Currency Manipulation
by Hassan, Mertens and Zhang

Discussion
by Anton Korinek
Johns Hopkins and NBER

Roadmap

I. Brief Summary of Main Arguments

- plus come comments

II. Generalization of welfare analysis to put focus on two main channels:

- manipulation of a country's terms of trade
- improvements in risk-sharing

Part I: Summary of Main Arguments

Main intuition of the paper:

- In a risk-averse world, asset returns depend on risk profile (or, more specifically, covariances)

- Stabilizing your exchange rate vis-à-vis a large country makes your currency more attractive to the "average" investor in the world market
  - translates into a lower interest rate

- Under some circumstances, this increases your welfare

Summary of Main Arguments

Main intuition of the paper:

- In a risk-averse world, asset returns depend on risk profile (or, more specifically, covariances)
  → very reasonable, although strength of effect unclear
- Stabilizing your exchange rate vis-à-vis a large country makes your currency more attractive to the "average" investor in the world market
  - translates into a lower interest rate
    → ok, although interest rate is not a goal in itself
- Under some circumstances, this increases your welfare
  → why does the invisible hand not work?

Some Comments

1) Alternative Interpretations of Main Result:

- focus on first moment rather than second moment: e.g. pegs buy you credibility against inflation risk (instead of buying you a favorable covariance)

2) Desirability of Currency Manipulation:

- if your goal is to raise capital stock and/or wages, there are more direct instruments that generate fewer ancillary distortions

Some Comments

3) Message of the Paper:

- focus on one main message and develop the paper around it, e.g.:
  - what are the positive effects of pegging?
  - how can we "manipulate" our currency to maximize welfare?

Part II: Generalization of Welfare Results

Simple general setup (inspired by Korinek, 2017, Policy Cooperation…):

- consider a system of economies $i = 1, \dots N$ that solve

$$\max U^i = v\left(e^i + m^i\right) \quad s.t. \quad Q \cdot m^i = 0$$

  - with endowments $e^i = \begin{pmatrix} e_0^i \\ \vdots \\ e_J^i \end{pmatrix}$ and net imports $m^i = \begin{pmatrix} m_0^i \\ \vdots \\ m_J^i \end{pmatrix} \gtreqless 0$
  - $Q = \left(Q_0, \dots Q_J\right)$ is a (row) vector of world market prices

Result 1 (1st Welfare Theorem): the competitive equilibrium in the described system is Pareto efficient.

Part II: Monopolistic Behavior

Consider a country that has market power:

- internalize that world price $Q = Q\left(m^i\right)$

$$\max U^i = v\left(e^i + m^i\right) \quad s.t. \quad Q\left(m^i\right) \cdot m^i = 0$$

- solution: $v' = \lambda Q \cdot \left(1 - \varepsilon_{Q,m}\right)$ equates marginal utility to marginal *revenue* = optimal monopolist's solution
  - tax imports, tax exports to improve terms of trade

- Two important observations:
  - in Arrow-Debreu, different states of nature are like different goods, and capital flows are like flows of goods
  - each country is long in its own idiosyncratic risk

