Interactions between domestic and international financial markets

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Introduction

- Financing development:
  - Mobilizing domestic savings (financial reforms)
  - Mobilizing foreign savings (financial or current account liberalization)

- A key finding of recent research is that these two problems interact in somewhat unexpected and quite interesting ways

- Goal of this presentation is to use two examples to show this. Along the way we will review some (not all!) key empirical and theoretical results in the literature

QUESTION #1: Macroeconomic effects of financial (or current account) liberalization in emerging markets

- The conventional view was that liberalization would lead to
  - capital inflows
  - higher investment and growth
  - international risk sharing
  - development of domestic financial markets
  - higher welfare
- However, liberalization has led to
  - small, volatile, and procyclical net capital flows
  - unchanged or even lower investment and growth
  - higher consumption volatility
  - domestic markets which are unstable and prone to crises
  - welfare?
- See, for example,
  - Díaz-Alejandro (1985), Kaminsky, Reinhart (1999), Bekaert, Harvey, Lundblad (2005, 2006), Broner, Rigobon (2006), Henry (2007), Prasad, Rajan, Subramanian (2007), Alfaro, Kalemli-Ozcan, Volosovych (2008), Bonfiglioli (2008), Gourinchas, Jeanne (2009), Kose, Prasad, Rogoff, Wei (2009), Levchenko, Ranciere, Thoenig (2009), Obstfeld (2009), Reinhart, Rogoff (2009)

Evolution of the field

- Financial liberalization with sovereign risk
  - Eaton, Gersovitz (1981), Bulow, Rogoff (1989), Eaton, Fernández (1995), Aguiar, Gopinath (2006), Arellano (2008)
  - results qualitatively similar to RBC models

- Financial liberalization with domestic financial frictions
  - Gertler, Rogoff (1990), Boyd, Smith (1997), Matsuyama (2004, 2008), Aoki, Benigno, Kiyotaki (2006), Caballero, Farhi, Gourinchas (2008), Antras, Caballero (2009), Mendoza, Quadrini, Rios-Rull (2009)
  - microeconomic frictions are exogenous

- Financial liberalization with sovereign risk and domestic financial frictions
  - Caballero, Krishnamurthy (2001), Tirole (2003), Broner, Ventura (2011, 2012), Broner, Martin, Ventura (2010), Brutti (2012), Gennaioli, Martin, Rossi (2011),
  - interactions between domestic and international asset trade
    - can account for effects on domestic financial markets
    - important implications for policy and welfare

The assumption of non-discrimination

- Governments take many actions supporting debt and collateral (government debt, bailouts, regulation,...) which are crucial for financial markets. Can the government discriminate between nationals and foreigners?

- Non-discrimination seems quite realistic
  - episodes of default on government debts usually affect all bondholders regardless of nationality
  - bond prices do not differ by nationality of holder
  - same holds true for debts issued by firms and/or banks

- The role of secondary markets
  - borrowing is often done by selling assets that trade in secondary markets (bonds, stocks)
  - foreigners can get repaid indirectly by selling bonds to domestic residents
  - exact role of secondary markets depends on degree of commitment
  - see Broner, Martin, Ventura (2010)

- Even when borrowing is intermediated (banks, mutual funds)
  - imperfect information about nationality of clients of intermediaries
  - cannot control how intermediaries distribute losses among domestic and foreign clients
  - courts often abide by equal-treatment rules

Implications

- If institutions cannot discriminate between domestic and foreign debts:
  - temptation to default on foreigners may lead to domestic default
  - cost of domestic default may lead to repayment to foreigners

- Results:
  - If a country has a shallow domestic financial market, only a pessimistic equilibrium exists
  - If a country has an intermediate domestic financial market, both a pessimistic and an optimistic equilibrium are possible
  - If a country has deep domestic financial markets, ony the optimistic equilibrium is possible

- This can account for:
  - ambiguous effect on investment and growth
  - higher volatility
  - domestic markets unstable and prone to crises
  - effects depend on level of development, institutions, and savings

Policy implications

- Improving institutions
  - higher growth and lower volatility
  - financial liberalization makes institutions more important
- Timing of liberalization
  - some countries should wait until they are developed enough
- Capital controls
  - on inflows
    - makes the optimistic equilibrium more likely to exist
    - standard foreign overborrowing externality
  - on outflows
    - makes the pessimistic equilibrium less likely to exist
    - domestic "underlending" externality
  - but such policies assume ex-ante discrimination

