Crises and Growth: A Re-Evaluation

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Dubrovnik, July 2005

"The regular development of wealth does not occur without pain and resistance. In crises everything stops for a while but it is only a temporary halt, prelude to the most beautiful destinies."

Clement Juglar: (1863) Des Crises Commerciales et de leur Retour periodique en France, en Angleterre et aux Etats-Unis

Crises and Growth: A Re-evaluation

- 1960-1980 Countries that have experienced occasional financial crises have on average grown faster that countries with stable condition.

- It would appear that policies that induce higher growth also generate systemic risk, which lead to crises.

- Our finding <u>does not imply</u> crises are good for growth!

- Undertaking systemic risk
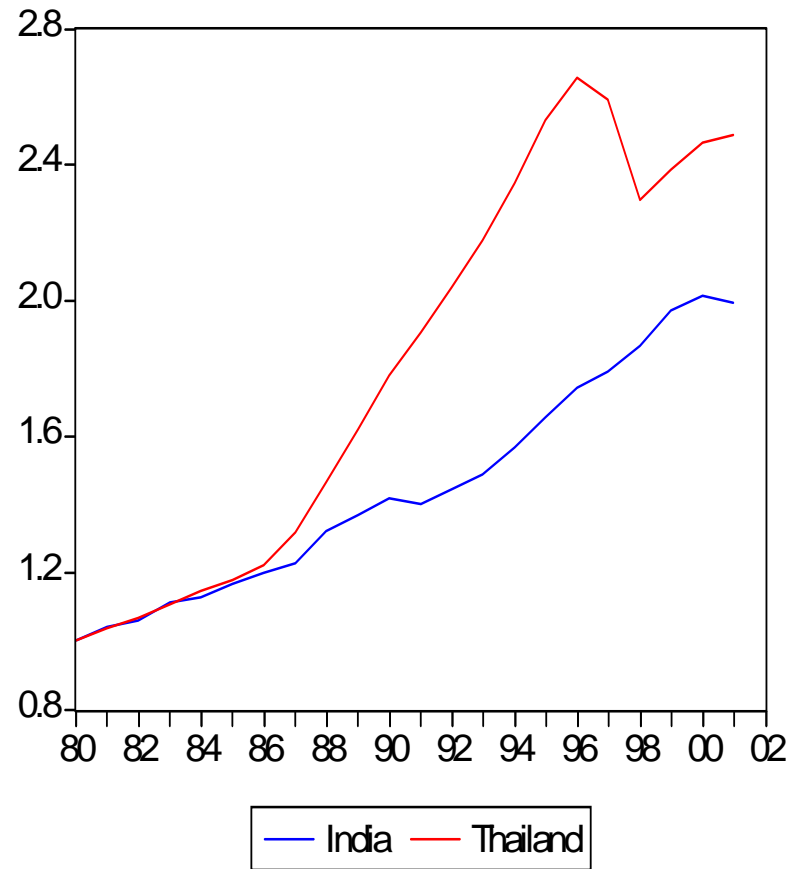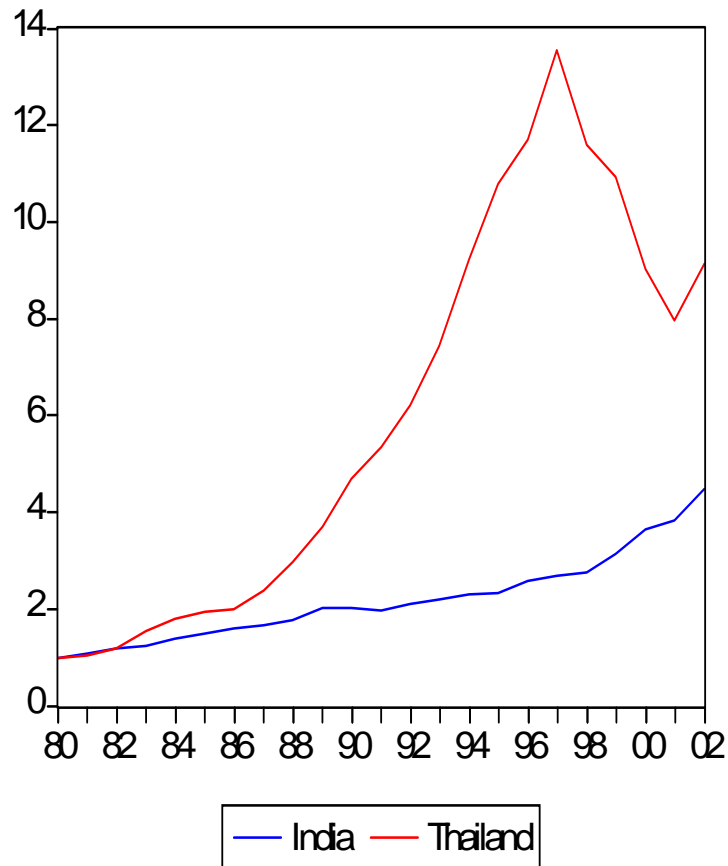   - > Higher Growth
    - > Side Effect: Crises

