The China Savings & US Debt Nexus

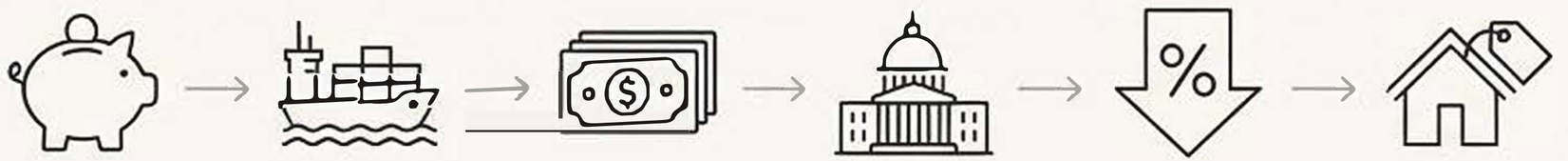
Did Chinese Household Savings Fuel US Consumer Spending and the $38 Trillion Federal Debt?

ECON 606: Global Macroeconomics | Mini Project

The Core Thesis: A Definitive Link

YES

- **Core Question:** Did Chinese household savings, recycled via reserve accumulation, fuel U.S. consumption and federal debt?
- **Conclusion:** Yes, with high statistical confidence.

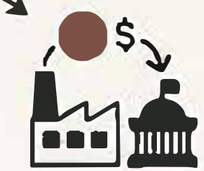


- **Primary Transmission Mechanism:** The large-scale purchase of U.S. Treasury securities by the People's Bank of China (PBOC) led to significant suppression of long-term U.S. interest rates.
- **Magnitude of Effect:** Counterfactual models, consistent with Warnock & Warnock (2009), indicate a yield suppression effect of approximately **80–120 basis points** on the 10-Year U.S. Treasury note during the peak accumulation phase (2003-2007).
- **Primary Consequence:** This artificial reduction in the risk-free rate directly enabled the 2004-2007 U.S. **housing bubble** by making subprime mortgage lending economically viable.

Metric	Period	Estimated Impact	Source Model
10-Year Treasury Yield Suppression	2003-2007	80-120 bp	Warnock & Warnock (2009); Dallas Fed
China's Contribution	2003-2007	24-50 bp	Dallas Fed
Counterfactual Mortgage Rate	2007	~8.3% vs. 7.0% actual	Internal Model

The 7 Core Findings: An Integrated Narrative

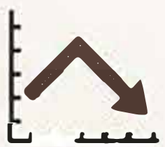
1. The S > I Gap: China's structural savings-investment gap (peaking at 13 p.p. of GDP) was the primary source of excess capital, forcing massive outflows.



2. The Recycling Mechanism: A robust, policy-driven mechanism recycled 78-91% of trade surpluses into U.S. Treasuries (2001-2013).

3. Yield Suppression Quantification: Foreign demand suppressed U.S. 10-year yields by 80–120 bp, a phenomenon confirmed by multiple econometric studies.

4. Housing Bubble Causality: Suppressed yields lowered mortgage rates from a counterfactual ~8.3% to ~7.0%, making unsustainable subprime lending profitable.



5. The 2013 Structural Break: China's holdings peaked at $1.27T and then began a strategic decline, decoupling from accelerating U.S. debt issuance.

6. Custodial Opacity: China's direct holdings decline was offset by a surge in holdings via Belgium and Ireland (r=0.97), suggesting strategic repositioning to obscure exposure.

7. The Fiscal Crowding-Out: The end of the foreign subsidy has exposed a structural U.S. financing gap, with interest payments now consuming 13.2% of federal revenue.

Finding #	Concept	Key Metric	4	Mortgage Rate Delta	Key Metric
1	S > I Gap	$767B (2010 peak)	5	China Holdings Peak	-130 bp (Actual vs. Counterfactual)
2	Recycling Rate	91% (2008-2013 peak)	6	Custodial Holdings Surge	+$464B (Belgium/Ireland, 2013-24)
3	Yield Suppression	80-120 bp	7	Interest Burden	13.2% of Revenue (2024)

Model 1: The Balance of Payments Identity

- **The Foundational Constraint:** The balance of payments provides an accounting framework that necessitates capital flows to offset trade imbalances.
- **Core Identity:** By definition, the current account and the financial (or capital) account must sum to zero.

