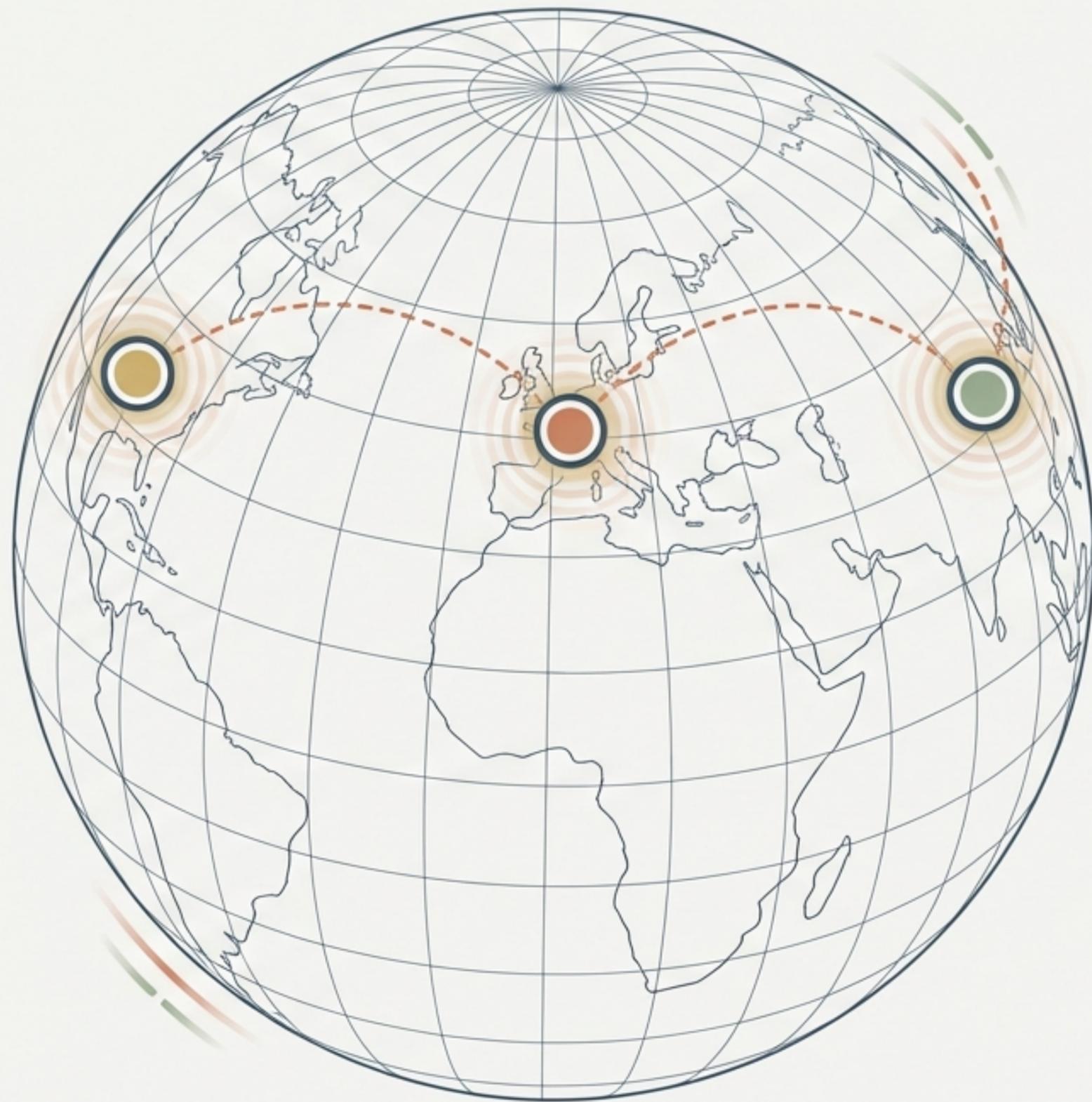


The Open Economy Puzzle: Connecting Theory to Global Realities

Insights from International Macroeconomics & The Workhorse Two-Country Model

The Context

From the GFC to Covid-19, national business cycles are driven by global shocks. This deck explores why standard economic theory fails to predict these interactions and how the "Bond Economy" model resolves the mystery.



