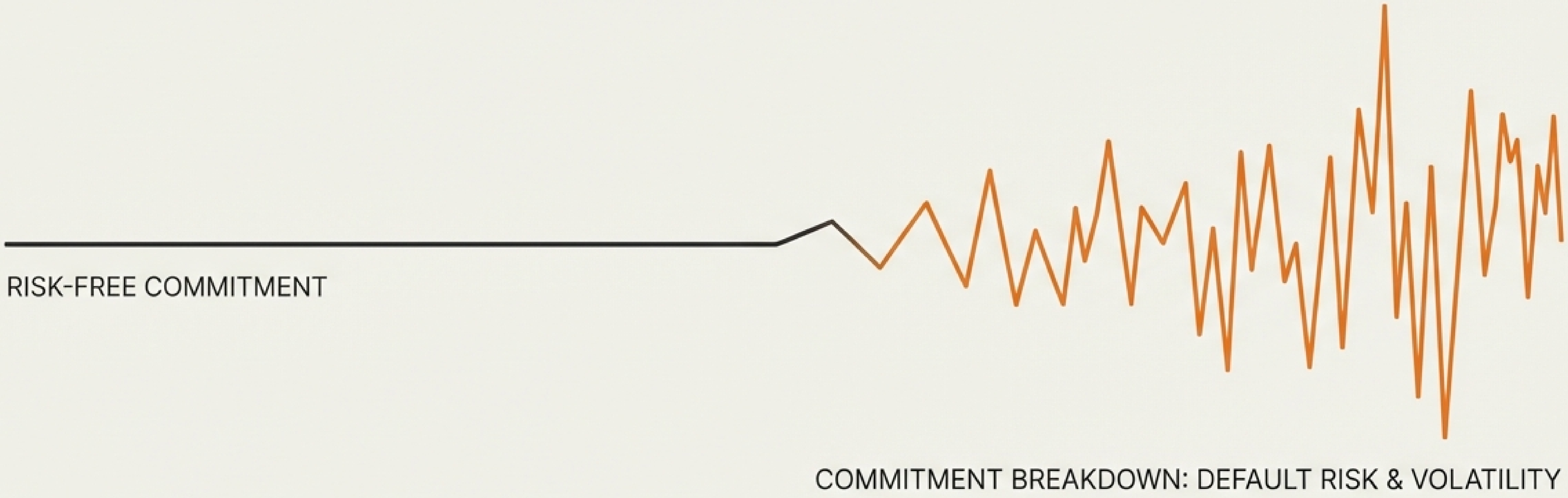
Sovereign Debt & Default Risk

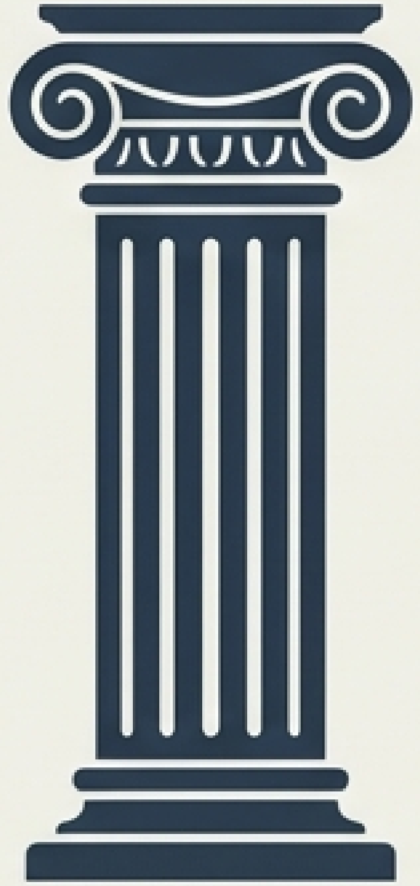
Unpacking the Economics of Borrowing Without Commitment



Based on Chapter 24 by Juan C. Hatchondo and Leonardo Martinez

The End of the Risk-Free Assumption

The Standard Model (Fiction)



- **Assumption:** Full Commitment.
- **Interest Rates:** Constant & Risk-Free.
- **Sustainability:** Depends only on fiscal policy.

The Sovereign Default Model (Reality)