Slow and Safe Growth Path vs. Rapid and Risky Path

## India vs. Thailand

(1980-2002)

Credit:

GDP per capita:

Note: The values for 1980 are normalized to one.

measuring the incidence of crises: skewness

- Skewness of the real credit growth rate distribution:

  - Rare, Large and Abrupt Contractions

  - Negative Outliers

- Variance is not a good proxy as it captures:

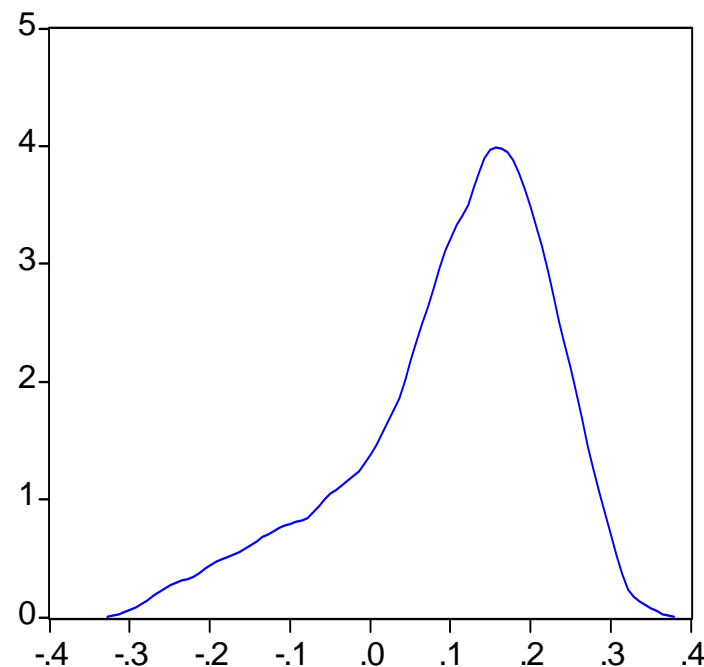 - High Frequency shocks

  - Symmetric Shocks

India vs. Thailand: Distribution of Real Credit Growth

Kernel Density (Epanechnikov, h = 0.1000)
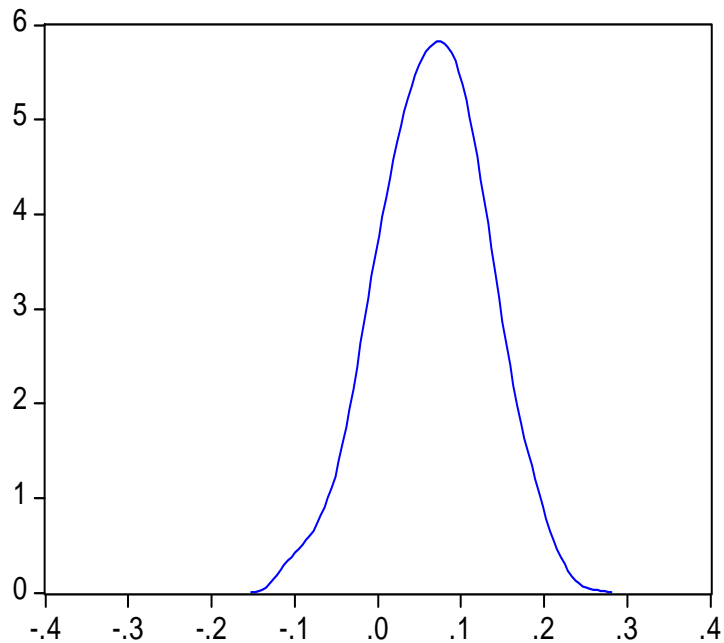
Kernel Density (Epanechnikov, h = 0.1000)