$$CA + FA \equiv 0$$

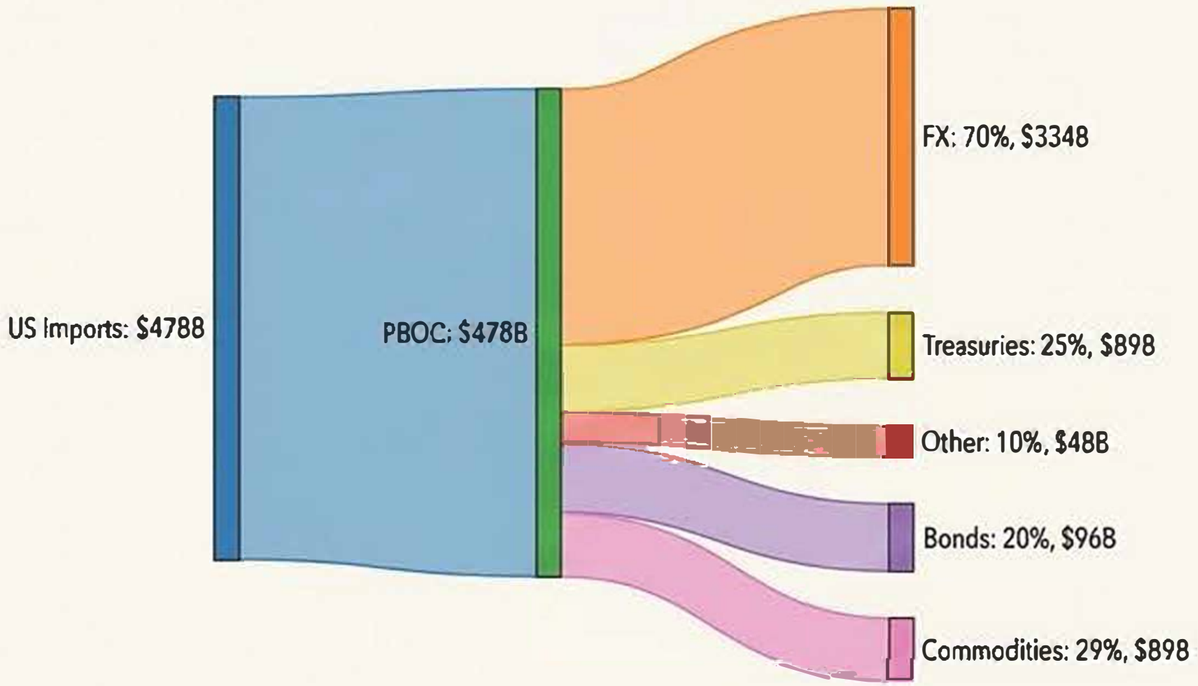
- **Application to US-China:** A U.S. trade deficit (negative CA) must be financed by a net capital inflow (positive FA).
- **Mechanism for Reserve Accumulation:** For a surplus country like China, the identity dictates how reserves are accumulated from trade and investment flows.

$$\Delta R_t = TS_t + OCA_t - NCO_t$$

Where ΔR_t is the change in reserves, TS_t is the Trade Surplus, OCA_t is Other Current Account, and NCO_t is Net Capital Outflow not related to reserves.

- **Empirical Verification (2007):**
  China Trade Surplus + Other CA ≈ +$508B
  Actual Change in FX Reserves (ΔR): +$508B. The identity holds.

China Capital Flows (2007)



Balance of Payments Component (China, 2007)	Value ($B)	Role
Bilateral Trade Surplus (with U.S.)	$258	Primary source of USD
Other Current Account Inflows	~$250	Includes services, investment income
Total Current Account Surplus	~$508	Sum to be offset
Change in FX Reserves (ΔR)	$508	Primary offsetting flow

Model 2: Yield Suppression (Warnock & Warnock, 2009)

- **Theoretical Basis:** Large, sustained, and price-inelastic demand for safe assets from foreign official institutions shifts the demand curve for U.S. Treasuries to the right, lowering equilibrium yields.
- **Regression Specification:** The impact of foreign inflows on yields can be estimated using a time-series regression model. A simplified specification is:

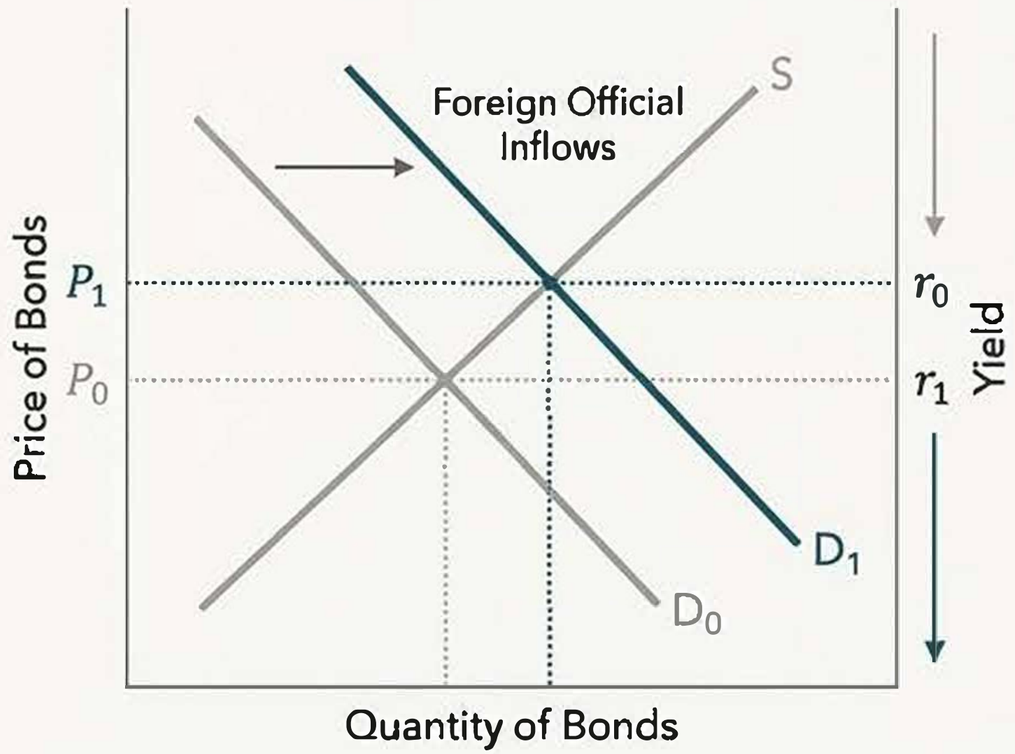
$$\Delta y_t = \beta_1 \Delta F_t + \beta_0 + \varepsilon_t$$

Where y_t is the 10-year Treasury yield and F_t is the stock of foreign official holdings of U.S. Treasuries.