More policy implications

- Financial systems
  - when poor, facilitate discrimination
    - financial system based on financial intermediaries and financial contracts that are not easily tradable
    - avoids worsening of enforcement of domestic debts
  - when rich, make discrimination difficult
    - develop standardized financial instruments and markets where stocks and bonds can be traded
    - improves enforcement of foreign debts

- Can account for change in institutional set up for emerging market borrowing?
  - Perfect discrimination more applicable to emerging markets in 1970's and 1980's:
    - governments borrowed from foreign banks using syndicated loans
    - private sector shut out from international financial markets
  - Non-discrimination more applicable to emerging markets in 1990's and 2000's:
    - governments borrow from foreigners by selling bonds
    - private sector borrows by selling bonds and stocks and through a variety of financial intermediaries

QUESTION #2: Effects on capital flows of financial reforms that relax credit constraints

- Assume savings inelastic: all effects come from the change in investment demand
- Trivial? Constrained firms expand investment demand and capital flows increase...
- But this expansion in investment by some firms crowds out investment by others
  - Higher capital stock and wages
  - Shutdown of low-productivity firms
- Does aggregate investment demand rise or fall?
  - Depends on distribution of firm productivities!!
  - Are there many marginal (i.e. low productivity) firms? Then, investment demand likely to fall
- Implications:
  - In the closed economy:
    - If reform raises investment demand: interest rate increases
    - If reform lowers investment demand: interest rate falls
  - In the open economy:
    - If reform raises investment demand: capital inflows
    - If reform lowers investment demand: capital outflows

How would financial reforms lower investment demand?

- Effect on contracting frictions on size and direction of capital flows
  - Gertler and Rogoff (1990), Boyd and Smith (1997), Caballero and Krishnamurthy (2002), Matsuyama (2004), Aoki, Benigno, Kiyotaki (2008), Mendoza, Quadrini, Rios-Rull (2006), Caballero, Farhi, and Gourinchas (2007), Buera and Shin (2011)
  - Interpretation: greater contracting frictions constrain credit and reduce capital inflows (may even lead to outflows!)

- Martin and Taddei (2012) challenge this interpretation: adverse selection vs. limited pledgeability
  - Adverse selection may reduce capital outflows (and even lead to inflows!)

- Martin and Ventura (2012) also challenges this interpretation: firm heterogeneity: productivities
  - Contracting frictions reduce capital inflows globally, i.e. *relative to frictionless economy*
  - Less severe contracting frictions do not necessarily raise inflows locally, i.e. *relative to economy with more severe frictions*

- Matsuyama (2011) also shows that severity of contracting friction has ambiguous effect on capital flows due to firm heterogeneity
  - In his model: lower severity of frictions changes mix of projects, provide incentives to undertake high-productivity projects with greater agency problems

Implications

- "... a more direct approach is to help and encourage developing countries to re-enter international capital markets in their more natural role as borrowers, rather than as lenders ... Providing assistance to developing countries in strengthening their financial institutions ... could ... increase both the willingness of those countries to accept capital inflows and the willingness of foreigners to invest there."

  - *Bernanke, 2005*

- "I will focus on a familiar issue, the problem of global current account imbalances, and will describe how financial sector reform can help narrow them ...".

  - *Rajan, 2006*

Implications

- Global imbalances
  - Large and persistent current account deficits (US and others) and surpluses (China and oil-producers)
  - Possibly equilibrium phenomenon
    - Asymmetric financial development (Caballero et al. (2008), Song et al. (2011))
    - Underdeveloped financial markets prevent capital from flowing to emerging economies
  - Policy implication: reversal of global imbalances requires financial development (Bernanke, Rajan)
  - This policy implication might be wrong: if there is a large pool of marginal low-productivity firms the opposite will happen. But this is what Hsieh and Klenow (2009) and Song et al. (2011) find!

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- Capital flows among emerging economies: "allocation puzzle"
  - Negative correlation between productivity growth and capital flows (Gourinchas and Jeanne 2009)
  - Negative correlation between growth and capital inflows (Prasad et al. 2011)
  - This apparently puzzling finding could be the natural consequence of asymmetric financial development
    - Emerging economies with financial reforms: capital outflows, and productivity/output growth
    - Emerging economies without reforms: capital inflows and productivity/output slowdown