India

Thailand

	India	Thailand
Mean	0.066	0.102
Std. Dev.	0.050	0.117
Skewness	-0.286	-1.026

Moments of Credit Growth for different country groups

	High Income Countries	Middle Income Countries	Low Income Countries
Mean	0.031	0.077	0.042
Std. Dev.	0.091	0.145	0.174
Skewness	0.526	-1.441	-0.677

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Moments of Credit Growth Before and After Financial Liberalization

	Country-years that are liberalized	Country-years that are closed
Mean	0.067	0.034
Std. Dev.	0.130	0.170
Skewness	-0.707	0.049

Empirical Results

Sample

- 83 countries for which data is available for 1960-2000
  - 11 severe war cases
  - 14 experience large term of trade deterioration

Main Finding

- a negative link between skewness and per Capita Growth
  - in the Set of 83 countries
  - in the Set of 58 countries that exclude war / term of trade deterioration

Table 1: Skewness and Growth
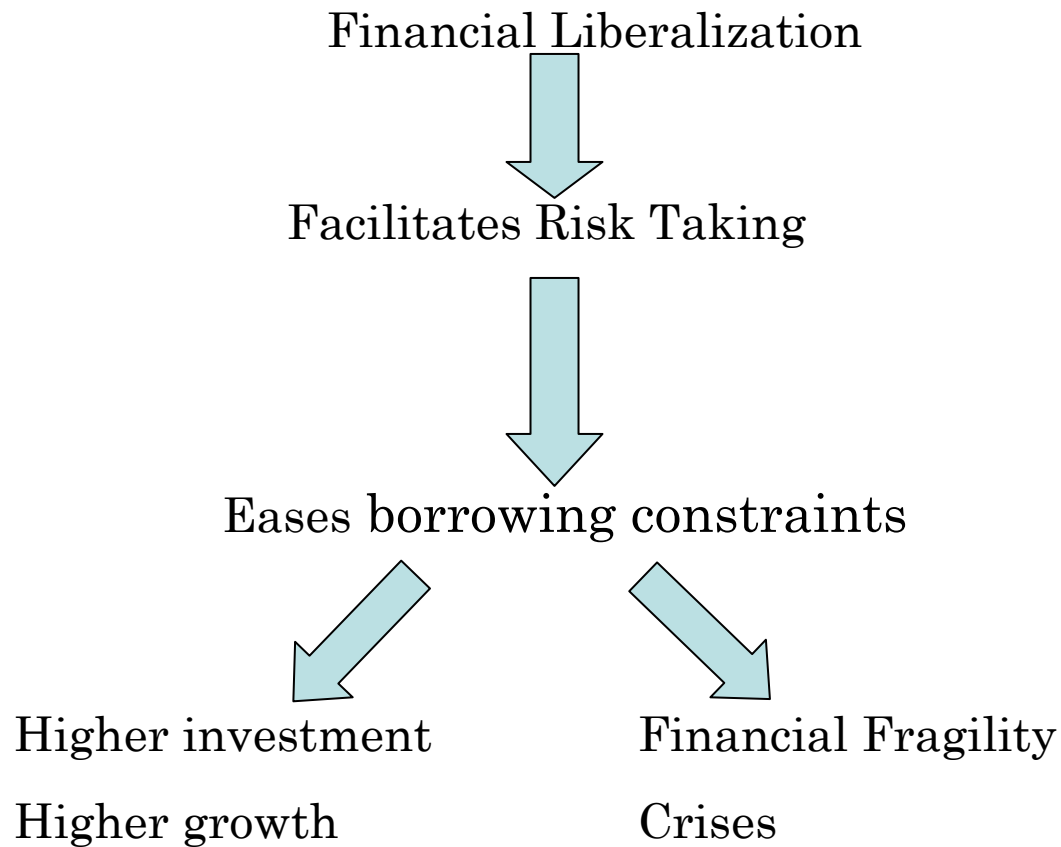
Dependent variable: Real per capita GDP growth