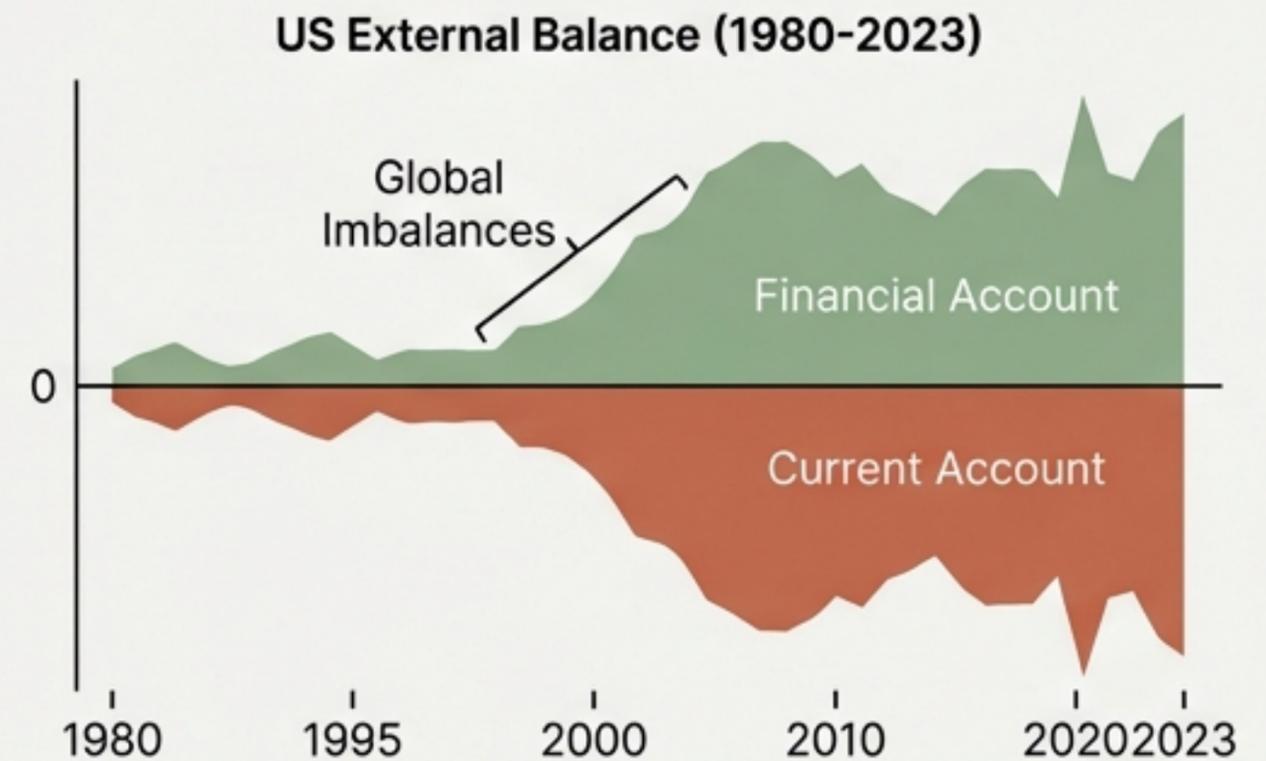
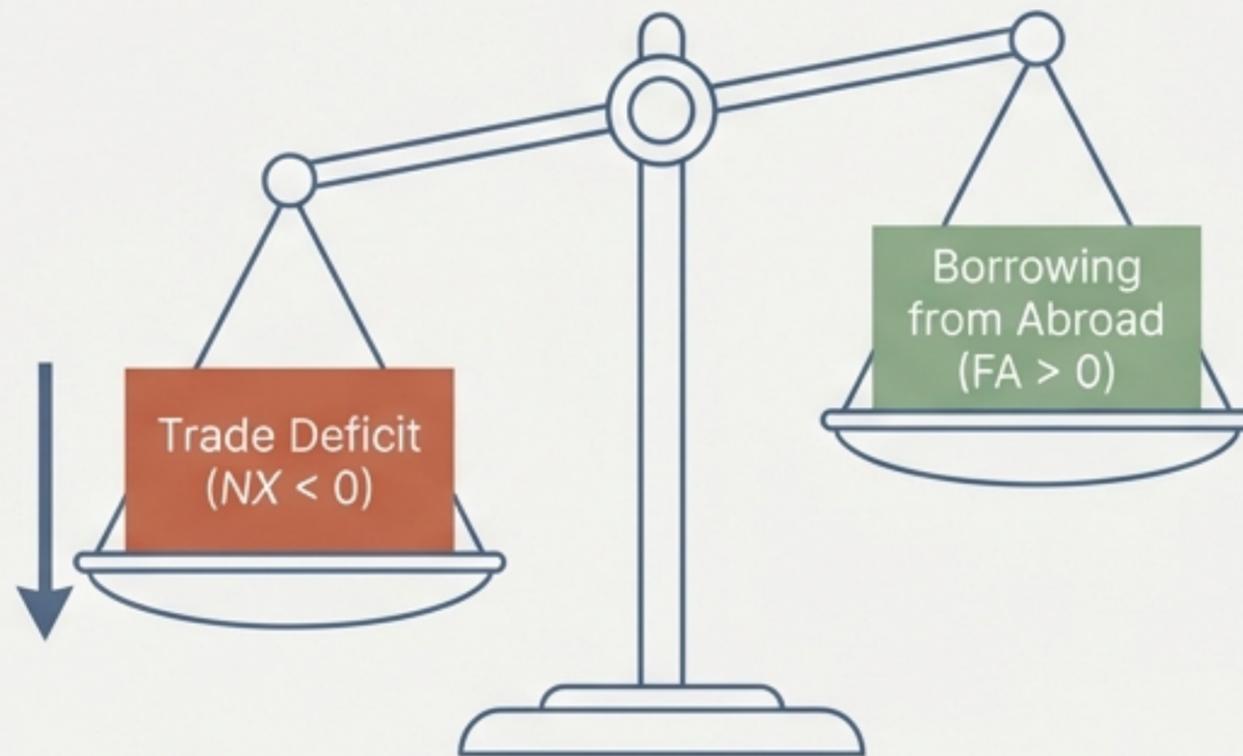
Accounting for Global Interaction via the Balance of Payments

$$\text{CA} + \text{FA} + \text{KA} = 0$$

Current Account
(Trade in Goods/Services, Net Exports)

