

Regulating Capital Flows to Emerging Markets:

An Externality View

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From Financial Repression...

For many decades: emerging economies
have suffered from financial repression:

- Insufficient investment
- Suboptimal allocation of capital
- Growth potential unfulfilled

Old battleground:

fighting financial repression via liberalization

→ *trade-off* between stability and efficiency

...to Prudential Controls

For an increasing number of countries:

liberalization has swept away controls:

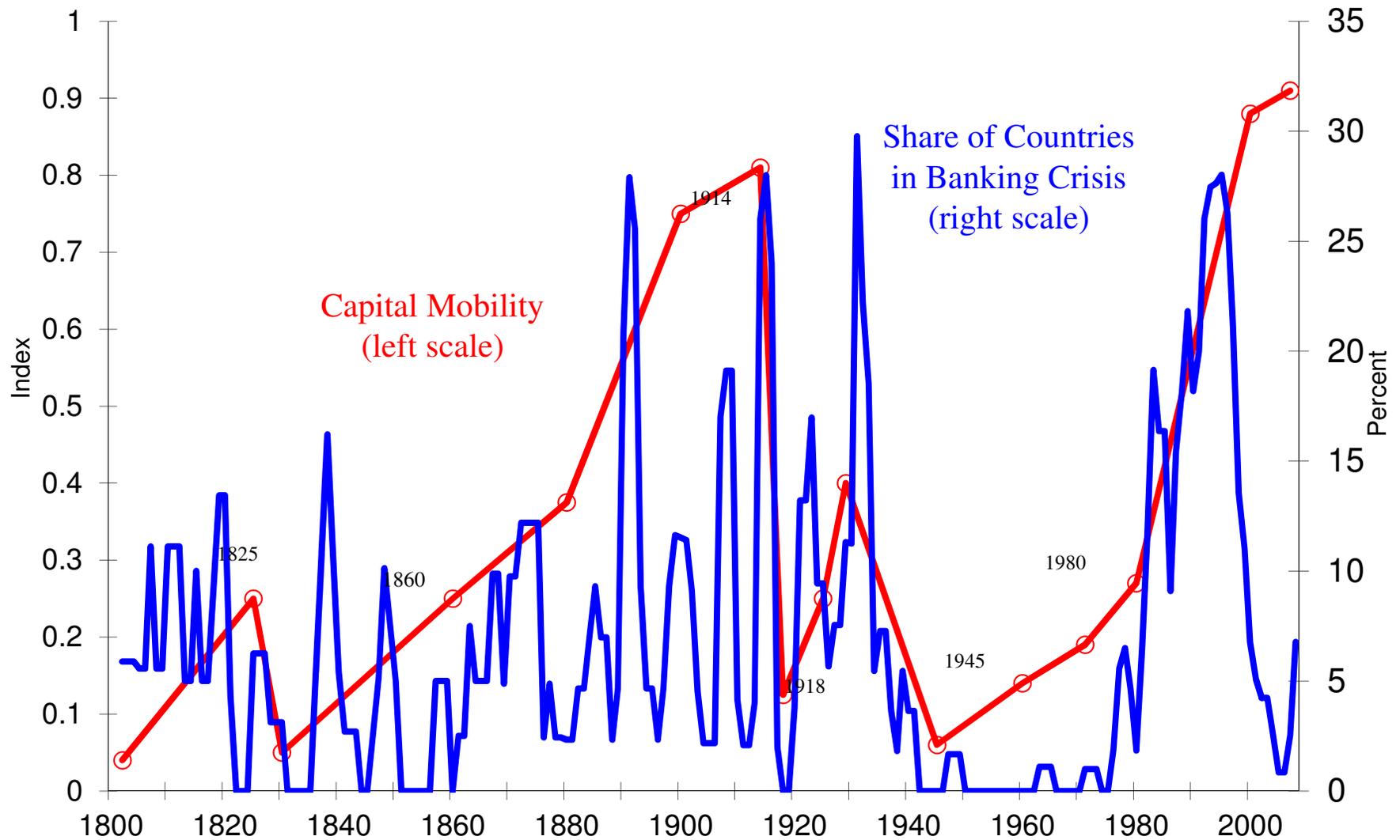
- supply of capital improved
- **BUT:** unfettered markets also bring
unprecedented instability and crises

