Financial Choice in a Non-Ricardian Model of Trade
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Interesting model that introduces financial heterogeneity into a small open economy setting

Basic model assumptions:
- endogenous number of firms produce varieties of intermediate goods
- no capital flows: all adjustment through balanced trade
- all investment must be borrowed, either bank loan or bond
- bond financing requires larger fixed costs, and is therefore accessible to larger, more efficient firms

Bank- and Bond- market development policies operate on different groups of firms

Therefore, they can have dramatically different results
- implications at macro level: Exports and RER
Model

- Representative consumer
- Financial intermediaries
  - Bank financing: lower fixed cost $f_l$ but higher variable (monitoring) costs $\Rightarrow r_l$
  - Bond financing: higher fixed cost $f_b$ and lower variable cost $(r_b)$
- Intermediate good firms Cobb-Douglas with constant markup, final good a CES aggregator
- Exporting: for a fixed cost $f_x$, access to exogenous foreign demand, subject to ad-valorem iceberg cost $\tau$
Scenario 1: Drop in fixed cost of bond issuance $f_b$

- $\downarrow \varphi_{bx}$ former most efficient bank borrowers issue bonds instead
  - Switchers have lower MC $\Rightarrow \downarrow p$ (constant markup)
- Competition increases across the board as a larger proportion of firms has access to financing with a lower MCK
  - Least productive firms drop out ($\uparrow \varphi_{ld}$)
  - Least productive bank-exporters drop out ($\uparrow \varphi_{lx}$)
- Stiffer price competition by switchers drives some bank exporters out of export $\Rightarrow$ number of exporting firms $\downarrow$, Exports $\downarrow$
- Output rises
  - though declines marginally for firms that now face more competition from switchers
- Price level declines
- Real exchange rate depreciates
- Smaller friction implies higher welfare
Scenario 2: Drop in bank monitoring cost $\mu$

- $\downarrow$ MCK for all bank borrowers (not just switchers): $\downarrow p$, $\uparrow \pi$, market share
- more firms enter production ($\downarrow \varphi_{ld}$) and exporting ($\downarrow \varphi_{lx}$)
- marginal bond-issuers switch to bank loans ($\uparrow \varphi_{bx}$)
- $\uparrow Y$: reallocation towards less productive firms
- marginal exporter is a less productive firm $\Rightarrow \uparrow$ number of exporters & $\uparrow$ Exports
- marginal Price level increase (RER appreciation)
- Smaller friction implies higher welfare
Opposing Export predictions of bond- and loan- market policies

- $\Delta f_b$ only changes MCK for switchers (from $r_l$ to $r_b$ or vice versa)
- By assumption, marginal exporter is a bank customer. Because a marginal switcher is on the loan-bond margin, it already exports
- Thus, marginal change in $f_b$ does not operate on non-exporters, and has no first-order effect on the extensive margin of trade.
- The price effect (competition) is the dominant driver of export volume changes
- $\Delta \mu \Rightarrow \Delta r_l \Rightarrow \Delta \text{MCK}$ for all bank firms, not only for switchers
- as all non-exporters use bank loans, marginal $\Delta \mu$ has first-order effect on extensive volume of trade
Gains from trade

- Balanced trade assumption $\Rightarrow \uparrow$ Exports and $\uparrow$ Imports of intermediate goods, $\uparrow C, Y$
- New switching channel: $\downarrow \tau \Rightarrow \uparrow$ available foreign demand
  - marginal bank-firms leverage this to switch to bonds
  - lower marginal cost, higher output
- Channel strongest with $\downarrow f_b$: large difference between $MCK_{bond}$ and $MCK_{bank}$ and because $f_b$ policy operates on most efficient firms
- Spill-over to domestic firms from $\uparrow$ demand for domestic inputs
  - bonds $\uparrow$, loans $\uparrow$, bonds/loans $\uparrow$
- Relative size of bond market increases with GDP (empirical match)
  - causality: trade $\Rightarrow$ bond market development
- $\downarrow f_x \Rightarrow \uparrow$ extensive margin of trade and $\uparrow w/p \Rightarrow$ pushes some bond-firms into loans. Net effect on Exports $\sim 0$
RER implications of bond- and loan- market policies

- $\downarrow \mu \rightarrow \uparrow P$
  - Bank rate drop induces influx of low-efficiency firms, each with $p > \bar{p}$
  - Bond $\rightarrow$ bank switchers charge higher prices

- $\downarrow f_b \rightarrow \downarrow P$
  - lowers marginal costs of more efficient firms $\rightarrow \downarrow P$

- $\downarrow \tau \rightarrow \uparrow P$
  - relatively more firms with lower productivities, $\uparrow P_N/P_T$
Comment: model setup

- Focus on long-run equilibrium response to policy scenarios
- Empirically, time dimension important for capital accumulation
  - savings: consumption smoothing
  - investment and capital stock as functions of anticipated changes
  - asset distributions become skewed over time due to environmental restrictions, making average values poor summary statistics for the decision making
- Here: model of capital markets without a temporal dimension, average productivity within an asset group is the summary statistic
- Implications?
  - all scenarios permanent
  - ignores stickiness of the asset distributions
  - focus on the long-run
- It would be nice to discuss these implications
Comment: sizes of experiment changes

- Magnitude changes in scenarios may need motivation
  - bond issuance fixed cost ↓ by 80% (leads to 1100% ↑ of $n_{bx}$)
  - bank monitoring cost ↓ by 67%
  - iceberg trade cost ↓ by 16%

- The first two large one-off change, too big for repeated policy?
  - Estimate elasticities to get a sense of relative importance of scenarios?
  - Estimate empirically relevant range of changes of $f_b, \mu$

- $\tau$ scenario may match post-WWII decline in iceberg trade costs
  - Jacks et al. (2008) see US gravity-implied trade costs drop around 15% since WWII (more for France, less for UK)

- Interpret model implications against 50- rather than 20-year history: doubling of bond/loans, 6% RER appreciation, 58% GDP growth (empirical regularity)
Comment: liberalization-induced efficiency decline and redistribution

- Trade liberalization typically associated with growth in openness
- Here new channel causes Exports/GDP declines by about 4.5%
  - capital market development (↑ B/L) induces decline in average efficiency
  - entry of new (least productive) exporters
- Previously unviable firms (non-exporters) emerge due to ↑ demand for domestic variety
- Redistributive effects of trade liberalization
  - Gains from trade spread across wider population (56% increase in welfare)
  - Effectively, increase in demand benefits the least efficient more
  - It would be nice to get more intuition behind this result
- Imports not consumed: at odds with most gains from trade mechanisms
  - Assumption seems crucial for aforementioned effect
Comment: size of RER responses

- Despite large changes in $f_b, \mu$, RER changes by less than 0.5%
- Even for $\Delta\tau$, RER change is 6%
- Empirically, a negligible component of RER movements
- Adjustment through distributional shifts: interesting. Empirically important?
- Unlike in the data, non-traded sector appears much smaller than traded
- Potential to discuss Balassa-Samuelson mechanism
  - trade by construction concentrated in a more efficient sector
Minor comments

- Fig 1: Openness may be better measured as Exports/GDP, not Exports
- \( r_b = \frac{r}{1-\delta} \) on p. 15 appears inconsistent with \( r_b = r + \frac{\delta \mu_b}{1-\delta} \) and \( \mu_b = 0 \) in Appendix A
- It wasn’t clear to me why exogenous death shock operates on aggregate \( L \) but not on aggregate \( K \)