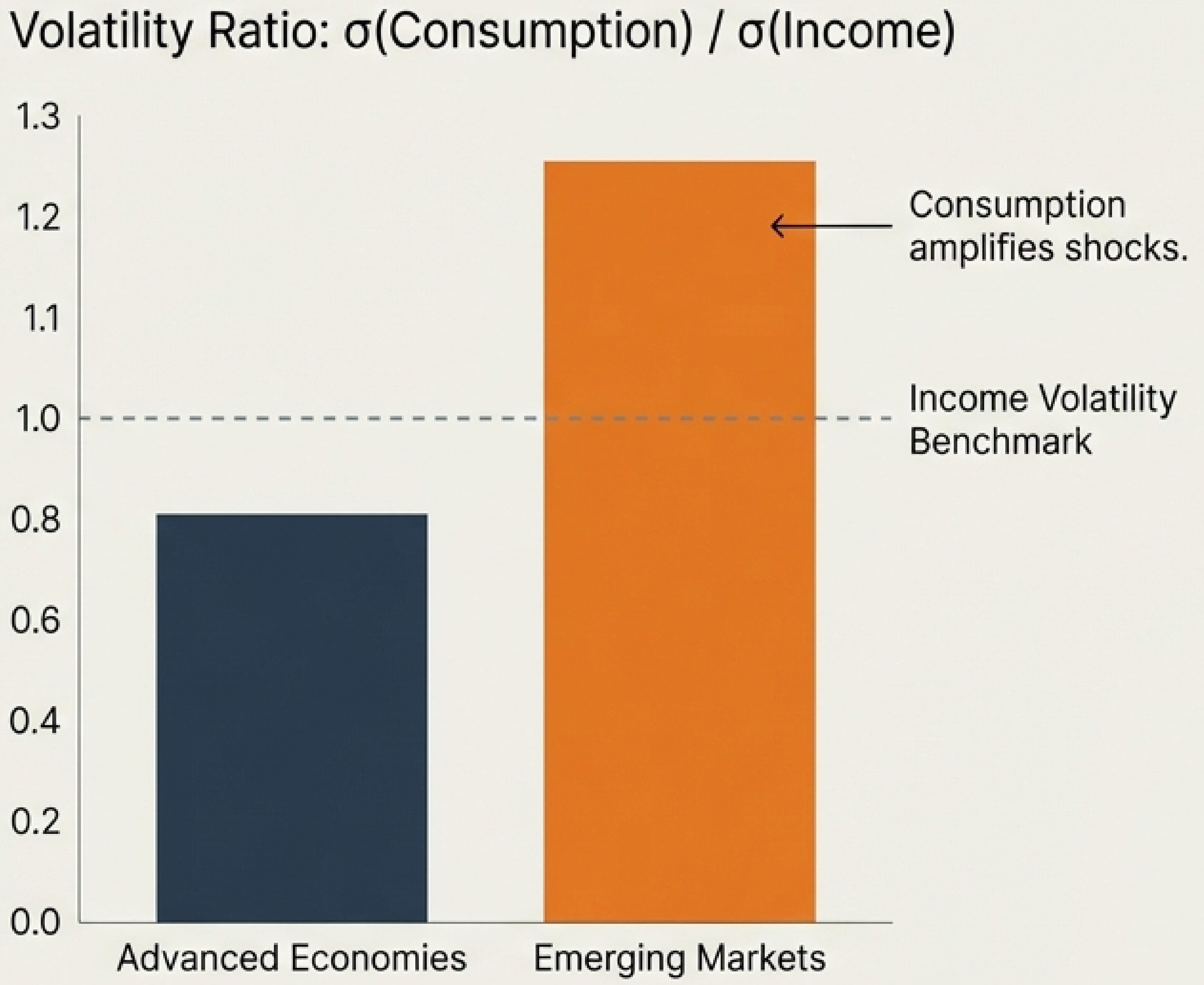
- **Reality:** Governments cannot commit to repay.
- **Interest Rates:** Endogenous (Rise with Default Risk).
- **Sustainability:** Dependent on market incentives and willingness to pay.

Scope: Not limited to 1980s Latin America. The mechanisms apply globally, evidenced by the 2011–2012 Eurozone Crisis (Greece, Portugal, Spain, Ireland).