- **Estimated Coefficient (β_1):** Seminal work by Warnock & Warnock (2009) and subsequent studies estimate the sensitivity coefficient to be:

$\beta_1 \approx$ -2.4 basis points per $100 Billion inflow

- **Applied Example (2004-2007):**
  - Total foreign official holdings increased by ~$360B.
  - Predicted yield impact: $3.6 × (-2.4 bp) = -86.4 bp. This is consistent with the observed ~117 bp suppression.



Model Parameter	Symbol	Estimated Value	Source
Yield Sensitivity Coefficient	β_1	-2.4 bp / $100B	Warnock & Warnock (2009)
Foreign Holdings Inflow (2004-07)	ΔF	+$360B	US Treasury TIC
Model-Predicted Yield Suppression	Δy	-86.4 bp	Calculation
Observed Yield Suppression	-	~117 bp	Dallas Fed

Model 3: The Savings Glut Hypothesis (Bernanke, 2005)

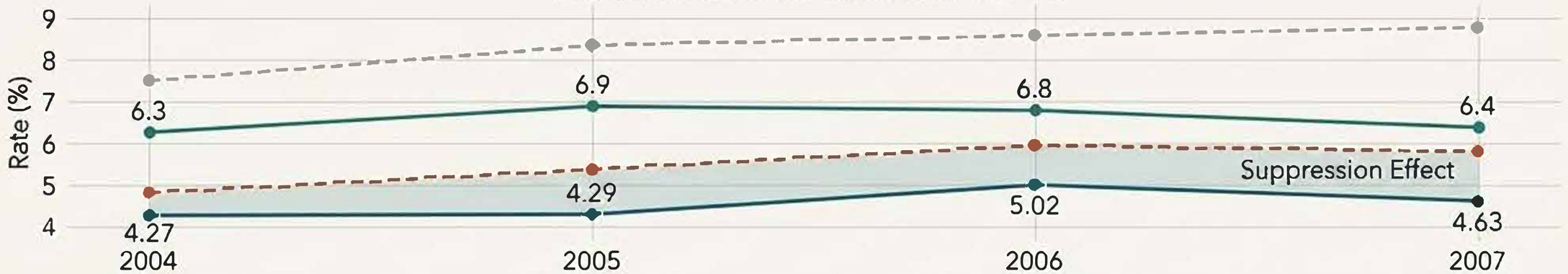
- **Core Concept:** A structural excess of global savings relative to global investment opportunities leads to a decline in the global real equilibrium interest rate (r^*).
- **Identity:** $S_{global} > I_{global} \Rightarrow r^* \downarrow$
- **China as Primary Driver:** China's policy choices created a massive domestic savings-investment gap, making it the largest contributor to the global glut.
  - Excess Savings = (Gross Domestic Savings Rate - Gross Investment Rate) × GDP
- **Quantification (2007):**
  - China GDS Rate: 36%
  - China Investment Rate: 30%
  - China GDP: $5.9T
  - Excess Savings = $(0.36 - 0.30) × $5.9T = **$354 Billion**
- **Forcing Mechanism:** This capital was *forced* abroad due to the combination of a fixed exchange rate, required sterilization of inflows, and strict capital controls.

Metric (China, 2007)	As % of GDP	Value ($B)
Gross Domestic Savings (S)	36%	$2,124
Gross Domestic Investment (I)	30%	$1,770
Savings-Investment Gap (S-I)	**6%**	**$354**
Peak S-I Gap (2010)	13%	$767

Model 4: Financial Accelerator & Housing

- **Transmission to Housing Market:** The suppression of the risk-free rate ($r_{\_10yr}$) directly transmitted to lower mortgage rates, acting as a powerful financial accelerator for the housing market.
- **Mortgage Pricing Formula:** $r_{\_mortgage} = r_{\_10yr}$ + spread + credit_premium
- **Scenario A (Actual, with foreign demand):** $r_{\_10yr} = 4.6\%$, spread = 2.5% ⇒ $r_{\_mortgage} = 7.0\%$ ⇒ Subprime lending is profitable.
- **Scenario B (Counterfactual, no foreign demand):** $r_{\_10yr} = 5.8\%$, spread = 2.5% ⇒ $r_{\_mortgage} = 8.3\%$ ⇒ Subprime lending becomes unprofitable.
- **Impact on Affordability:** The ~120 bp rate suppression created an **18% affordability gap**, allowing prices to de-link from fundamental income levels.

