982):

$$d_t = \left(1 - \frac{1}{\mu_t} - \frac{\kappa}{2}\pi_t^2\right) Y_t,$$

  where π_t is product price inflation, $\kappa \geq 0$ measures price rigidity, and

$$\mu_t = \frac{\theta}{(\theta - 1)\left(1 - \frac{\kappa}{2}\pi_t^2\right) + \kappa\left\{(1 + \pi_t)\,\pi_t - \beta E_t\left[\frac{Y_{t+1}}{Y_t}\,(1 + \pi_{t+1})\,\pi_{t+1}\right]\right\}}.$$

- In log-linear form:

$$\hat{\mu}_t = -\frac{\kappa}{\theta - 1}\left(\hat{\pi}_t - \beta \hat{E}_t \pi_{t+1}\right). \quad \Rightarrow \quad \text{New Keynesian Phillips Curve}$$

- Movements in π_t induce movements in the markup and affect the distribution of income.

Income Distribution Shocks, Continued

- With sticky prices, monetary policy shocks will induce fluctuations in dividend versus labor income.
- With endogenous monetary policy, the same will be true of shocks – such as productivity – that induce fluctuations in the variables to which the central bank responds.
- Don’t like sticky prices?
- There can be sources of cyclical markup variation under flexible prices.

Income Distribution Shocks and Producer Entry

- Suppose flexible prices, non-C.E.S. preferences of translog form, and allow for variation in the number of products (let's start thinking about "new product shocks"):
  - The elasticity of substitution between products increases with the number of products available to consumers: $1 + \sigma N_t$, where $\sigma > 0$, and $N_t \equiv N_{D,t} + N^*_{X,t}$ is the number of products available (domestically produced, $N_{D,t}$, and imported, $N^*_{X,t}$).
  - Without trade costs or other sources of PPP deviations, total dividend income generated by domestic producers is:

$$N_{D,t} d_t = \left(1 - \frac{1}{\mu_t}\right) C^W_t, \quad \mu_t = 1 + \frac{1}{\sigma N_t},$$

  - where C^W_t is world consumption demand.

- Changes in the number of available products induce fluctuations in the markup and affect income distribution.
  - Bilbiie, Ghironi, and Melitz (2005): Productivity-driven fluctuations in N_t (subject to sunk entry costs) reproduce the cyclicality of U.S. markups remarkably well.

Income Distribution Shocks and Producer Entry, Continued

- Translog preferences can be combined with sticky prices:

$$\hat{\mu}_t = -\frac{\kappa}{\theta - 1}\left[\hat{\pi}_t - \beta\left(1-\delta\right)\hat{E}_t\pi_{t+1}\right] - \frac{1}{\theta}\hat{N}_t,$$

  where σ was chosen so that $\theta = 1 + \sigma N$, and $\delta \in (0, 1)$ is an exogenous rate of firm "death."

- In sum, if we dig a little deeper, productivity shocks can be a likely source of fluctuations in income distribution (abstracting from monetary shocks).

iPod Shocks

- CKM consider also shocks that shift demand between home and foreign goods in the consumption basket.
- Their preferred interpretation of these shocks is “iPod” shocks associated to new product introduction.
- I am not sure that is the best way to think of these shocks.
- New product introduction is an endogenous response to economic conditions – including productivity developments.
- In turn, as shown above, new product introduction can affect income distribution.
- Empirical/quantitative issue: The endogeneity of income distribution and product creation poses questions for measurement/calibration.

New Products and the Terms of Trade

- Additionally, new product introduction can affect terms of trade movements and the associated risk sharing:
  - In standard models with fixed number of producers, a productivity improvement causes the terms of trade to deteriorate.
  - But endogenous producer entry in a more attractive business environment can cause the terms of trade to improve following positive productivity shocks.
    - Consistent with evidence in Debaere and Lee (2004) and Corsetti, Dedola, and Leduc (2006).
- Once we think deeper about producer entry, this effect on the terms of trade will interact with the properties of different asset portfolios.

Conclusion

- This is a very nice paper, from which I learned a lot.
- How to model the stylized facts of international portfolios?
- Bonds, equities, and (important) enough shocks to ensure market incompleteness.
- However, it seems to me that two of the three shocks considered (income distribution and iPod) can be explained in terms of the third (productivity) if we think about them more structurally.
- In turn, this will have implications for the measurement of shocks, the risk sharing properties of different asset menus, and their ability to replicate stylized facts.
  - Market incompleteness may be motivated by causes other than the number of shocks relative to assets (financial and/or informational frictions).
- I see this as a very interesting area for future work in models that incorporate realistic asset menus (including nominal bonds) and make it possible to explore international portfolio determination in conjunction with a role for policy (Benigno, 2006; Devereux and Sutherland, 2006).