The Emerging Market Anomaly: Excess Volatility

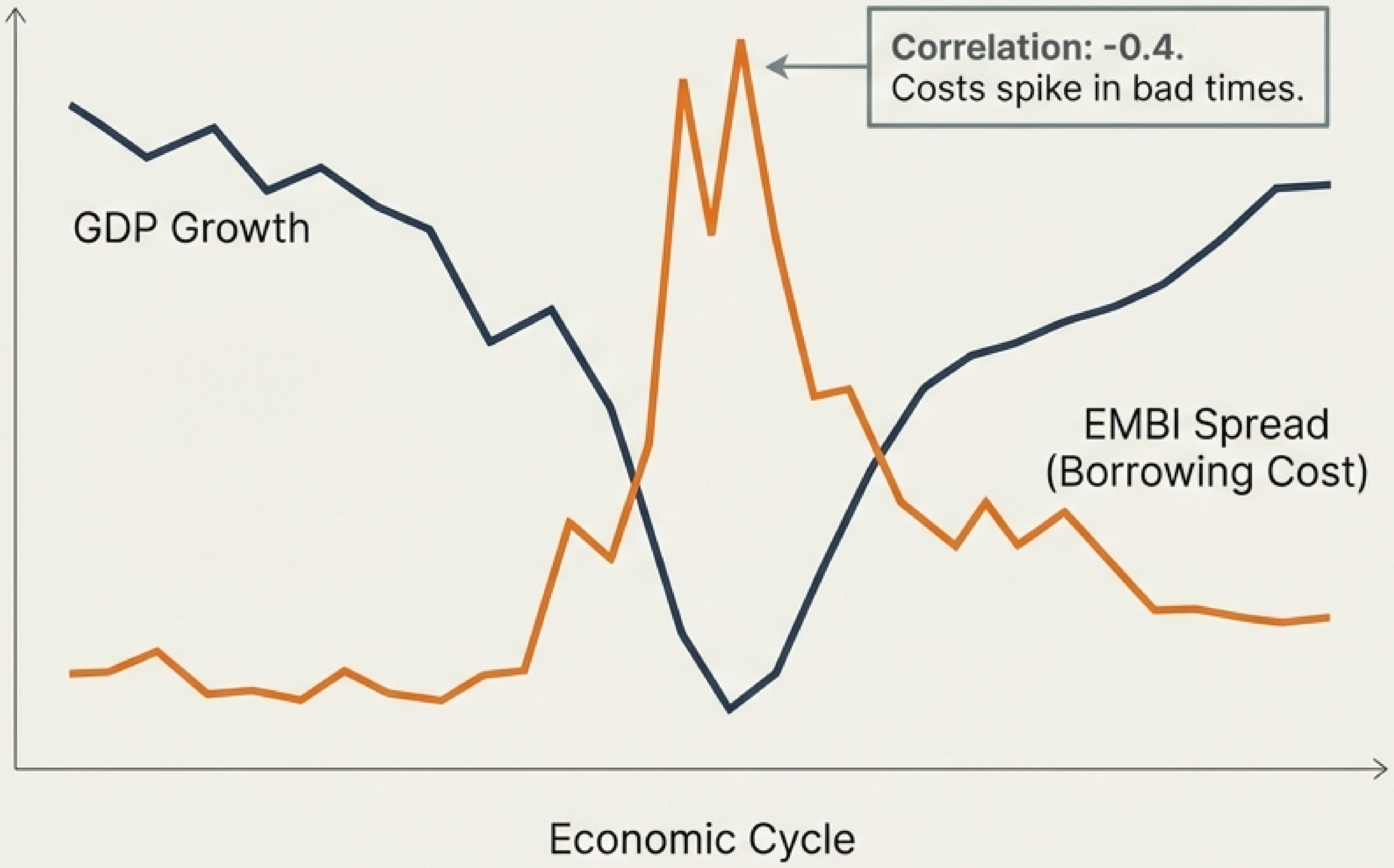
Standard Logic: Consumption Smoothing.
Countries should save in booms and borrow in busts. In Advanced Economies, Consumption is less volatile than Income.

The Anomaly: Emerging Markets.
Consumption is MORE volatile than Income. They borrow heavily in booms and repay in busts (Procyclicality).



The Market Punishment: Countercyclical Spreads

Markets charge the highest premiums exactly when countries can least afford them.



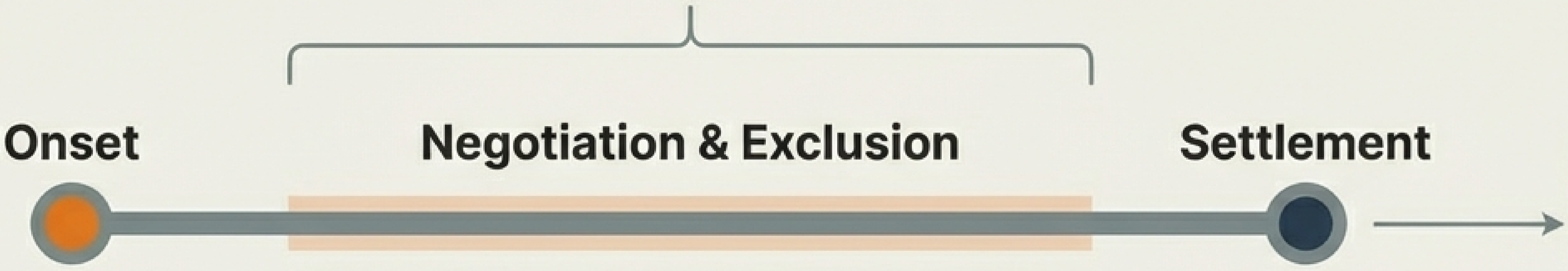
Real World Impact: Italy 2012

A 100bps increase in spread raised firm borrowing costs by 64bps.

Without the spread spike, GDP decline would have been 3.2% instead of 6.4%.

The Anatomy of a Sovereign Default

Average Duration: 3.2 Years



Onset

Usually occurs when GDP is below trend (60% of cases).

Negotiation & Exclusion

Complex bargaining with creditors. Market access is cut off.

Settlement

Exchange of old debt for new.