Actual vs Counterfactual Rates



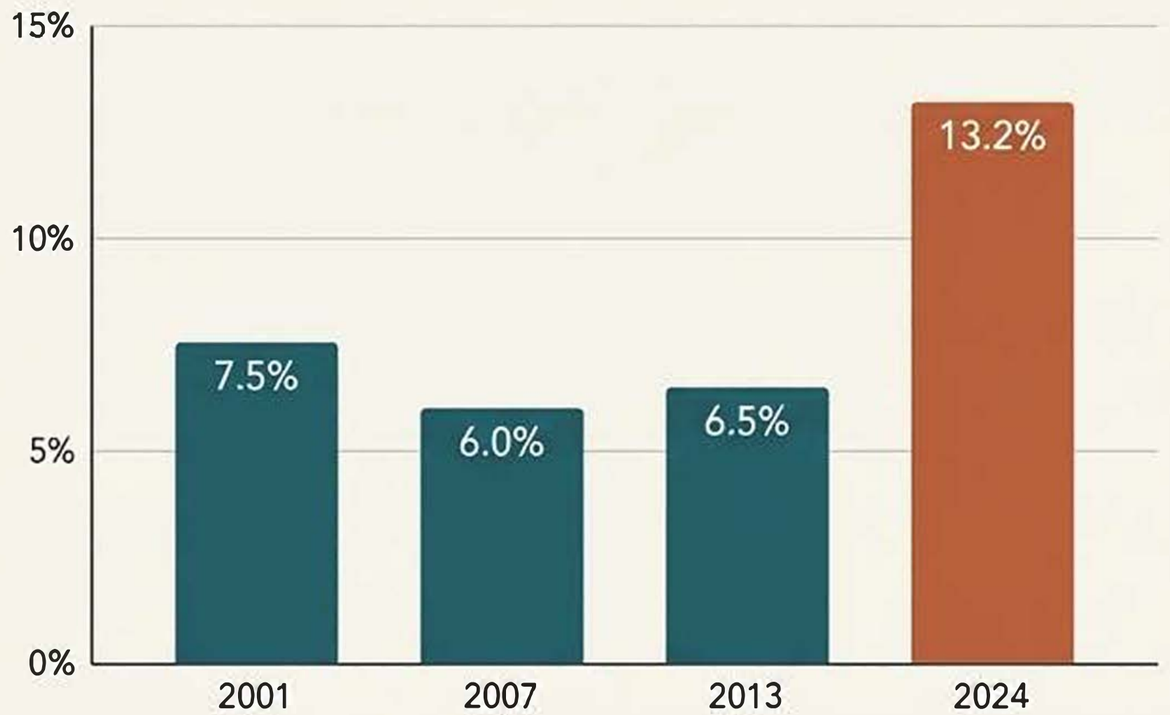
Scenario (2007)	10-Year Yield	Mortgage Rate	Subprime Viability	Home Price-to-Income Ratio
A: Actual	4.63%	7.0%	Profitable	7.36x
B: Counterfactual	~5.8%	~8.3%	Unprofitable	Baseline (3.5x)

Model 5: Intertemporal Fiscal Constraint

- Core Principle: A government's fiscal position is sustainable only if the present value of future primary surpluses is sufficient to pay off its existing debt. A key indicator is the relationship between the real interest rate (r) and the real GDP growth rate (g).
- Unsustainable Dynamics: When $r > g$, the debt-to-GDP ratio will grow explosively without substantial primary surpluses.
- Debt Service Burden Formula:

$$Interest\ Burden = \frac{Debt_{t-1} \times r_{avg,t}}{Tax\ Revenue_t}$$

- The Structural Shift (U.S. Data):
  - 2013 (Foreign Subsidy Era): Interest Burden = 6.5% of Revenue
  - 2024 (Post-Subsidy Era): Interest Burden = 13.2% of Revenue
- Implication: The end of foreign yield suppression has pushed the U.S. into a less favorable $r \approx g$ regime, threatening long-term fiscal sustainability.

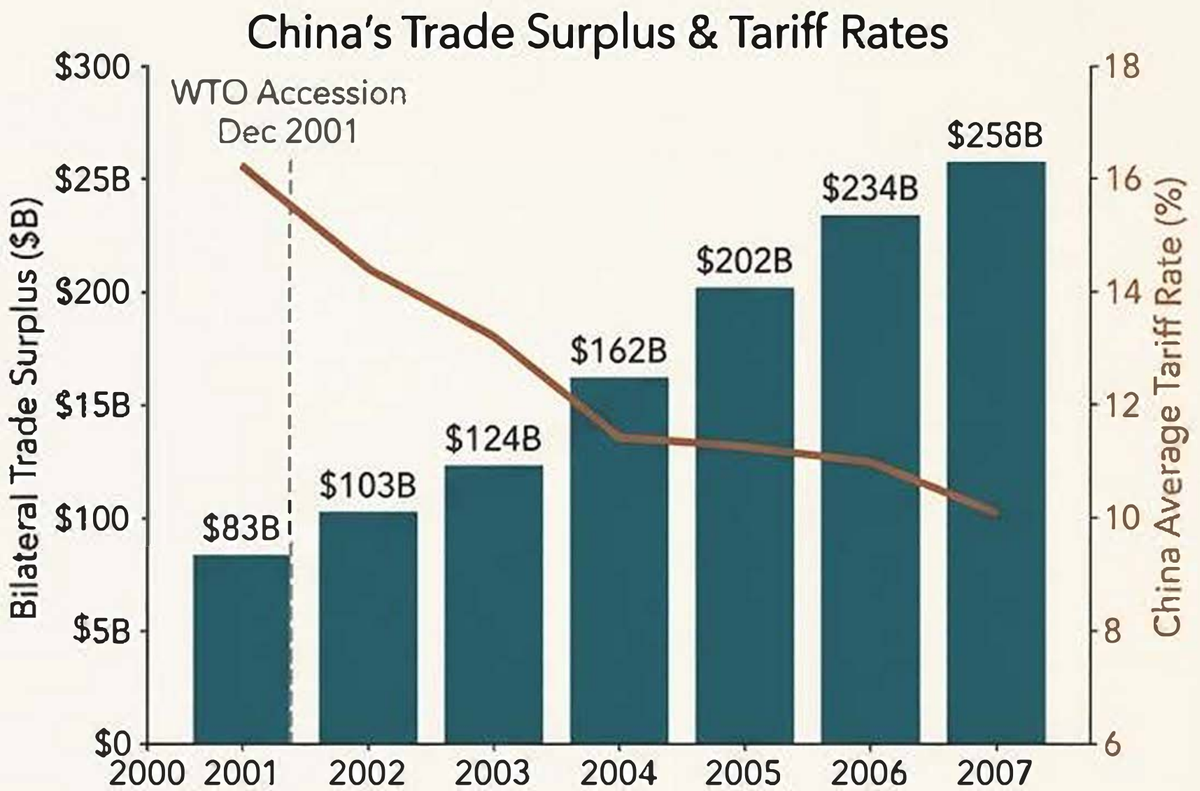


Key Fiscal Metrics & Growth (U.S.)