	(1) [a]	(2) [b]	(3) [c]	(3) [c]
	Cross section OLS	Panel GLS	Panel GMM System Estimator	Overlapping Panel GMM System Estimator
Initial per capita GDP	-0.463	-0.263**	-0.157	-0.526**
	(0.356)	(0.122)	(0.172)	(0.018)
Secondary schooling	0.020	0.020**	0.139**	0.038**
	(0.020)	(0.006)	(0.274)	(0.001)
Credit growth, mean	0.161**	0.178**	0.147**	0.122**
	(0.049)	(0.010)	(0.017)	(0.002)
Credit growth, variance	-0.045**	-0.044**	-0.064**	-0.014**
	(0.023)	(0.0089	(0.007)	(0.001)
Credit growth, skewness	-0.406**	-0.302**	-0.204**	-0.418**
	(0.194)	(0.052)	(0.084)	(0.011)
# of observations	58	114	114	668

The negative link between skewness and growth

- Robust:

  - Fixed Effects and Time Effects, Large set of Control Variables

  - Potential Endogeneity: Instrumental Estimation (Financial Liberalization Index.

- Economically Important:

  - 1/3 of Thailand – India Growth Differential 1980-2000

- Specially Strong among:

  - Middle Income Countries
  - Intermediate Degree of Contract Enforceability
  - Financially Liberalized Countries

- "Sample" skewness → we play against ourselves (China)

The Theoretical Mechanism

In economies with credit market imperfections generating borrowing constraints (BC)

Financial Liberalization

Facilitates Risk Taking

Eases borrowing constraints

Higher investment

Higher growth

Financial Fragility

Crises

question: under which conditions such a risky behavior is growth enhancing and welfare improving

The Model

- Two-Sector Growth Model with Endogenous Uncertainty

- Sector T: "Tradables" or "Old Economy" (no borrowing constraint: Perfect Access to Capital Markets) (Oil Producers; Car Makers)

- Sector-N : "Non Tradables" or "New Economy" (Services to Industry; Fiber Optic Sector)
  - *imperfection 1: contract enforceability problem → borrowing constraints*

- N produces an input for both T and N-Sector

- N investment → Productivity of T-sector
  - *imperfection 2: Systemic Bailout Guarantees for Lenders-> systemic risk taking*

- P=Pn/Pt (1/Real Exchange Rate): (Price of Fiber Optic / CPI)

- Debt Denomination and Self-fulfilling crises. T-debt→ Level P→N-solvency but N-solvency→ N-demand

The Financing Structure of the Economy

T- Firms → *taxes* → BAILOUT AGENCY

INPUTS

N- firms

Debt Contracts
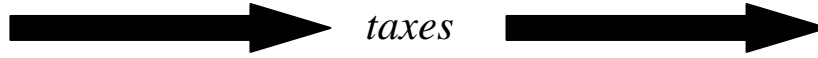
bailout payments if systemic crisis
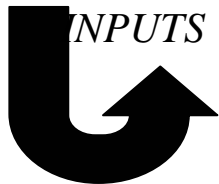
LENDERS