New battleground:

fighting financial fragility via re-regulation

- *increase both* stability and efficiency

Capital Mobility and Financial Fragility



Source: Reinhart and Rogoff (2009)

Economics of Capital Flow Regulation

Fundamental tenet:

Well-designed regulation should be based on clearly identified market imperfections

Approach:

Countries are wary of capital flows
because of risk of financial crises

→ analyze the desirability of free capital flows or
regulation in our best economic models of crisis

Economics of Capital Flow Regulation

Traditional models of financial crises:

*“if only government fixed its distorted policies,
everything would be fine”*

- 1st generation models: inconsistent exchange rate policy
- 2nd generation models: lack of commitment
- early 3rd generation models: moral hazard

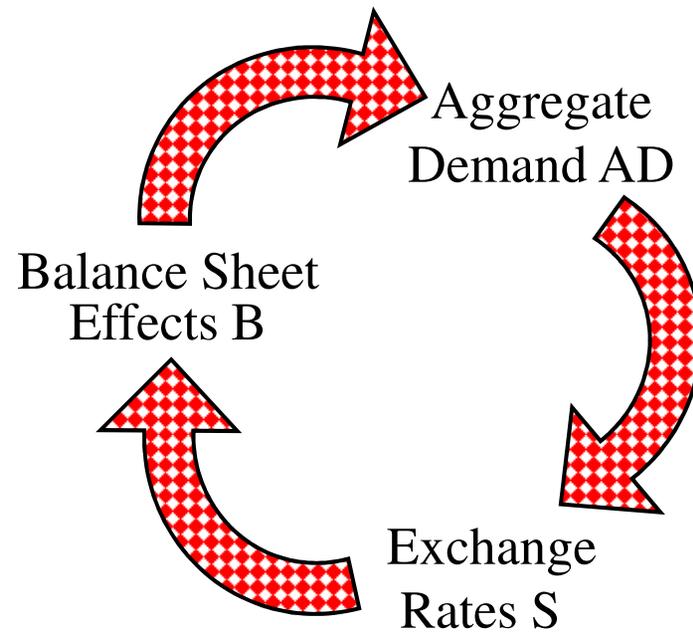
East Asian crises forced a rethink:

- at center of crisis: balance sheet problems
- this led to strong systemic amplification effects

Externalities of Financial Amplification

Prototype of 3rd generation financial crises:

- exchange rate $S = f(AD)$
- borrowing ability $B = g(S)$
- aggregate demand $AD = h(B)$



Externalities of Financial Amplification

Exchange rate depreciations:

- normally play an equilibrating role
- necessary for the self-stabilizing role of markets
- correct price adjustment = basis of welfare theorems

In the presence of balance sheet effects:

- depreciations are contractionary
because of adverse balance sheet effects
- self-stabilizing role of markets inhibited
- welfare theorems *no longer hold*
- role for policy intervention

Externalities of Financial Amplification

Manifestation of Externalities:

- market participants do not internalize that their actions create adverse balance sheet effects for others
- they expose the economy to excessive crisis risk in their financing/investment decisions:
 - excessive level of capital inflows
 - inflows too risky (e.g. dollar debt instead of FDI)
 - maturities too short
 - excessive investment in risky projects
 - excessive integration with global markets
- unified theory of crises and crisis exposure

Role for Policy: Internalizing Externalities

Role for Policymaker:

- Internalize that private risk-taking leads to social losses because of amplification effects
- Impose regulation to align private and social incentives

Measures optimally depend on

1. type of capital flows
2. maturity of flows
3. domestic conditions
4. global macro factors

Role for Policy: Internalizing Externalities

Externalities of Financial Crises:

- can be precisely measured by studying crisis episodes (with the caveat that crises are infrequent events)
- identify the externality of a marginal \$1 outflow
 - externality pricing kernel: $\tau = \lambda * dKA/dGDP$
- determine externalities of different forms of finance (FCD, LCD, equity etc.) with return R as

$$t = E[\tau * R]$$

Role for Policy: Internalizing Externalities

Externalities of Financial Crises:

- can be precisely measured by studying crisis episodes (with the caveat that crises are infrequent events)

Externalities of Capital Inflows to Indonesia (Korinek, 2010):

Asset category	Real gross return	Externality in 1998	Optimal tax equivalent
Dollar debt	218%	30.70%	1.54%
GDP-indexed debt	190%	26.80%	1.34%
CPI-indexed debt	100%	14.10%	0.71%
Rupiah debt	63%	8.90%	0.44%
Portfolio investment	44%	6.20%	0.31%
FDI	0%	0%	0%

