DISCUSSION OF “INTERNATIONAL CREDIT FLOWS, PECUNIARY EXTERNALITIES, AND CAPITAL CONTROLS”

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OVERVIEW (1)

**IMPRESSIONIVE AND WELL-CRAFTED MODEL**

- A stochastic general equilibrium two-country two-goods model
- Endogenous capital/asset price; endogenous credit and two goods prices
- Capital long-lived but perfectly mobile; key state variable relative net worth distribution
OVERVIEW (2)

❖ CAPITAL STRUCTURE MATTERS; SHORT-TERM CREDIT COME AND GO

❖ Relatively poor country borrow from rich country for production
  ❖ Their specialized goods have a higher relative price!
❖ If poor country gets worse, they will borrow more
❖ But, when getting really poor, endogenous reducing lending or deleveraging
  ❖ Could lead to abrupt self-fulfilling lending cut

❖ PECUNIARY EXTERNALITY

❖ Incomplete market…
  ❖ If international equity market, first-best
  ❖ But not necessary for international debt market
❖ Capital control, i.e., no international credit, improves welfare
SYMmetric Balance SHEet WIThout DEBT

- Capital is perfectly mobile and divided in half/half
- Can be considered as half/half wealth with
- The price of Apple/Banana=1

\[ \eta = 0.5 \]

\[ \psi = 0.5 \]

<table>
<thead>
<tr>
<th>Country A(pple)</th>
<th>Country B(anana)</th>
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<tbody>
<tr>
<td>Apple production</td>
<td>Banana production</td>
</tr>
<tr>
<td>Equity/Net Worth=0.5</td>
<td>Equity/Net Worth</td>
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BALANCE SHEETS AFTER SHOCKS BUT NO BORROWING

- Say that country $A$ ($B$) experienced a negative (positive) shock so
- Say there is no borrowing allowed
- The relative price of Apple/Banana > 1

\[ \psi = 0.4 \]

\[ \eta = 0.4 \]

Country A(ple)

- Apple production
- $\eta = 0.4$
- Equity =

Country B(anana)

- Banana production
- Equity/Net Worth

$\eta = 0.4$
BALANCE SHEETS AFTER SHOCKS WITH BORROWING

- Country A would like to borrow from B, say 0.05
- So purchase 0.45 capital to produce Apple
- Generally, relative price of Apple/Banana above 1

\[ \psi = 0.45 \]

- Country A(pple)
  - Debt = 0.05
  - \( \eta = \) Equity = 0.4

- Country B(anana)
  - Debt
  - Banana production
  - Equity/Net Worth
BALANCE SHEETS AFTER SHOCKS WITH BORROWING

\[ \eta = 0.02; \]

- Leverage makes country A sensitive to
- Bad shocks say debt is 0.02 (quite high leverage already)
- Country A needs to sell its capital, affecting endogenous capital price...

[Diagram showing balance sheets for Country A(PPLE) and Country B(Anana)]

\[ \psi = 0.04 \]
INTUITIONS OF PECUNIARY EXTERNALITY

PECUNIARY EXTERNALITY

- Missing market drives wedge between agents’ marginal utilities
- When this happens, change in price transfers wealth between agents, will change welfare in the first order

HERE, MISSING MARKET IS EQUITY MARKET

- Start from half/half. After negative shocks, country A’s marginal utility of wealth is higher than country B
- If we can move wealth from wealthy country to poor country, good

BAN EXTERNAL CREDIT TO RAISE “TERMS OF TRADE HEDGE,” LET POOR COUNTRY EARN MORE

- Apple is scarce. But if quantity of apple, the price of apple
- When s>0, price effect dominates, profit, it works
- What if elasticity s=1 so total profits keep unchanged?
- Save interest expense? Return per unit of capital is higher?
ANOTHER RELATED PECUNIARY EXTERNALITY

- **HE-KONDOR (2014) STUDY ANOTHER RELATED PECUNIARY EXTERNALITY**

- **CONSIDER TWO INPUTS MODEL LIKE HERE, BUT APPLE IS MORE SCARCE**
  - Idiosyncratic skill shocks — you might be either buyers or sellers of the scarce apple
  - Even for risk neutral buyers of the relative scarce apple with high price, their marginal value of wealth is low

- **RAISING PRICE OF APPLE TRANSFER WEALTH TO SELLERS EX POST**
  - Ex ante, everyone (who can become buyer or seller) better off!

- **HOW TO RAISE PRICE OF SCARCE INPUT? BAN EX ANTE PRODUCTION OF SCARCE INPUT**
  - We show market tends to overinvest in scarce input
WHAT IS MISSING?

❖ “HOT MONEY” EPISODE IN ASIAN CRISIS
  ❖ 97~98 Asian crisis, countries first experience good shocks, stock market moves up. Some countries interest rates go up (say Thailand)
  ❖ Hot money come in chasing yields, bubbles
  ❖ In this model, countries start borrowing a lot after getting negative shocks!

❖ NOMINAL SIDE IS MISSING. THERE IS ONLY RELATIVE PRICE AND REAL EXCHANGE RATE
  ❖ Mussa (1986): exchange rate movement mostly comes from nominal side
  ❖ Monetary policy and nominal mechanisms play important roles in international credit movement

❖ DELEVERAGING, BUT NOT PANIC RUNS
  ❖ Deleveraging is due to lender’s precautionary motive, not creditor’s concern of default
  ❖ Risk-free short-term debt always
SUGGESTION

❖ COMPLETE RISK SHARING IS RULED OUT

❖ THIS MAKES IT A GOOD SETTING TO STUDY THE LOW CONSUMPTION CORRELATION PUZZLE

❖ BKK puzzle: Consumption across countries are less correlated relative to output

❖ THIS MODEL DOES PRODUCE ENDOGENOUS CONSUMPTION AND PRODUCTION CORRELATION!

\[
dW_A / W_A = -\delta t + \sigma_{AA,t} dZ_{A,t} + \sigma_{AB,t} dZ_{B,t}.
\]

❖ In log case, and production is determined by capital employed

❖ SHOCKS IN COUNTRY B AFFECTS COUNTRY A’S NET WORTH

❖ With two-shock model, correlation is a meaningful thing

❖ UNCLEAR IF RESOLVE BKK PUZZLE

❖ Production correlation is determined by \( \eta \), which is the capital share, and consumption correlation is determined by