Financial Account
(Asset Ownership, Borrowing/Lending)

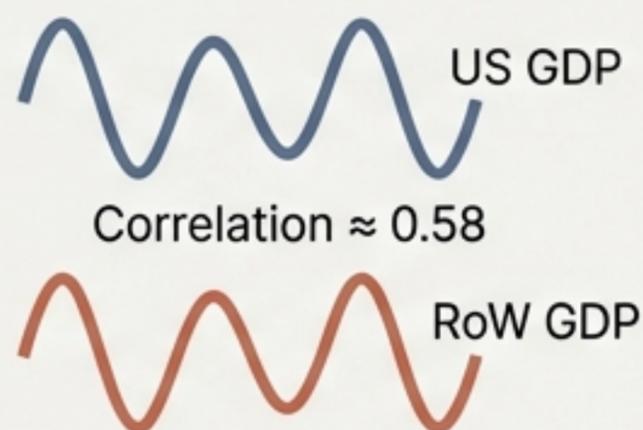
Capital Account
(Transfers, negligibly small)



How the Global Economy Actually Behaves: The Stylized Facts

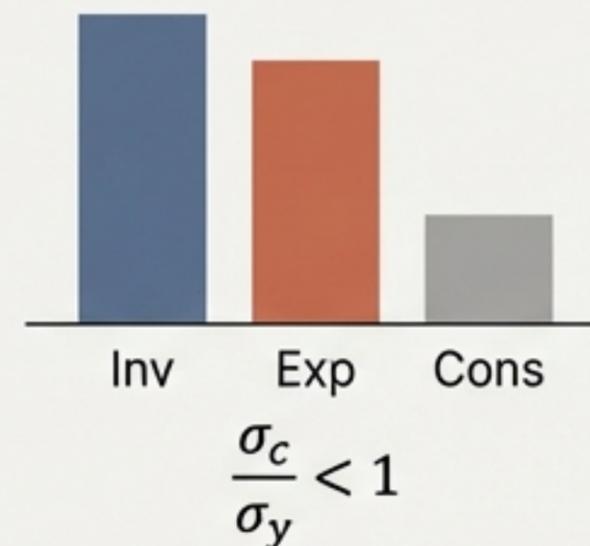
1. Synchronization

Business cycles are highly correlated across Advanced Economies (US vs. Rest of World ≈ 0.58).



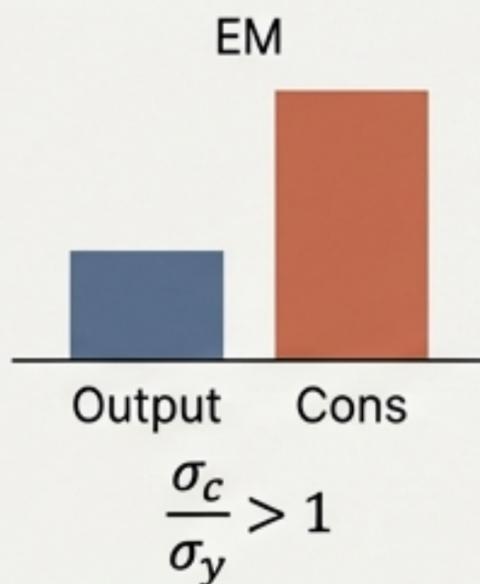
2. The Volatility Hierarchy

Investment and Exports are volatile. Consumption is smooth (less volatile than output) in Advanced Economies.



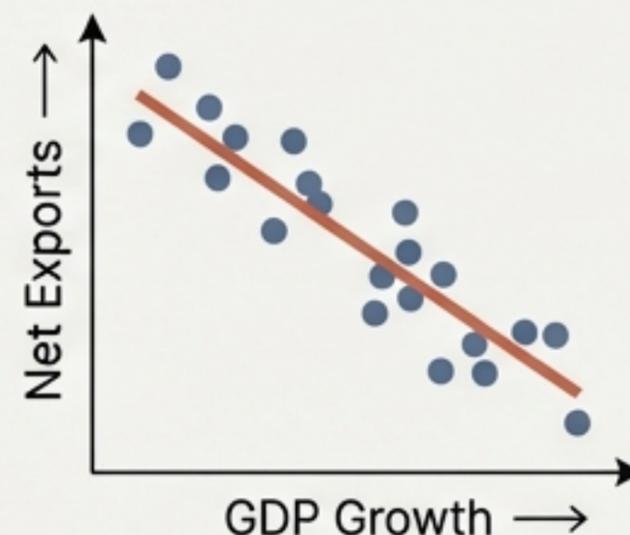
3. The Emerging Market Twist

EMs are more volatile than Advanced Economies. Crucially, EM consumption is *more* volatile than output.



4. Counter-Cyclical Balance

Trade balances deteriorate during economic booms. We import more when we grow.



Where Intuition Fails: The Major Puzzles of Open Macro

The Backus-Smith Puzzle



Theory: When goods are cheap (Weak Currency), we should buy less of them relative to foreign goods.

