

# **Boom-Bust Cycles in Emerging Markets**

### Aaron Tornell UCLA

Presented at the 9th Jacques Polak Annual Research Conference Hosted by the International Monetary Fund Washington, DC—November 13-14, 2008

The views expressed in this paper are those of the author(s) only, and the presence of them, or of links to them, on the IMF website does not imply that the IMF, its Executive Board, or its management endorses or shares the views expressed in the paper.

### Boom-Bust Cycles in Emerging Markets.

Key: Sharp sectoral asymmetries

Endogenous insolvency risk taking

Credit Market Imperfections  $\rightarrow$  Borrowing Constraints

Political Imperfections  $\rightarrow$  Systemic Bailout Guarantees

### Lending boom:

Credit-to-GDP increases

Asset price inflation

Nontradables-to-Tradables output ration increase

### The Bust:

GDP growth resumes fast

Protracted credit crunch

Fire sales

N-to-T jumps down

Tiping point: shift from risky to safe equilibrium with no insolvency risk taking

Safe equilibrium  $\rightarrow$  low leverage  $\rightarrow$  fall in N-prices

Policy makers try to avoid the resolution of the crisis (fall in p)

### The Boom-Bust Cycle in the US and in Emerging Markets



### 1. The Boom-Bust Cycle in Emerging Markets



Mexico

N-to-T Output Ratio











#### **GDP** per Capita Growth



Note: Event windows were constructed from panel regressions of the respective variable in each graph on dummy variables that take of value of 1 in the period where a joint banking and currency crisis occurred and zero otherwise. The panel regressions are estimated with fixed effects, using a GLS estimator. The N/T and GDP series where computed as mid-year changes. The graphs are the visual representations of the point estimates and standard errors from the following pooled regression:

$$y_{it} = a_i + \sum_{j=-3}^{3} \beta_j Dummy_{\tau+j} + \varepsilon_{it},$$

where y is the respective variable of interest in the graph, i = 1...35 denotes the country, t = 1980...1999, and  $Dummy_{\tau+j}$  equals 1 at time  $\tau+j$  and zero otherwise, where  $\tau$  is a crisis time.

### **Credit in Mexico**





b) Real Credit









Non-tradables and Tradables Production in Mexico









Note: The T-sector includes Manufacturing, Mining and Agriculture. The N-sector includes Construction, Commerce, Restaurants and Hotels, Transporting, Storage and Communications and Communal Services. Source: INEGI

### Share of NPLs in Total Loans



 $\ast$  Restructured loans include the programs of UDIS, IPAB-FOBAPROA, restructured portfolio affecting the flow participation scheme and Special CETES

\*The IPAB-FOBAPROA non-performing loans were obtained by applying the ratio of non-performing loans to total IPAB-FOBAPROA portfolio to IPAB-FOBAPROA's Titles.

# 2. Boom-Bust Cycle US

### Figure 1. Asymmetric Financial Development (I)

Figure 1: Domestic Non Financial Sector: Mortgage Debt/GDP vs. Non Mortgage Debt/GDP



### Figure 2. Asymmetric Financial Development (II)



Partition of Financial Assets in US Chartered Banks

## Figure 3. Real Home Price

### Figure 1.2 Real Home Price (source: Shiller)



Figure 4. New Home Sales



### Figure 5. Asymmetric Real Development



### Figure 6. Asymmetric Crash

CDS Spread by Industry (source JP Morgan)



### Should regulation aim at eliminating risk taking?

#### Is a safe path preferable to a risky path?

Across emerging countries, those that have higher GDP growth tend to have a greater incidence of crises.

How can we see this in the data?

High mean growth is associated with **negative skewness** of macro variables.

The volatility associated with crises is not identified by variance

Crises are rare and exhibit sharp falls in growth

Over the long-run rare crises are associated with more growth

#### WHY?

Contract enforceability problems  $\rightarrow$  lending is constrained by internal funds

Payoff to divert < Expected debt repayment

#### With systemic bailout guarantees

Insolvency risk-taking  $\rightarrow$  taxpayers will pay debt in crisis states

- $\rightarrow$  lenders don't charge a higher interest rate
- → Expected debt repayment is lower
- ➔ borrowing constraints are relaxed
- Higher lending  $\rightarrow$  more investment
  - ➔ higher asset prices
  - ➔ higher collateral value
  - → more lending
  - → .....
  - ➔ More long-run growth???

Yes if borrowing constraints imply high productivity projects are not undertaken.