INPUTS

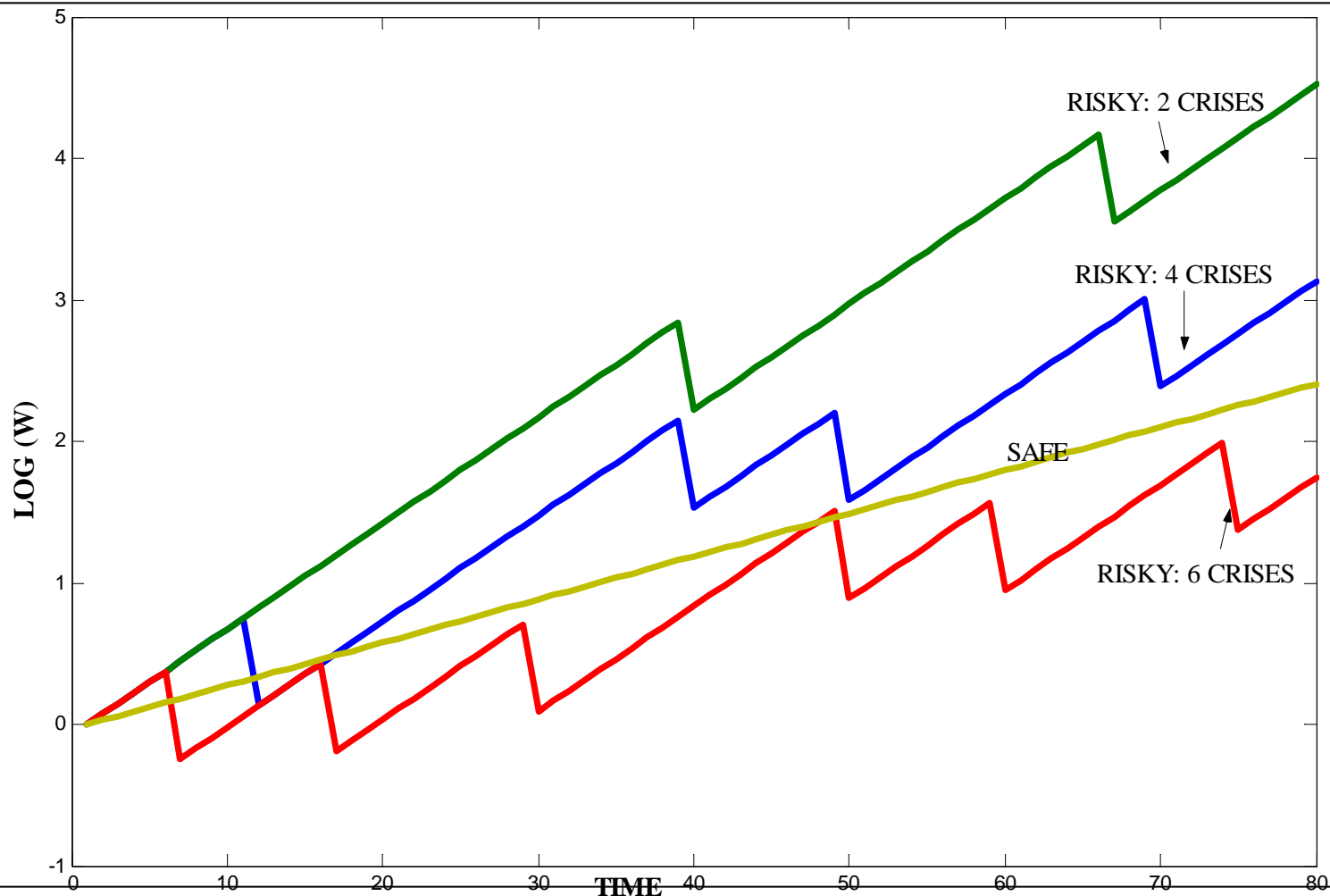# Safe vs. Risky Equilibrium

Safe Equilibrium

1. N-Debt

2. No Crisis

3. Low Leverage

4. Low Investment

5. Low Growth

Risky Equilibrium

T-Debt →Boom-Bust Cycles

1. High Growth Phase