Reality Check

Reality: Data shows the opposite. We consume MORE when our currency is strong and goods are expensive. (Correlation ≈ -0.5).

The Feldstein-Horioka Puzzle



Theory: Capital should flow to wherever returns are highest, regardless of domestic savings.

Reality Check

Reality: Savings and Investment are highly correlated domestically. Capital doesn't move as freely as theory suggests.

The Exchange Rate Disconnect

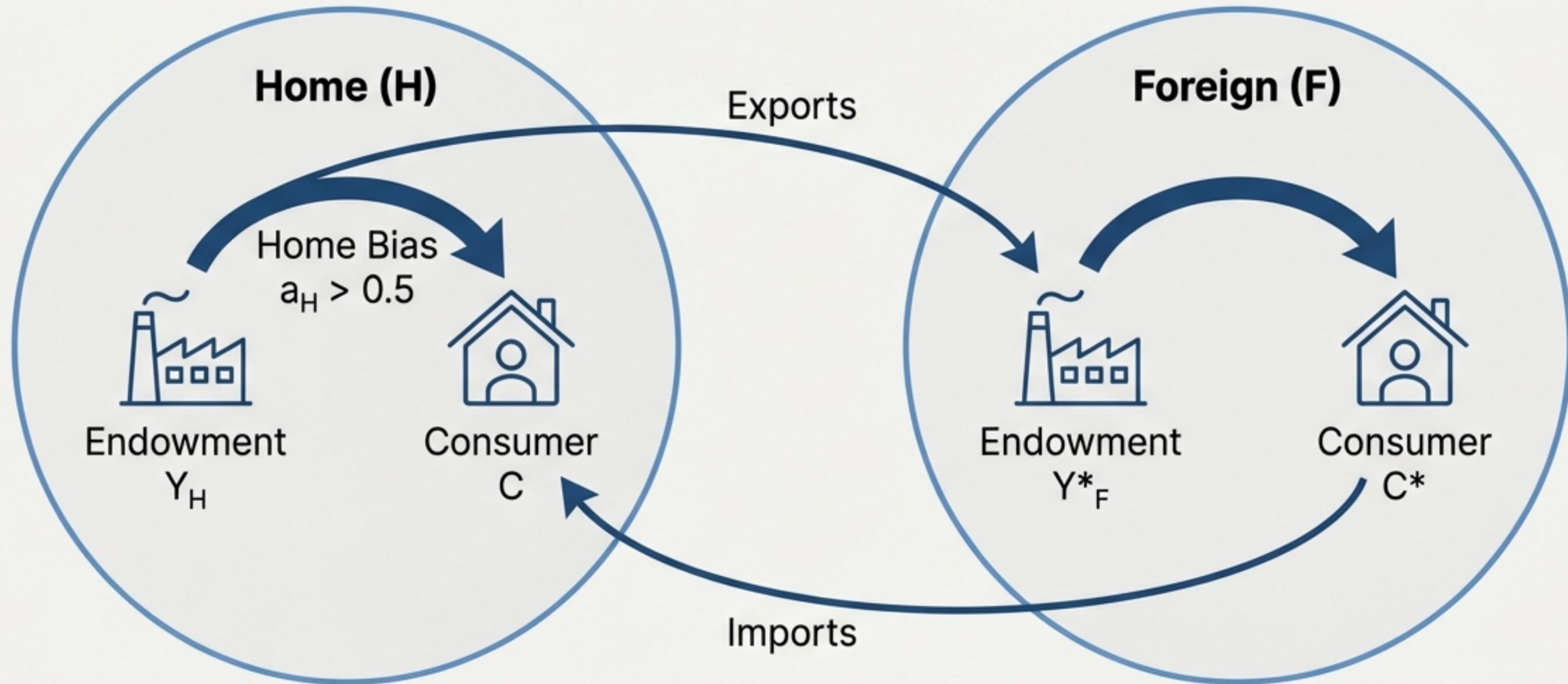


Theory: Exchange rates should track fundamentals like inflation and output.

Reality Check

Reality: Exchange rates are wildly volatile and "disconnected" from macro fundamentals (The PPP Puzzle).