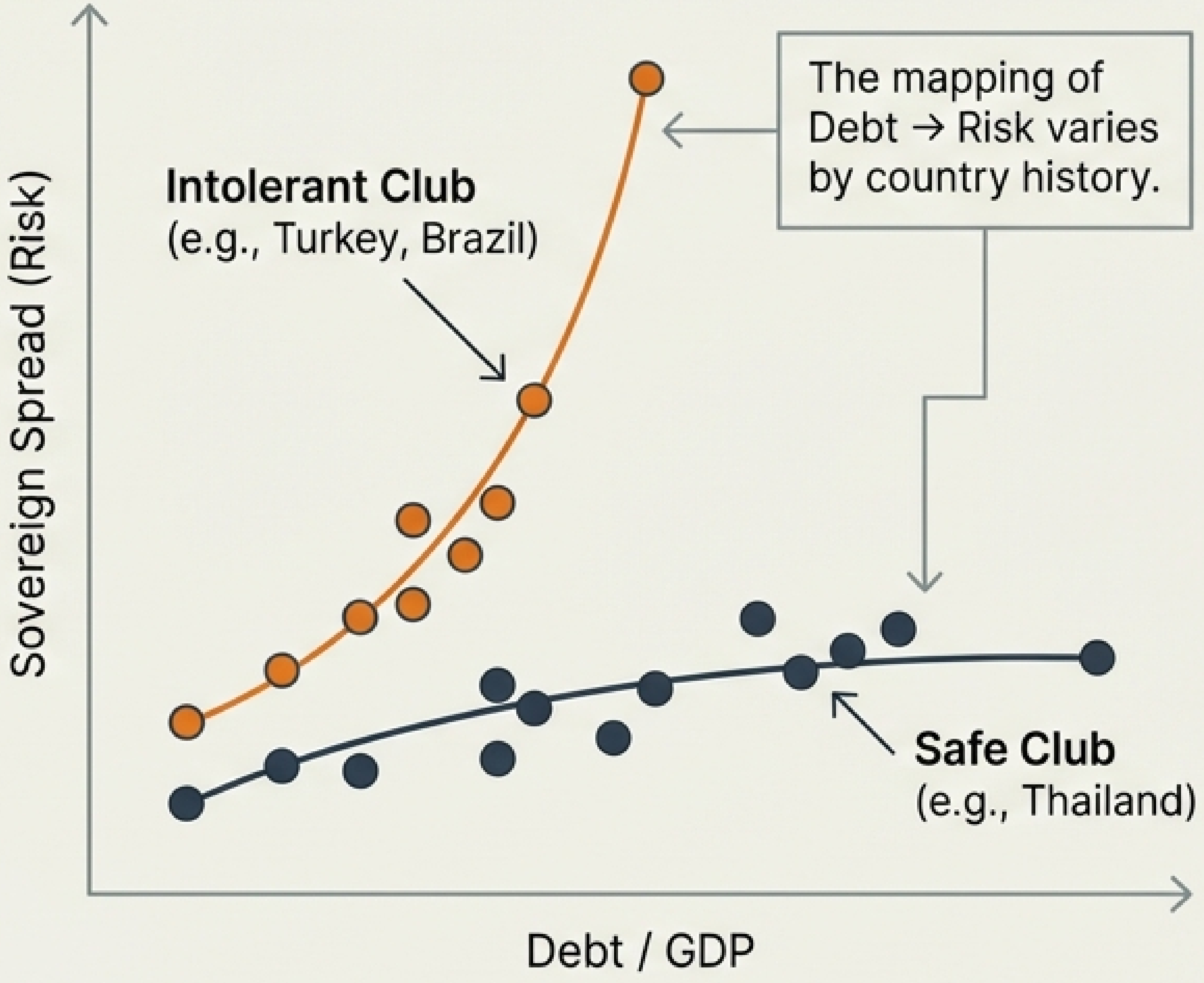
37% Haircut

Average loss to creditors in present value terms.

Default includes “**Pre-emptive Restructurings**”—renegotiating terms before a payment is missed.