   1. T-Debt
   2. High Leverage
   3. Credit Boom: High Investment
2. Crisis Episode
   1. Sharp Depreciation
   2. Widespread Default/Firesales
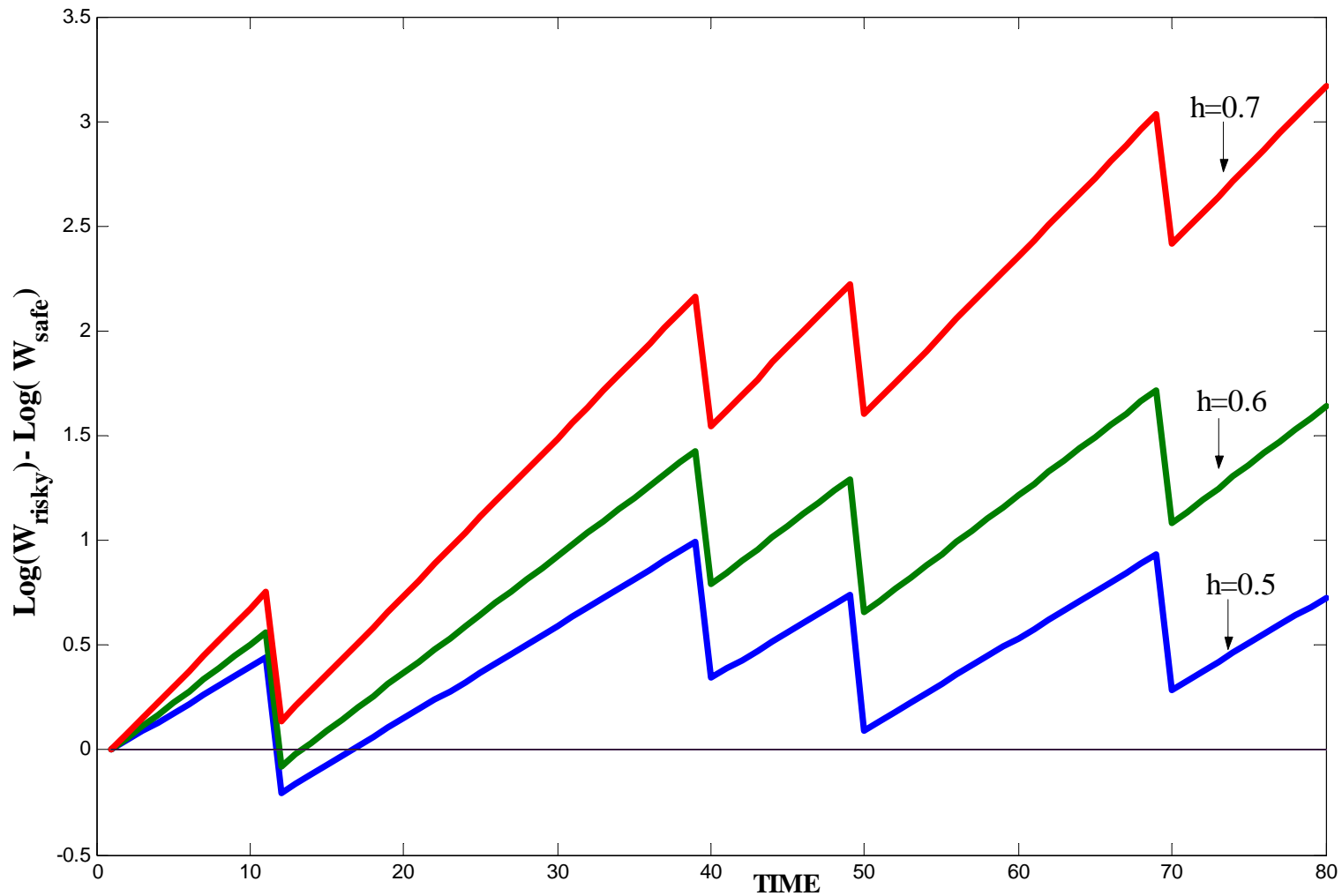   3. Credit Crunch: Low Investment
   4. Bailout of Lenders