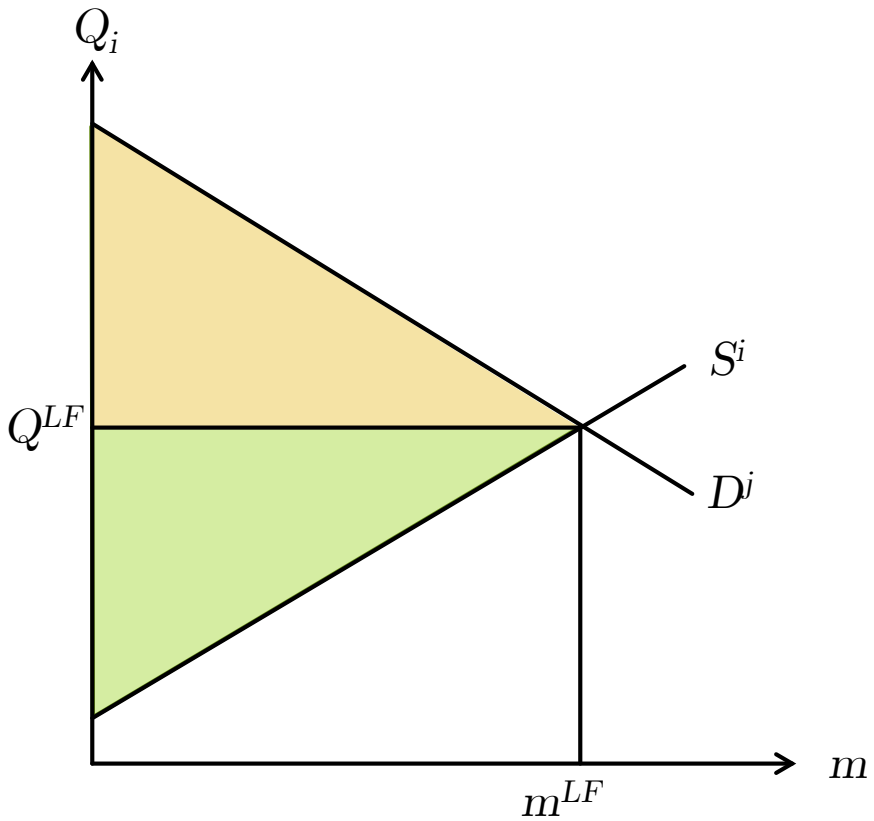
Part II: Monopolistic Behavior

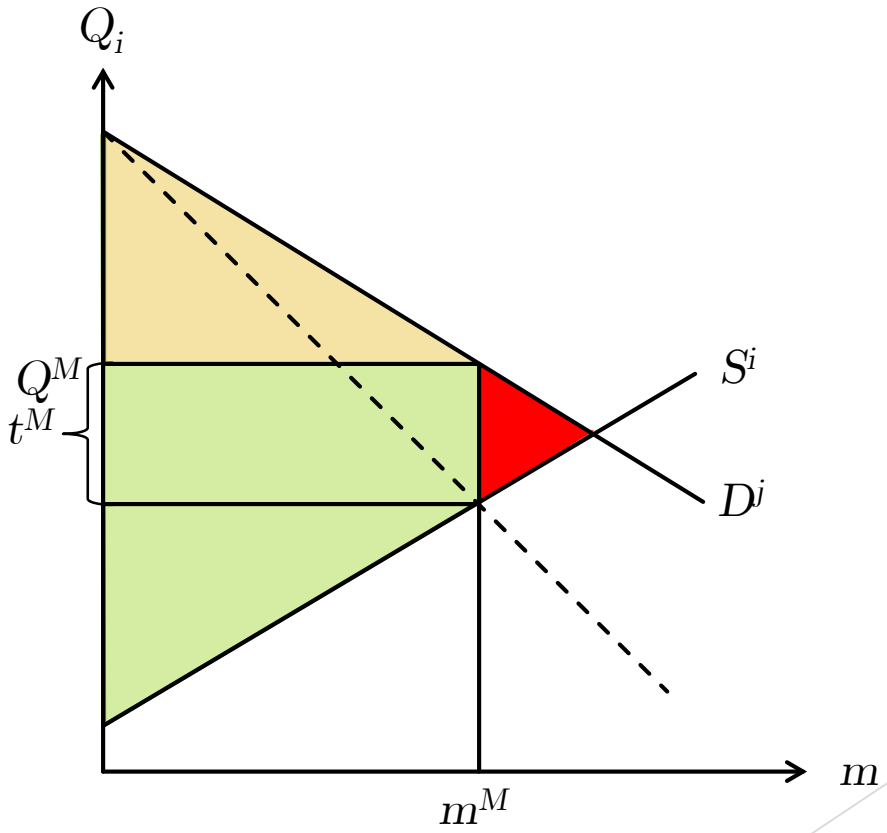
Result 2 (Monopolistic Behavior): a country that exerts market power:

1) finds it optimal to reduce insurance, but
2) reduces global welfare (beggar-thy-neighbor).

- tax inflows (and subsidize outflows) in states of nature when you experience capital inflows
- tax outflows (and subsidize inflows) in states of nature when you experience capital outflows
- *side effect:* stabilize your exchange rate vis-a-vis the rest of the world

Competitive vs Monopolistic Behavior





Part III: Completing Incomplete Markets

Incorporate incomplete asset markets into our model:

- assume one financial asset with initial price p_0 and payoffs $q = (q_1, \dots q_J)$
- country i asset holdings α^i with $\sum \alpha^i = 0$
- net capital inflows of $m^i = \begin{pmatrix} -\alpha^i p_0 \\ \alpha^i q_1 \\ \vdots \\ \alpha^i q_J \end{pmatrix}$
- worldwide weighted welfare is $W = \sum \lambda^i U^i = \sum \lambda^i v(e^i + m^i)$

Part III: Completing Incomplete Markets

What are the welfare effects of manipulating payoff vector q?

$$\frac{dW}{dq_j} = \sum \lambda^i \cdot \alpha^i \cdot v_j' \left(e^i + m^i\right) = \sum \alpha^i \cdot MRS_{0j}^i$$

(for 2 countries) $= \alpha^i \cdot \left(MRS_{0j}^i - MRS_{0j}^k\right)$

1. if market is complete: $\frac{dW}{dq_j} = 0$ → optimal risk-sharing implies no benefits to "manipulation"
2. incomplete markets: $\frac{dW}{dq_j} \gtrless 0$ → benefits to manipulating payoffs in the direction that improves insurance

Result 3 (Completing Markets): under incomplete markets, manipulating exchange rate payoffs q_j to improve risk-sharing can generate a Pareto improvement