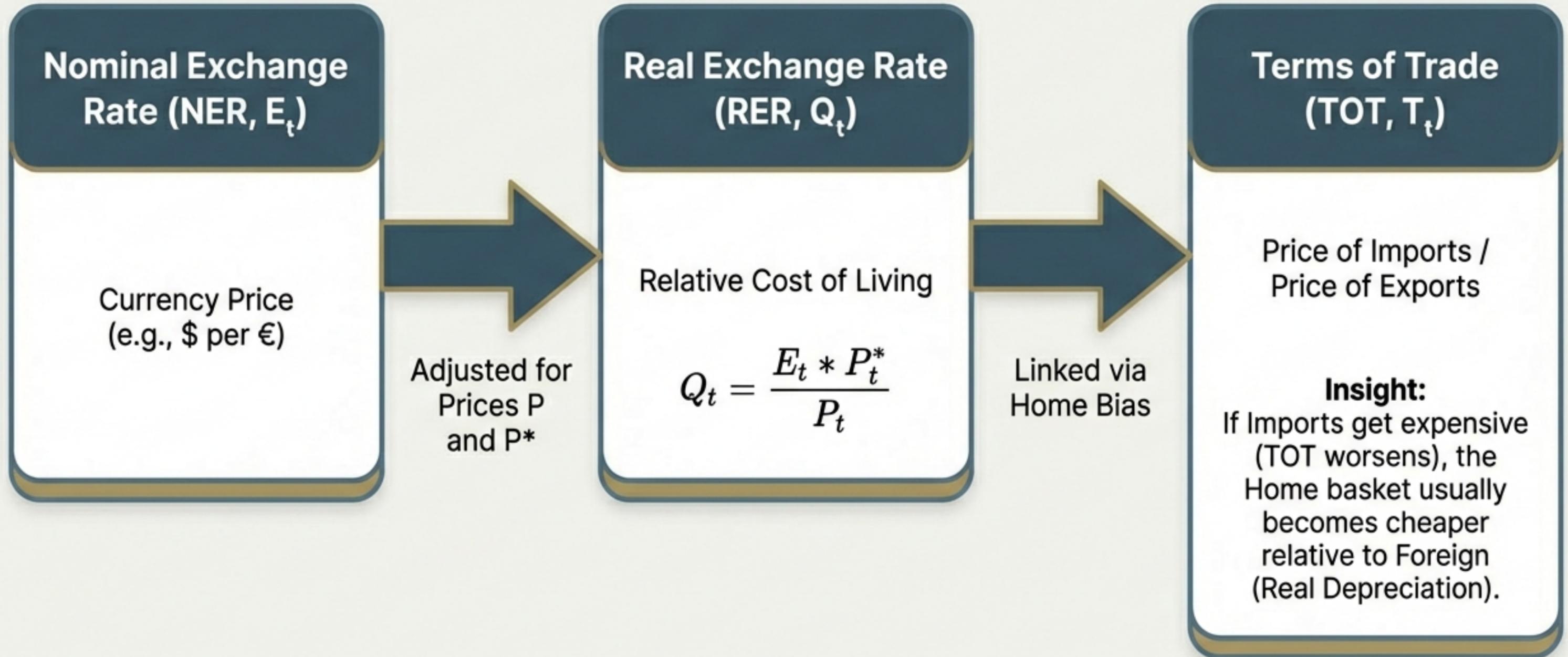
The Toolkit: The Workhorse Two-Country Model



Armington Aggregator Preference: Goods are imperfect substitutes.

$$\text{Utility: } u(C) = (C^{(1-\sigma)} - 1)/(1-\sigma)$$

The Transmission Gears: Exchange Rates and Relative Prices



The Financial Market 'Slider': Three Degrees of Risk Sharing



Financial Autarky

- **Description:** No borrowing or lending. Trade must balance every period ($NX = 0$).
- **Implication:** High Volatility. Prices adjust sharply.

Riskless Bonds Only

- **Description:** The Realistic Middle. Trade in a single asset. Borrowing is possible.
- **Implication:** Uncovered Interest Parity (UIP) holds. Wealth effects are active.

Complete Markets

- **Description:** The Theoretical Ideal. Perfect insurance for every state of the world.
- **Implication:** Risk is fully shared. RER pinned to marginal utility.

Anatomy of a Boom: Substitution vs. Wealth Effects

Scenario: A positive Productivity Shock in the Home Country (Y_H Increases)

Substitution Effect



Home goods become cheaper.

↳ World demand shifts TOWARD Home goods.

↳ **Pushing for Surplus.**

Wealth Effect



Income changes. Home produces more, but sells it for less (Terms of Trade worsen).