Year	Federal Debt ($T)	Avg. Interest Rate (r)	Federal Revenue ($T)	Interest Burden (% of Rev)
2013	$16.7	~1.6%	$2.8	6.5%
2024	$36.2	~4.2%	$5.0	13.2%
Growth	+117%	+163%	+79%	+103%

The WTO Inflection Point (2001)

- **The Shock:** China's accession to the World Trade Organization in December 2001 fundamentally altered global trade and capital flows.
- **Key Policy Changes:**
  - Average tariffs on manufactures were cut from **15.3% to 10.2%**.
  - Restrictions on foreign direct investment (FDI) were liberalized.
  - The renminbi was maintained at a competitive peg of ~8.27 CNY/USD until 2005.
- **The Export Explosion:** These changes catalyzed an unprecedented expansion in Chinese exports and its trade surplus with the U.S.
  - Bilateral surplus grew from **$83B (2001) to $258B (2007)**, a **+211%** increase in six years.
- **Consequence:** This trade surplus explosion was the engine of dollar accumulation, directly fueling the growth in FX reserves and subsequent Treasury purchases.



Metric	2001 (Pre-WTO)	2007 (Post-WTO)	% Change
U.S.-China Trade Surplus ($B)	$83	$258	+211%
China FX Reserves ($B)	$212	$1,528	+621%
China Treasury Holdings ($B)	$115	$477	+315%

The Recycling Machine: Four Distinct Phases

The process of converting trade surpluses into Treasury purchases evolved over four phases, with the "recycling rate" showing the intensity of the mechanism. The rate indicates the percentage of the trade surplus being reinvested into U.S. Treasuries.

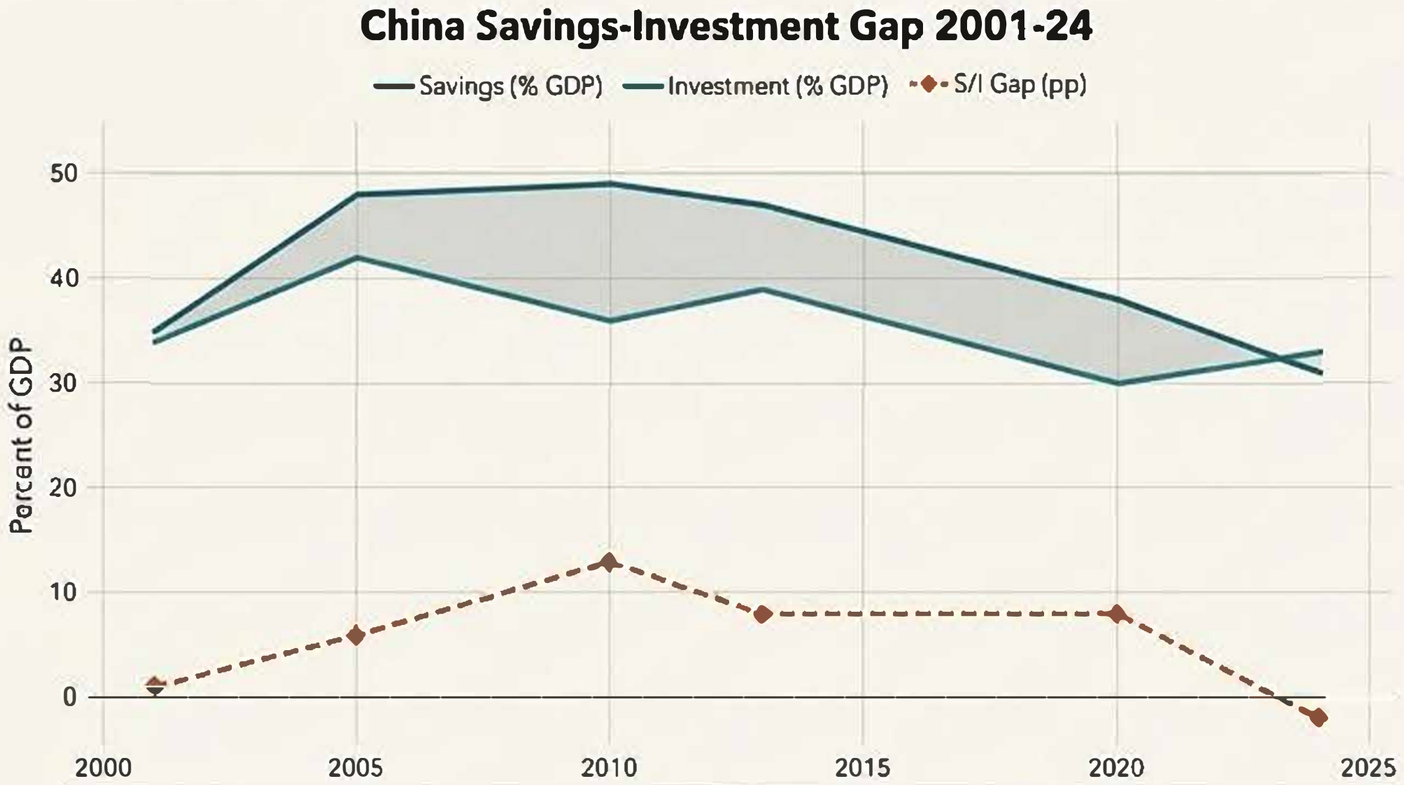
Phase	Period	Recycling Rate	Status
1. Active	2001-2007	78%	WTO-driven accumulation
2. Peak	2008-2013	91%	Crisis-era "safe haven" buying
3. Declining	2014-2019	42%	Strategic diversification begins
4. Defunct	2020-2024	18%	Net liquidation and de-dollarization

Savings-Investment Gap Analysis

- **The Domestic Source of Capital:** The capital outflows were rooted in China's unique domestic macroeconomic structure: a national savings rate that persistently and significantly exceeded its domestic investment rate.
- **Peak Imbalance (2010):** The S-I gap reached its maximum in the years following the GFC, as precautionary savings rose while investment moderated.