Output in Safe vs. Risky Economy

proposition 1: with intermediate contract enforceability problems and financial distress costs not too large:
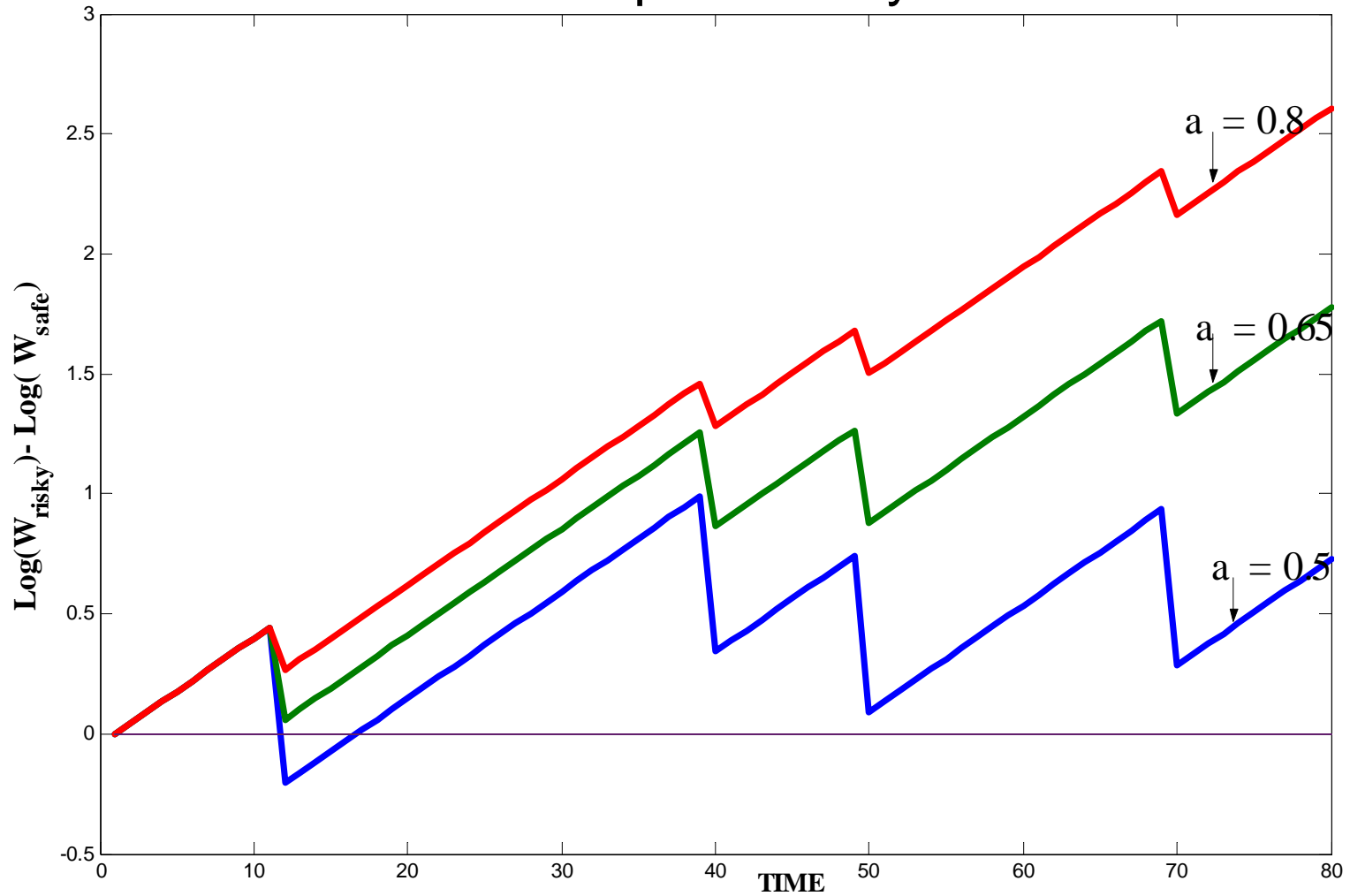
Mean Growth Risky Equilibrium >Growth Safe Equilibrium