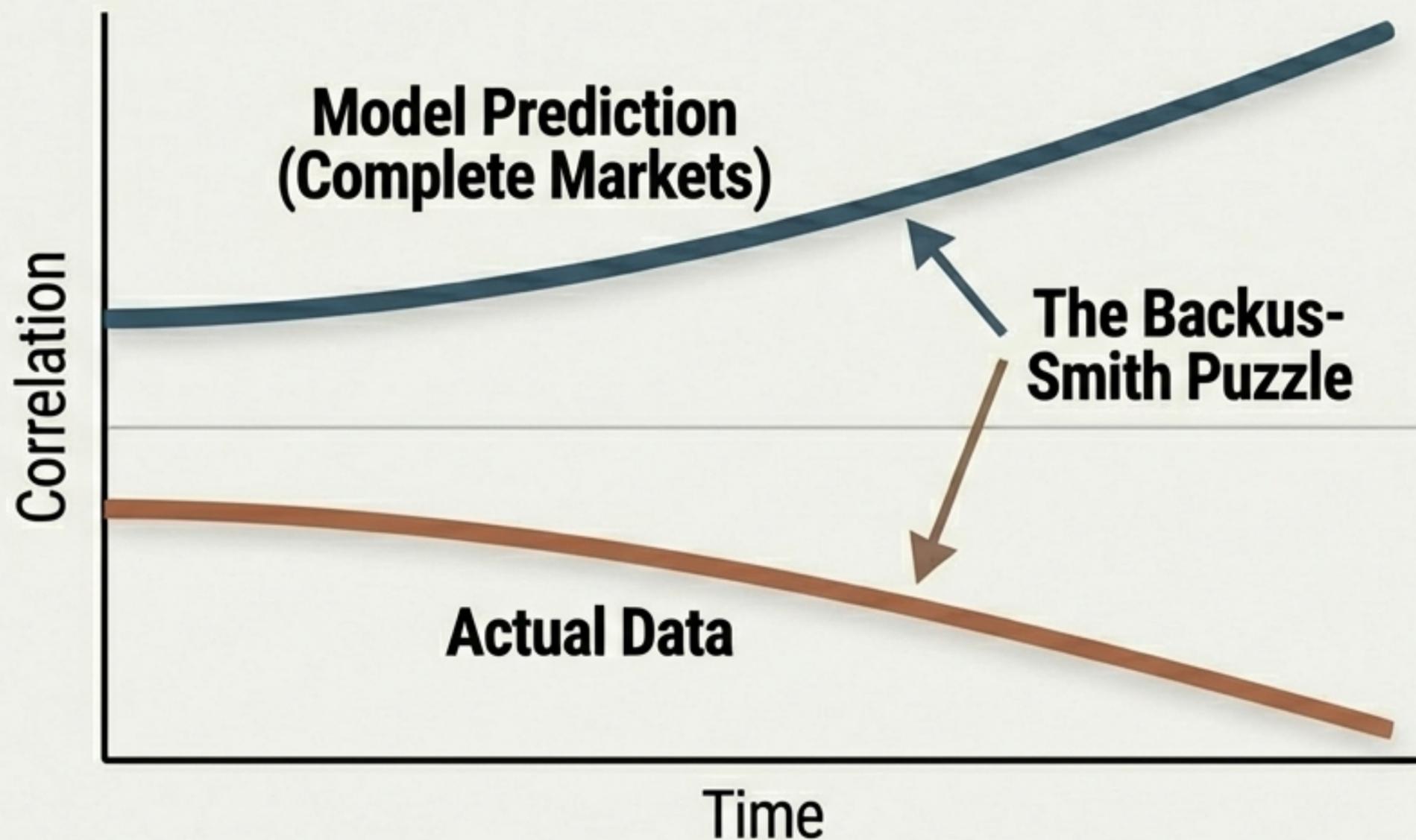
↳ Does Home feel richer or poorer? This depends on the Financial Slider.

↳ **Pushing for Deficit (Consumption).**

The Tug-of-War:
Relative Demand = Wealth Term + Substitution Term

Scenario A: The Failure of Complete Markets

Why perfect insurance is mathematically elegant but empirically wrong.



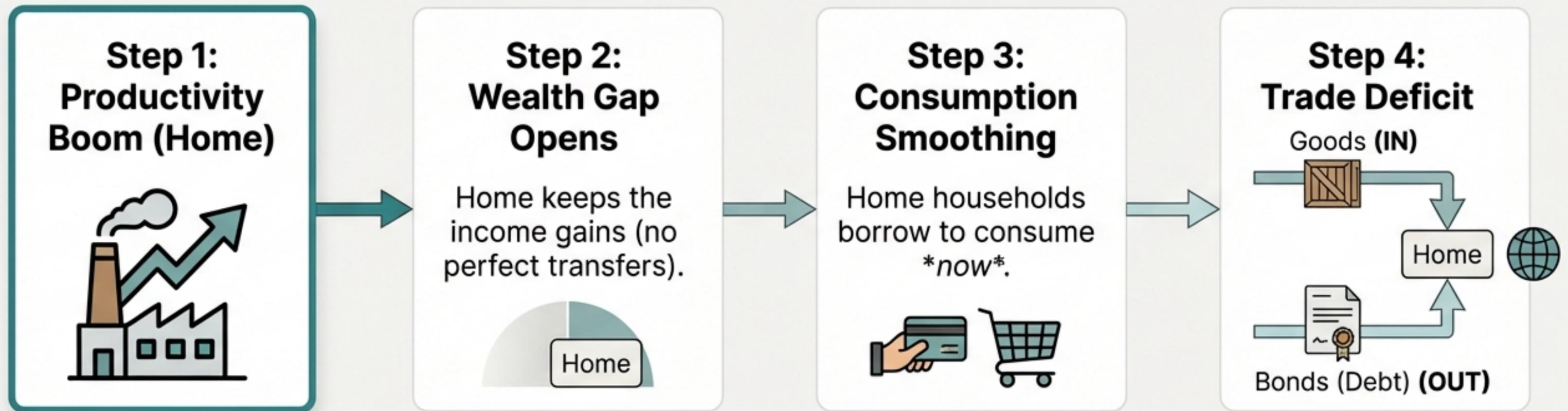
The Mechanism:

Under Complete Markets, wealth is transferred to Foreign to equalize utility.

Result: Home Consumption rises *less* than Output.

This contradicts reality.

Scenario B: The “Bond Economy” & The Return of Wealth Effects Headline



In the Bond Economy, the Wealth Effect overrides the Substitution Effect.
Home feels richer and borrows against future income.