Debt Intolerance and Original Sin

Debt Intolerance



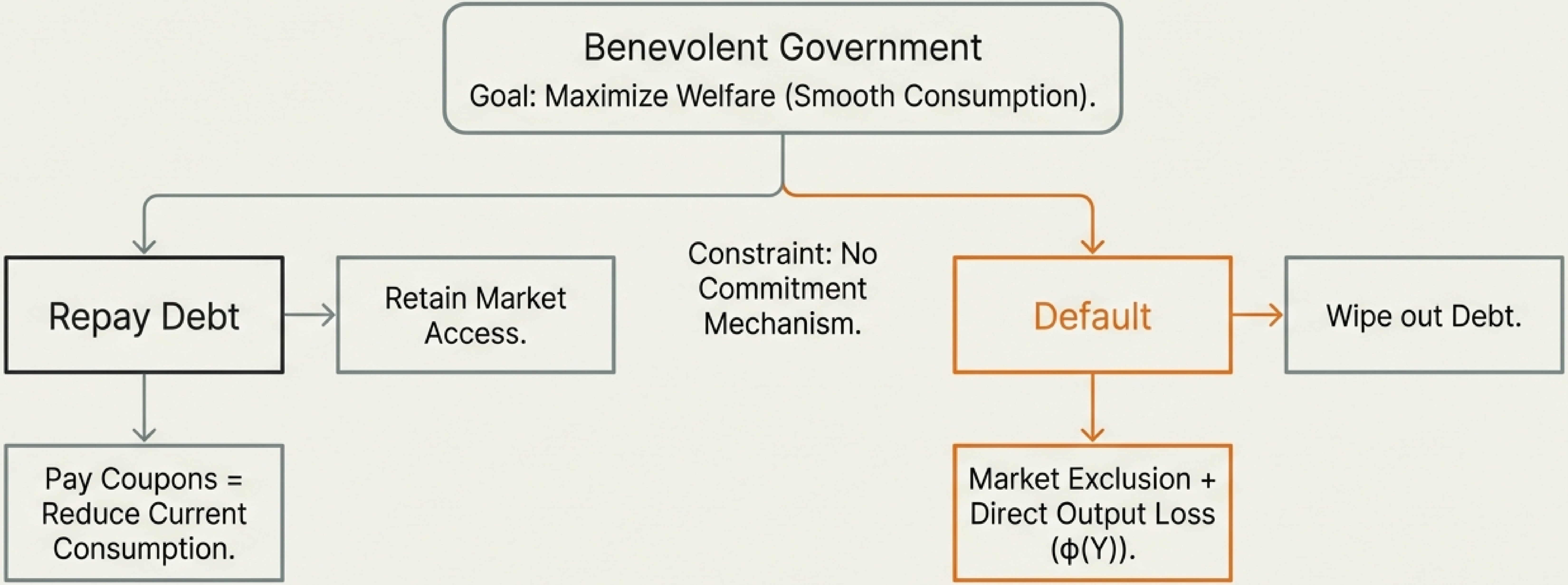
Original Sin

Inability to borrow in local currency.

1. Borrow in FX. → 2. Crisis Hits. → 3. Local Currency Crashes. → **4. Real Debt Burden Explodes.**

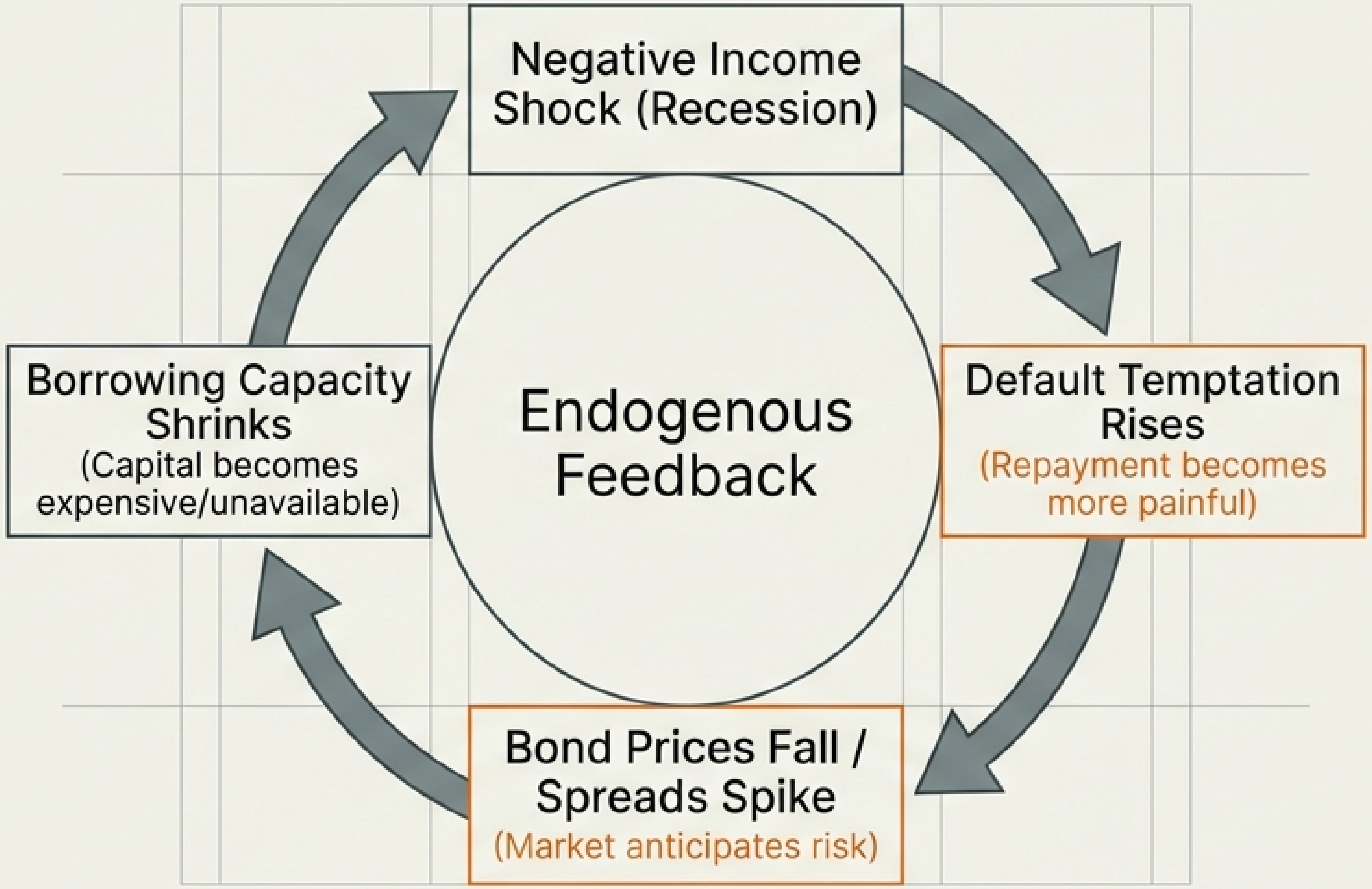
Positive correlation between FX share and Spreads.