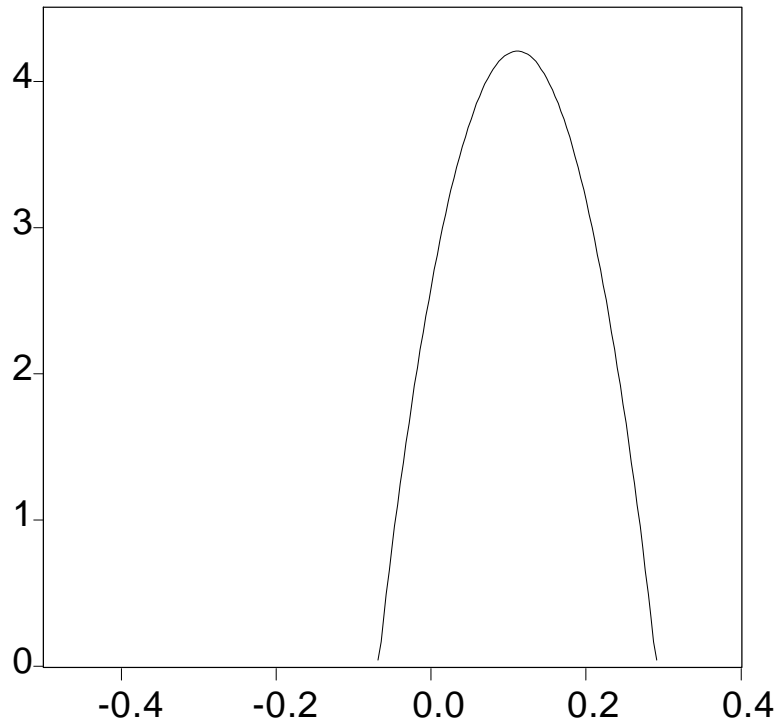# Growth Risky- Growth Safe : The Role of Contract Enforceability

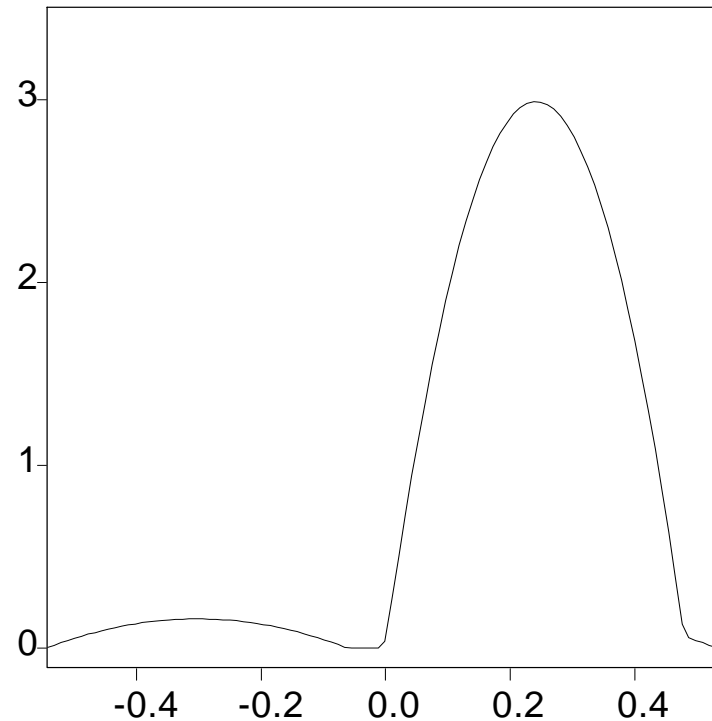# Growth Risky- Growth Safe : The Role of Sector Complementary

Credit Growth Rate Distribution

Safe Economy

Epanechnikov, h = 0.2

Risky Economy

Epanechnikov, h = 0.2

<u>proposition 2</u>:

Risky Economy : Skewness of the Credit Growth Distribution

Systemic Risk Taking: Is it worth it?

- N-sector investment <Pareto Optimal Level of Investment
  - *Financial Bottleneck in one Sector –>Real Bottleneck*

- <u>proposition 3</u> :If crisis are rare events and crises costs are not too large, it not also not only **growth enhancing but also welfare improving**.

- Welfare Consequences of **two** Imperfections: Imperfect Contract Enforceability Systemic Bailout Guarantees

- Will the non constrained T-sector be willing to pay the fiscal cost bailout? yes if the share of N-goods in T-production is large enough.

- Bail-Out => a *decentralized redistribution* from the unconstrained to the constrained sector for their mutual benefits