Reconciling the Data: The Backus-Smith Solution



Visual Proof: Matching the Stylized Facts

Impulse Responses to a Home Productivity Shock

Complete Markets (The Fail)

Chart 1. Output

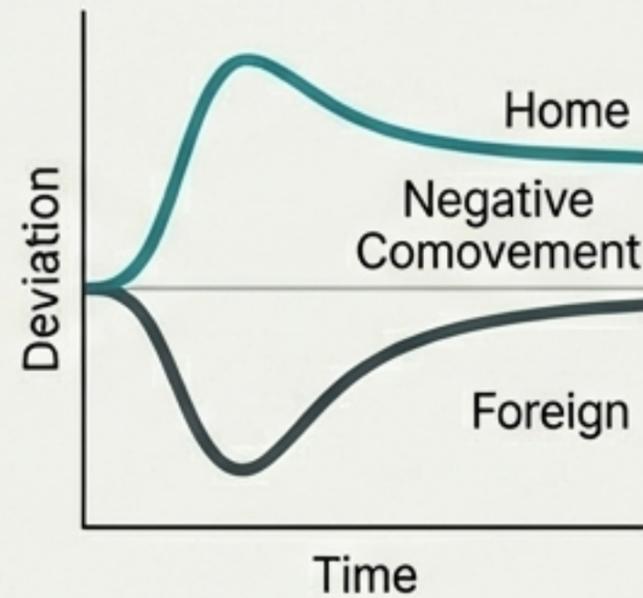
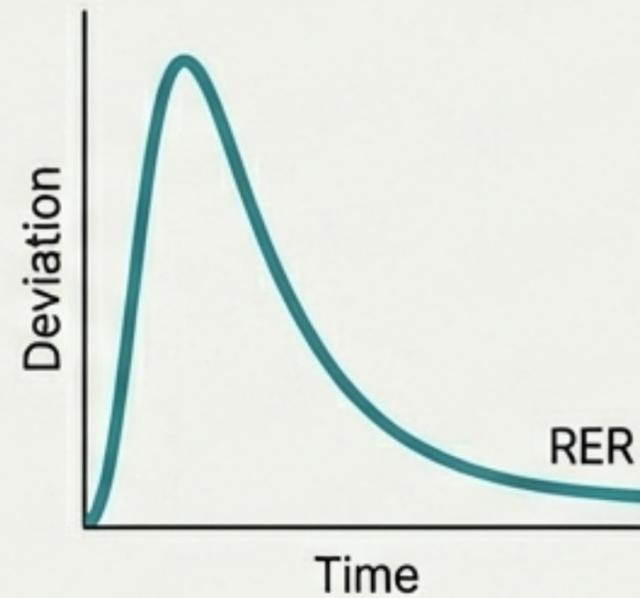


Chart 2. Real Exchange Rate



Bond Economy (The Success)

Chart 1. Output

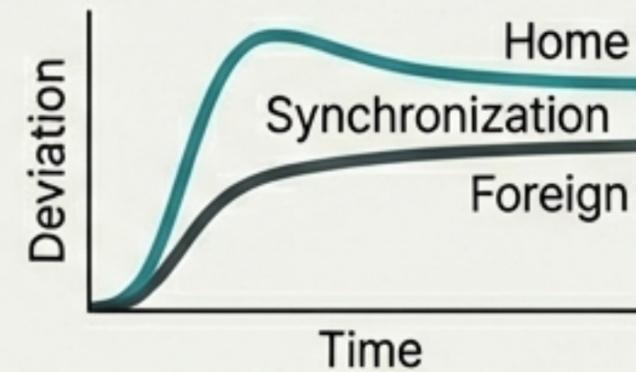


Chart 2. Net Exports

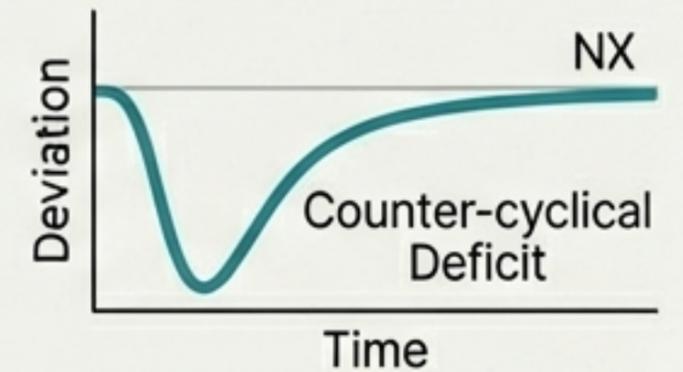
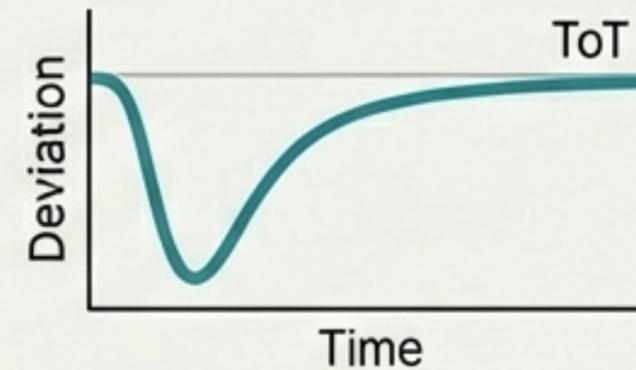