Modeling the Core Tension



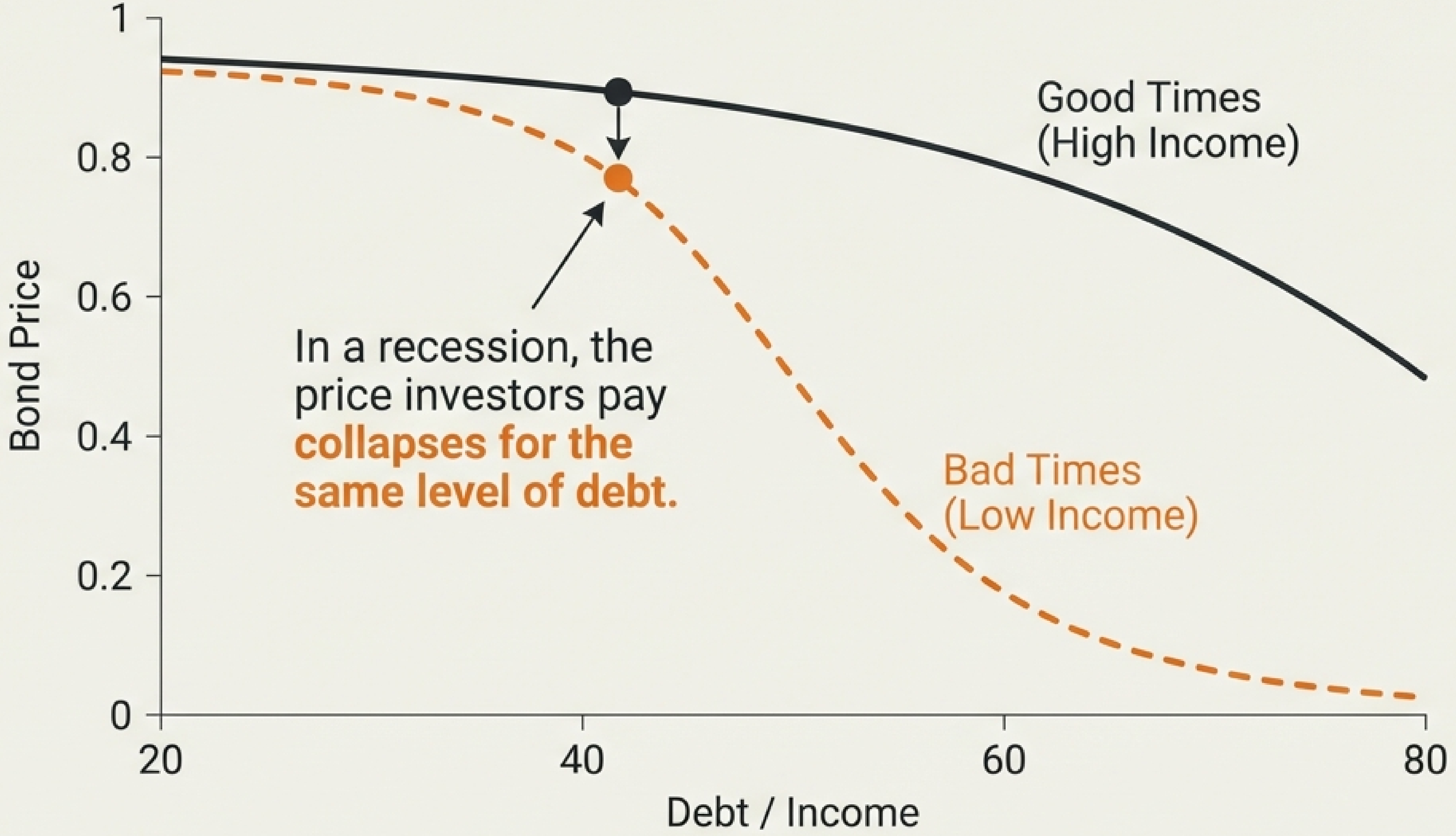
Key Assumption: Default is proportionally more costly in good times. This is essential for matching spread dynamics.

The Vicious Cycle of Endogenous Rates



Marginal Benefit of Borrowing = Cash Today − (**Drop in Bond Price** × Debt Stock).