Role for Policy: Internalizing Externalities

Implementation of prudential controls through

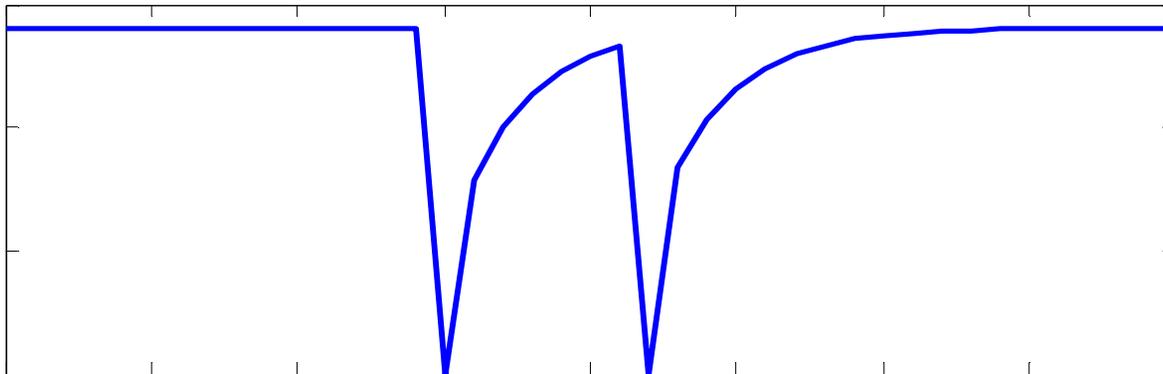
- Tax measures
- Reserve requirements:
 - preferred option
 - ideally held in local currency
- Quantity measures:
 - some inflows may best be prohibited

Capital Controls Over the Cycle

Externalities fluctuate over the cycle:

- largest during booms when risk builds up
- lowest at the bottom of crises

→ optimal prudential capital controls should fluctuate pro-cyclically



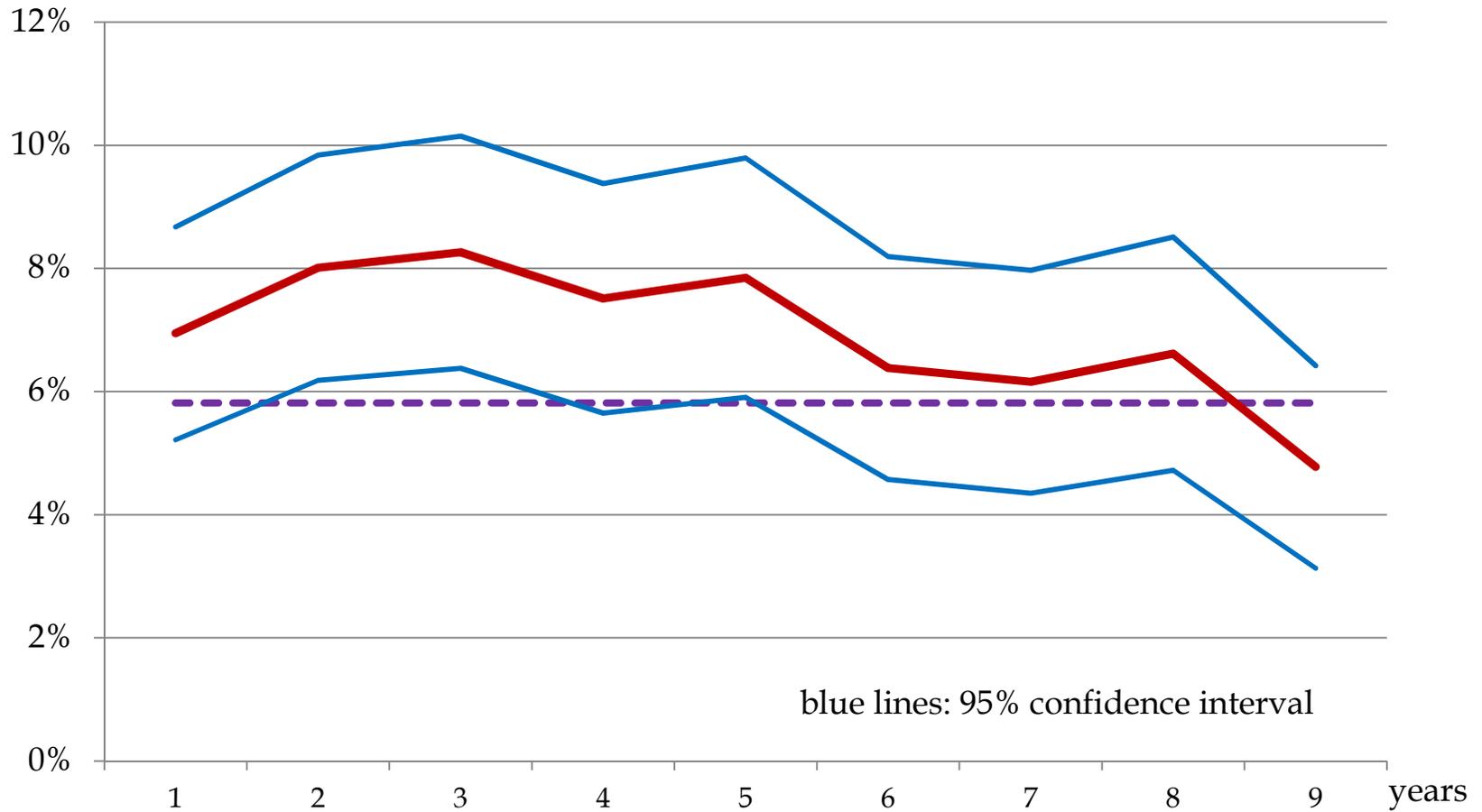
Global Macroeconomic Factors

Global factors that increase externalities:

- shortage of investment opportunities, e.g. in the aftermath of crises in other countries
- reserve accumulation by other countries

- lead to low world interest rates
- higher capital inflows (“hot money”)
- greater crisis risk
- greater systemic externalities

Global Macroeconomic Factors



Conditional Probability of Crisis After a Surge in Capital Inflows

Effectiveness of Capital Controls

- Econometric evidence often mixed
 - problems of endogeneity and heterogeneity
- Most common findings: controls effective...
 - ...in changing composition of inflows → desirable
 - ...in raising cost of capital during booms → desirable
- Details of regulation matter:
 - strong incentive to circumvent regulations
 - measures need to be broad and cover derivatives
 - regulations can be designed in self-enforcing manner
 - design rules to discourage intertemporal arbitrage
 - e.g. apply measures to stocks, not flows

Capital Controls Versus Alternatives

Alternative ex ante measures (when inflows occur):

- prudential controls in banking system
 - reserve accumulation
 - contractionary monetary/fiscal policy
- each of these cause their own distortions

General principle: target policy measures as directly as possible at underlying problem

- if we can identify clear externalities, target externalities

Ex post measures: in principle complementary, but subject to severe constraints

Capital Controls or Macropru?

Capital Controls or Macroprudential Regulation? (with Damiano Sandri, 2014):

- repayments to foreigners lead to loss of domestic purchasing power, transfer problem
- repayments to domestic agents don't
- regulate borrowing from abroad more heavily

Optimal intervention during booms:

- curtail excessive borrowing from domestic agents
- curtail foreign borrowing even more heavily

$$\tau^{\text{CC}} > \tau^{\text{MP}} > 0$$

Spillover Effects of Capital Controls

- Capital controls in one country divert flows to other countries
- Are there strategic interactions?
 - yes, there are strategic complementarities: if one country imposes tighter controls, others have a greater incentive to follow
 - however, these complementarities are desirable as they induce policymakers more strongly to regulate externalities
 - no general need for global coordination
(analogy: regulating the externalities of road traffic induces people to rely more on air traffic)

Conclusions

- Financial crises with balance sheet effects generate externalities
- Free market equilibrium socially suboptimal
 - private sector takes on excessive systemic risk
- Rationale for risk-based capital controls

Background Papers

The New Economics of Prudential Capital Controls:

- Regulating Capital Flows to Emerging Markets: An Externality View
- Hot Money and Serial Financial Crises
- Managing Credit Booms and Busts: A Pigouvian Taxation Approach (with Olivier Jeanne)
- Capital Controls and Currency Wars
- Capital Controls or Macroprudential Regulation? (with Damiano Sandri)

available at <http://www.korinek.com/>