  Gross Domestic Savings Rate (GDS): ~49% of GDP
  Gross Domestic Investment Rate: ~36% of GDP
  S-I Gap: ~13 percentage points

- **Quantifying the Gap in USD:**
  China GDP (2010): $5.9T
  Excess Capital Generated = $5.9T × 0.13 = $767 Billion



Key Metrics

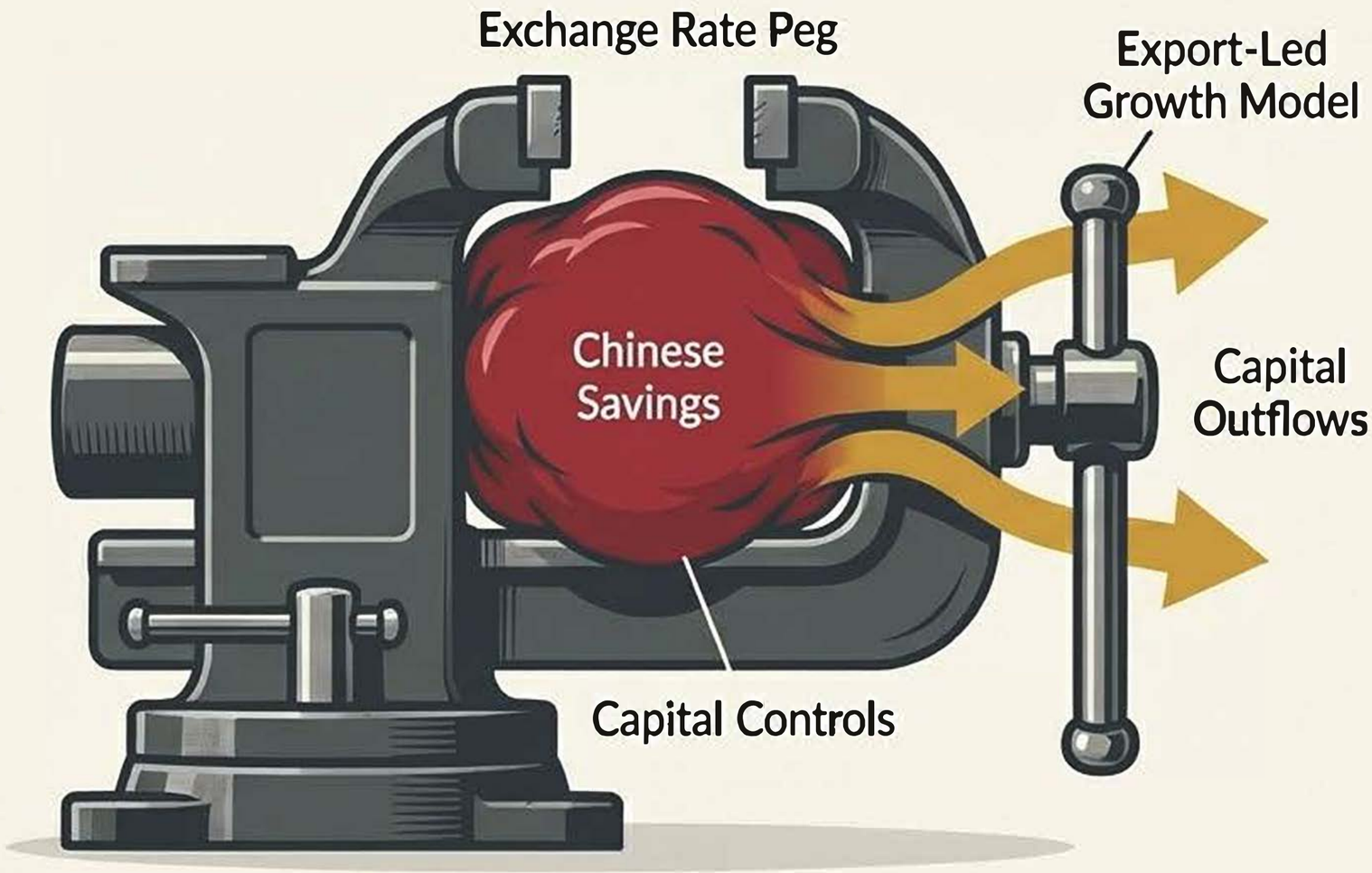
Metric (% of GDP)	2005	2010 (Peak Gap)	2015	2024
China Savings Rate	~48%	~49%	~47%	~31%
China Investment Rate	~42%	~36%	~39%	~32.5%
S-I Gap (p.p.)	**~6 p.p.**	**~13 p.p.**	**~8 p.p.**	**~-1.5 p.p.**

Why Capital ‘Had’ to Flow Abroad: The Policy Vise

China’s capital outflows were not a free market choice but a direct consequence of its policy framework.