Visualizing the Credit Crunch

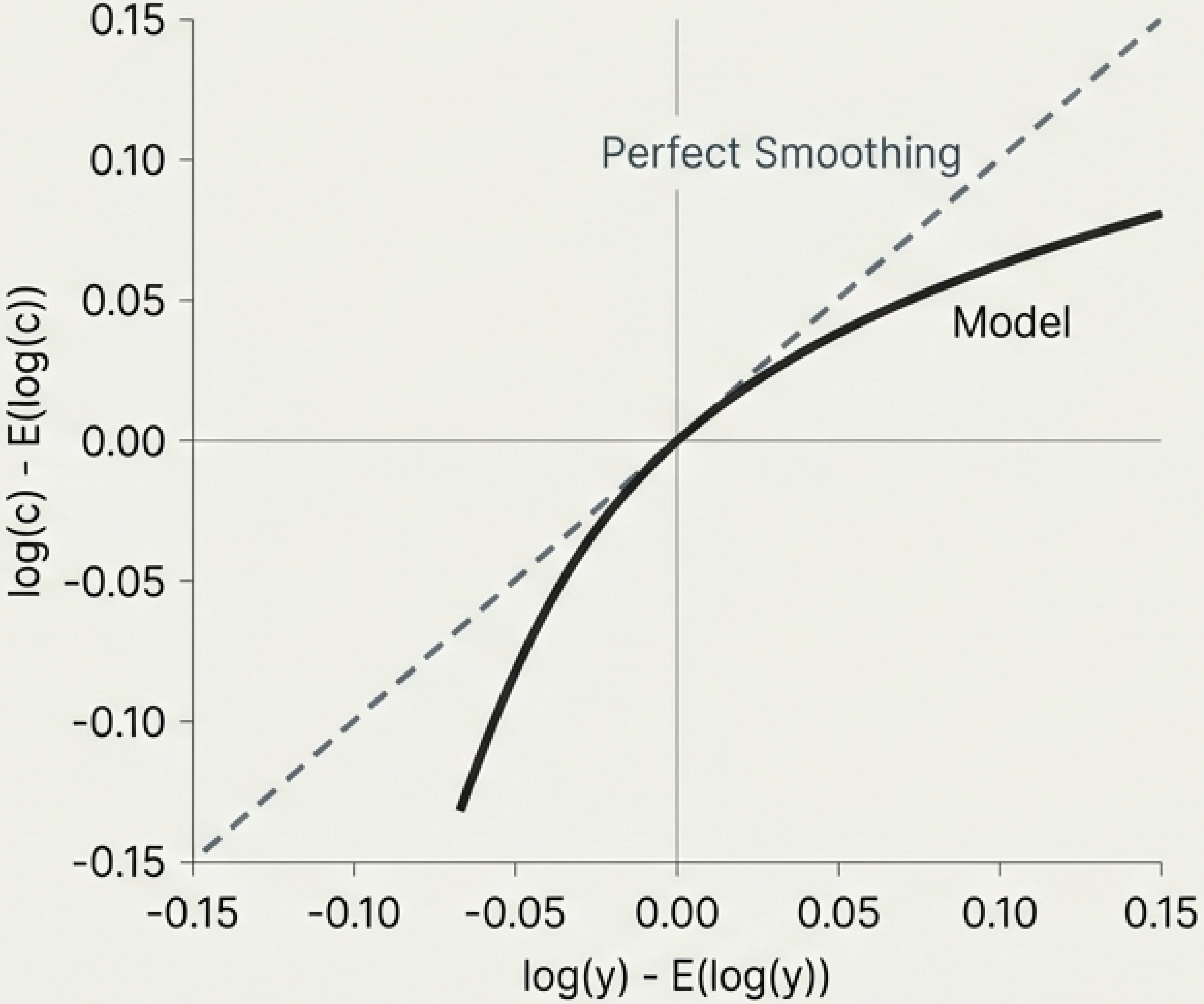


Quantitative Proof: The Mexico Case Study

Model vs. Data	Data	Model
Mean Debt-to-GDP	43%	43% ✓
Mean Spread	3.2%	3.2% ✓
Excess Volatility: $\sigma(C) / \sigma(Y)$	**1.0+**	**1.3** The model successfully replicates the puzzle.
Trade Balance Correlation (Cyclicality)	-0.6 (Countercyclical)	-0.7

The infinite-horizon model, calibrated to Mexico, reproduces the key empirical anomalies.

Why Consumption Crashes



1. **Credit Crunch:** Spreads spike when income falls (the bond price crash).
2. **Forced Repayment:** The country cannot borrow to smooth the shock. It must pay down debt or borrow significantly less.
3. **The Result:** Consumption falls harder than income (the steep slope in the chart).

NotebookLM

The Trap of Time Inconsistency

Left Self (Period T): The Promise

Wants to promise low future borrowing.

↓

To get low interest rates today.

Right Self (Period T+1): The Temptation

Incentive changes once the future arrives.