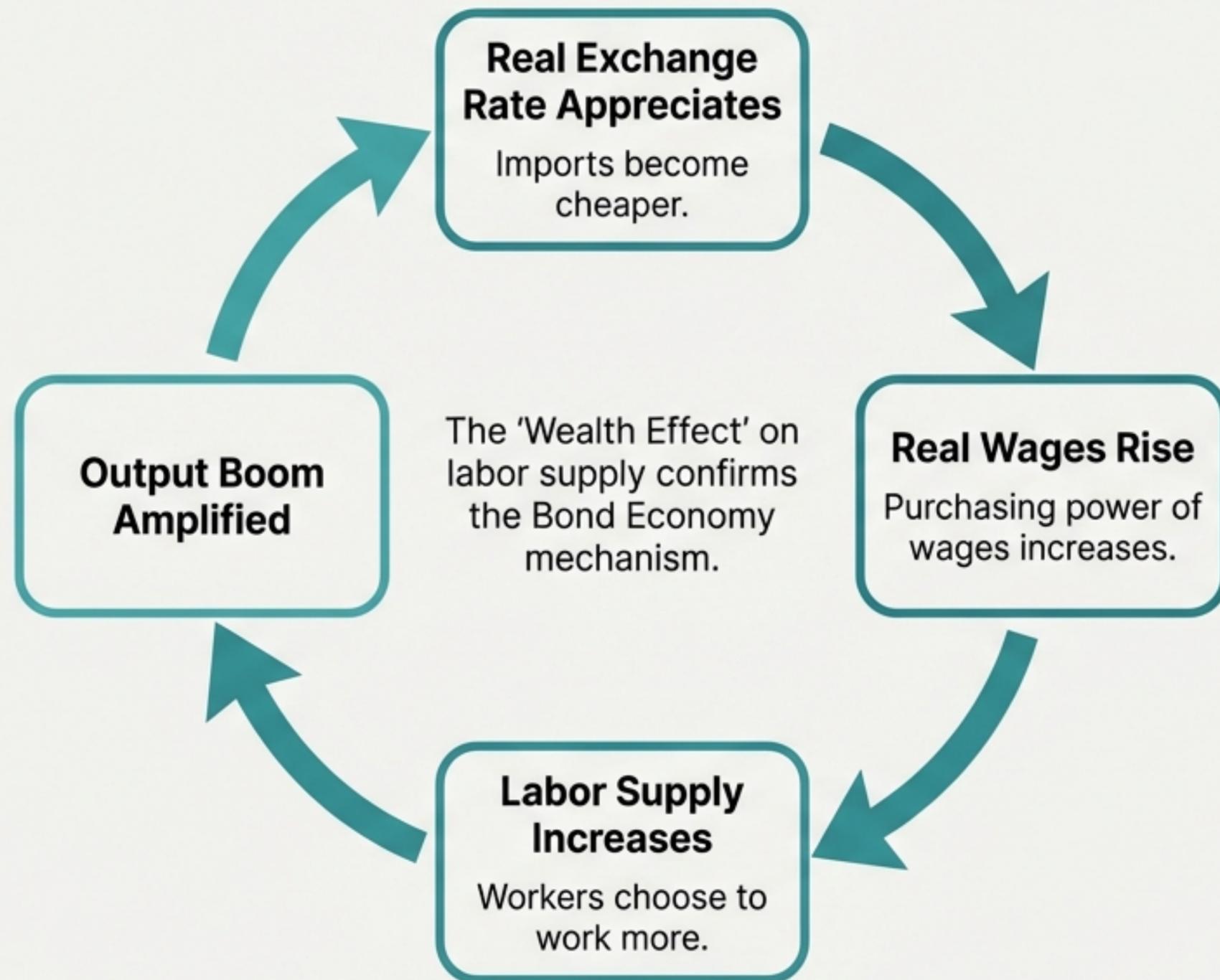
Chart 3: Terms of Trade



✓ **Matches Empirical Reality.**

The Production Economy Extension

Adding Labor Supply Amplifies the Cycle



What We Learned: The Ingredients of Reality

✓ 1. Markets are Incomplete

Modeling the world with perfect risk-sharing leads to false predictions. We cannot perfectly insure against country-specific shocks.

✓ 2. Wealth Matters

Income fluctuations (Wealth Effects) often override price Substitution Effects in the real world.

✓ 3. Frictions are Essential

To model reality, we must assume financial frictions (Bonds only) and Home Bias ($\alpha_H > 0.5$).

✓ 4. Persistence is Key

Agents react to *anticipated* future income. 'News' about future productivity drives current deficits and appreciation.

Beyond the Standard Model: The Future of Open Macro

The Workhorse Bond Economy model successfully bridges the gap between theory and the major puzzles.

However, new frontiers remain.

The Mussa Puzzle

Nominal Exchange Rates are extremely volatile.
Solution: Integrating Nominal Rigidities (New Keynesian Frameworks).

Financial Frictions

The 'Exorbitant Privilege' of the US Dollar.
Solution: Modeling global intermediaries and granular financial flows (Gabaix & Maggiori).

Understanding the global economy requires accepting that imperfections are what drive the **flow of wealth**.