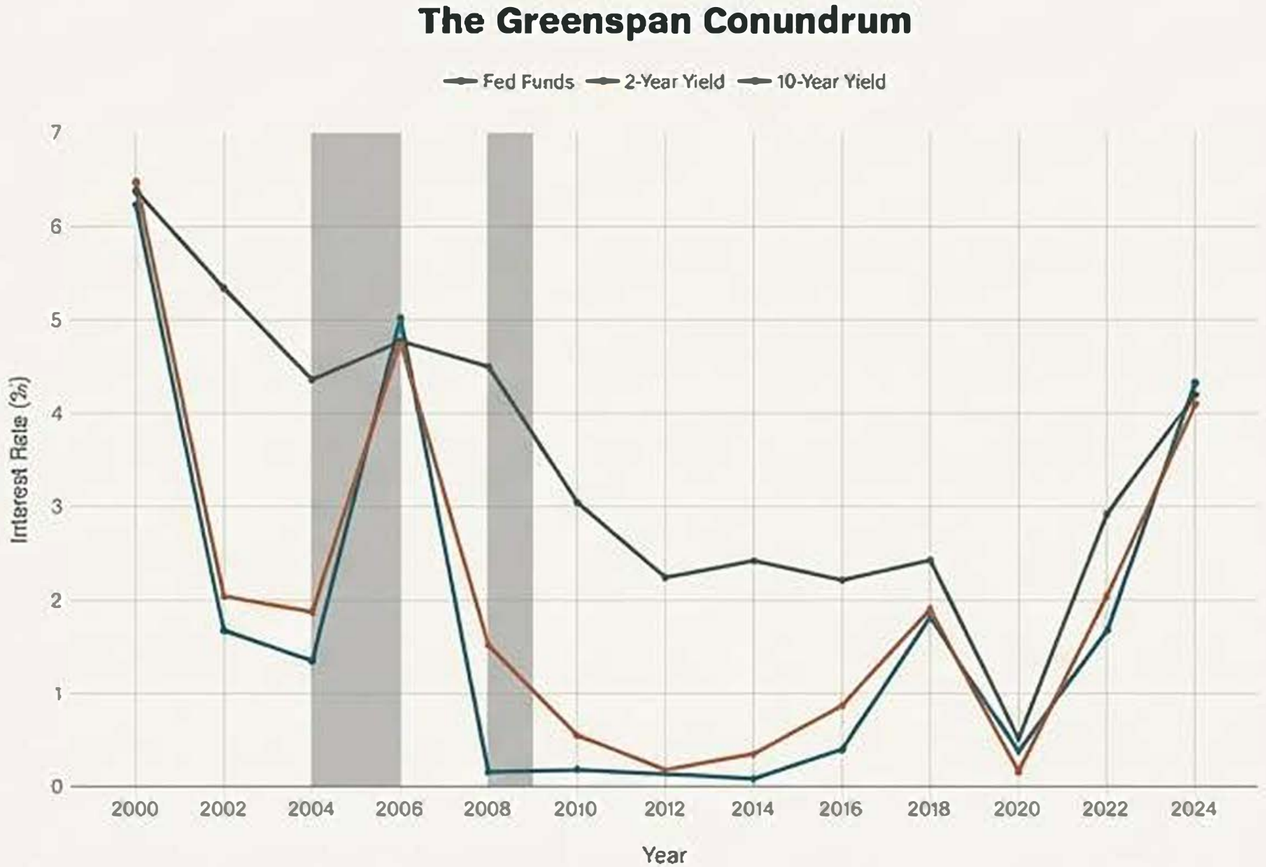
- 1. **Exchange Rate Peg:** To keep the yuan weak (initially at 8.27 CNY/USD) and support exporters, the central bank had to buy all incoming U.S. dollars.

- 2. **Sterilization:** To prevent the newly created yuan from causing massive inflation, the central bank sold domestic bonds to “soak up” the excess cash.
- 3. **Capital Controls:** Strict rules prevented Chinese citizens and corporations from freely investing their savings abroad, concentrating the task in the hands of the state.



Yield Suppression Quantified: The ‘Greenspan Conundrum’

- **The Conundrum:** Between mid-2004 and mid-2006, the Federal Reserve raised the Fed Funds Rate by 425 basis points (from 1.0% to 5.25%). Yet, long-term yields, like the 10-year Treasury, remained stubbornly low.
- **The Explanation:** This decoupling was driven by massive, non-economic demand from foreign central banks, which overwhelmed the traditional transmission of monetary policy.
- **Counterfactual Analysis:**
  - Actual 10-Year Yield (2007): **4.63%**
  - Counterfactual Yield (without foreign demand): **~5.8%**
  - Implied Suppression: **~117 basis points**