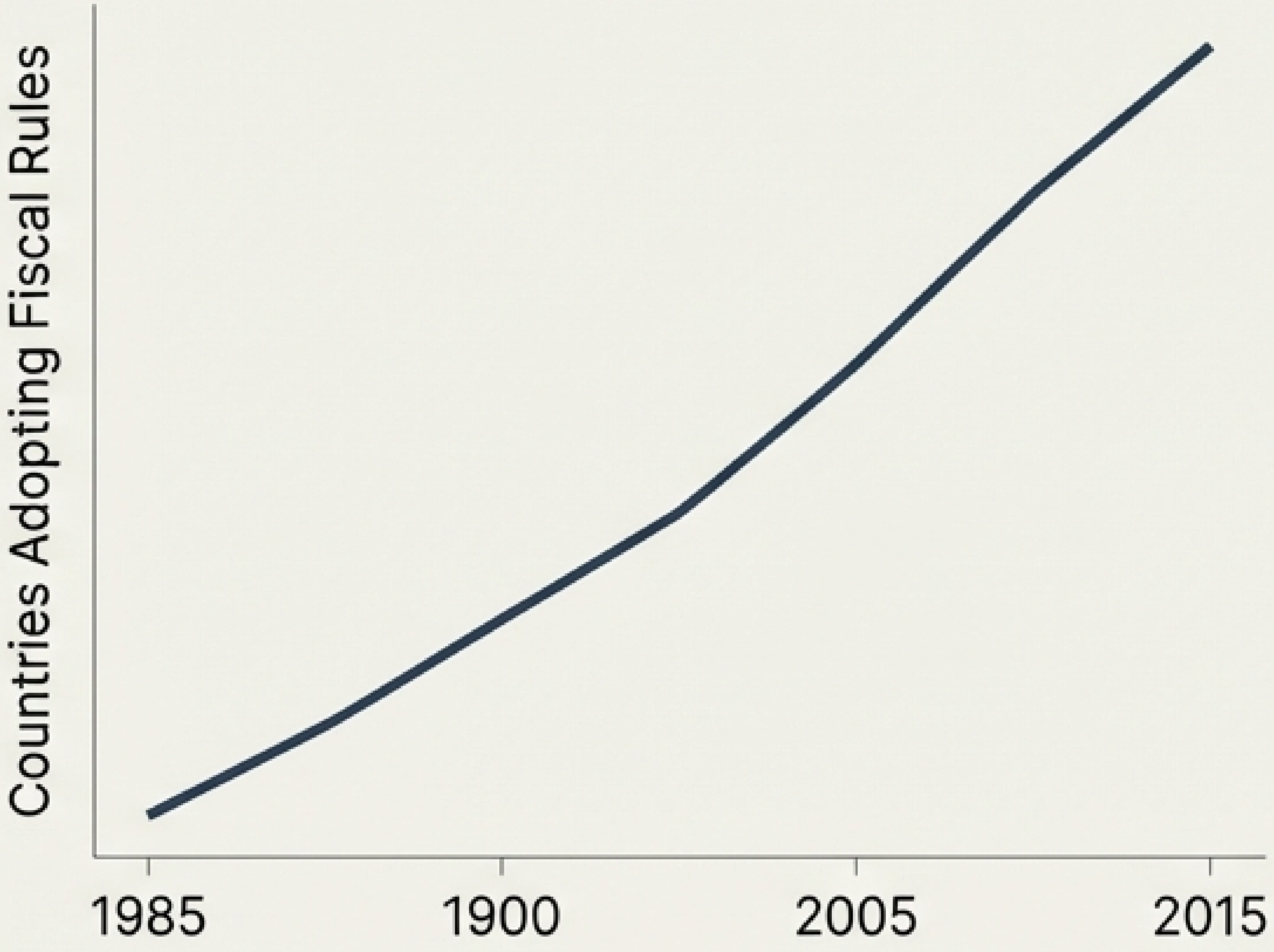
↓

Dilute existing debt by over-borrowing or **Default**.

Market Anticipation

Lenders know the promise is not credible. They price the “future bad behavior” into today’s rates, resulting in high spreads immediately.

The Remedy: Fiscal Rules as Commitment Devices



Goal: Artificial commitment to restrict the “future self”.

The Design Challenge

The Old Way: Debt Limits

Fixed caps (e.g., 60% Debt/GDP).

Problem: Too loose for risky countries, too tight for safe ones.

The Proposal: Fiscal Standards

Rules based on Spreads or Interest Payments (Furman & Summers, 2020).

Anchors policy to market reality.

The Exception: Low-Income Countries

Emerging Markets

- **Creditors:** Private Sector.
- **Rates:** Market-determined (Risk Premium).
- **Restructuring:** Haircuts (~37%).

Low-Income Countries

- **Creditors:** Official Sector (Bilateral/Multilateral).
- **Rates:** Concessional (Below market, often fixed).
- **Restructuring:** Rarely involves face-value haircuts.

Note: Increasing role of China and non-traditional lending. Risk Orange.

Summary & Key Takeaways

Endogenous Risk	Excess Volatility	Structural Solution
Sovereign rates are not fixed. They rise when income falls.	This market punishment forces procyclical repayment, amplifying consumption crashes.	Time inconsistency requires external commitment devices: Fiscal Rules tailored to country-specific risk.

"Sustainability calculations must account for the market's incentives, not just the country's budget."