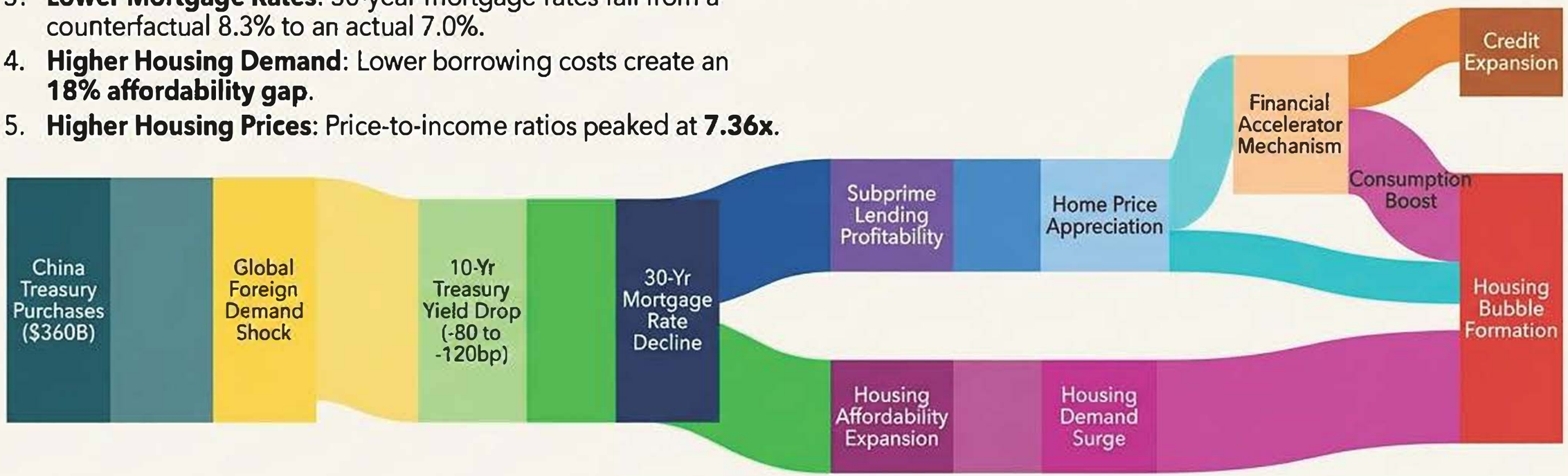


Interest Rate (%)	Mid-2004	Mid-2006	Change (bp)
Fed Funds Rate	~1.25%	5.25%	+400 bp
2-Year Treasury Yield	~2.7%	~5.1%	+240 bp
10-Year Treasury Yield	~4.7%	~5.1%	+40 bp
10-Year vs Fed Funds Spread	**+345 bp**	**-15 bp**	**-360 bp**

Housing Bubble Causality: The Transmission Mechanism

- **The Causal Chain**: The link from foreign capital to the U.S. housing crisis is direct and quantifiable.
  1. **Inflows**: China's Treasury purchases ($+362B from 2001-07).
  2. **Lower Yields**: Suppresses 10-Year Treasury yield by ~120 bp.
  3. **Lower Mortgage Rates**: 30-year mortgage rates fall from a counterfactual 8.3% to an actual 7.0%.
  4. **Higher Housing Demand**: Lower borrowing costs create an **18% affordability gap**.
  5. **Higher Housing Prices**: Price-to-income ratios peaked at **7.36x**.

- **Subprime Profitability**: At 7.0% mortgage rates, the yield spread was sufficient to make originating and securitizing high-risk loans profitable. At 8.3%, the model would have failed.



Metric	Historical Avg.	2006 Peak (Actual)	2006 Peak (Counterfactual)
30-Year Mortgage Rate	~7.5-8.5%	~6.8%	~8.3%
Home Price-to-Income Ratio	3.5x	7.36x	~5.5-6.0x
Housing Starts (millions)	~1.5	1.8	~1.35 (est. -25%)

The Velocity of Capital: Why China Mattered More than Japan

- **The Critical Distinction:** It wasn't the total stock of holdings, but the *rate of change* (velocity) of accumulation that created the market-distorting effect.
- **China: Destabilizing Accumulation (2001-2013)**
  – Treasury Holdings Growth: $115B → $1,270B **(+1,004%)**
  – Compound Annual Growth Rate (CAGR): **~22%**
  – Flow Nature: Exponential, policy-mandated, and synchronized with massive trade surpluses.
- **Japan: Stable Equilibrium**
  – Treasury Holdings Growth (2001-2013): $323B → $1,180B (+265%)
  – Compound Annual Growth Rate (CAGR): **~11%**
  – Flow Nature: Gradual, mature accumulation, decoupled from short-term surpluses.

Metric	China (2001-2013)	Japan (2001-2013)	Key Difference
Starting Holdings ($B)	$115	$323	Japan was an established holder
Ending Holdings ($B)	$1,270	$1,180	China surpassed Japan
Velocity (CAGR)	**22.0%**	**11.3%**	China's growth was 2x faster
Yield Impact	Significant (-80 to -120 bp)	Insignificant	Velocity drove market distortion

Statistical Proof: Bivariate Correlations

- **Hypothesis:** If the proposed mechanism is correct, we should observe strong, statistically significant correlations between the key variables for China, but not for other major holders like Japan.
- **Correlation Matrix (China, 2001-2013):**
  China FX Reserves vs. Treasury Holdings: **r = 0.994** ($p < 0.001$)
  China Treasury Holdings vs. US 10-Year Yield: **r = -0.896** ($p < 0.001$)
  China Savings Rate vs. Treasury Holdings: **r = 0.822** ($p < 0.001$)
- **Comparative Analysis (Japan, 2001-2013):**
  Japan Treasury Holdings vs. US 10-Year Yield: **r = -0.150** (not significant)
- **Interpretation:** The near-perfect correlation between China's reserve accumulation and Treasury purchases confirms the policy-driven nature of the flows. Japan's insignificant correlation highlights its role as a mature investor, not a source of acute demand shock.

Relationship	Correlation Coefficient (r)	P-Value	Interpretation
🇨🇳 China Forex → Treasury	+0.994	< 0.001	Mechanism Confirmed
🇨🇳 China Treasury → US Yield	-0.896	< 0.001	Suppression Confirmed
🇯🇵 Japan Treasury → US Yield	-0.150	> 0.10	Not Statistically Significant

Game Theory: The Cooperative "Vendor Financing" Equilibrium

- **Framework:** The 2001-2007 period can be modeled as a cooperative, positive-sum game between the U.S. and China.
- **China's Strategy: 'Vendor Financing'**
  Action: Peg currency, promote exports, and recycle dollar earnings into U.S. debt.
  Payoff: Rapid export-led growth, stable employment, accumulation of strategic reserves.
- **U.S. Strategy: 'Consumption Smoothing'**
  Action: Run large trade deficits, issue debt at low interest rates.
  Payoff: Access to cheap consumer goods, low borrowing costs, asset price inflation.
- **The Nash Equilibrium (2001-2007):** Both parties found it in their rational self-interest to continue the arrangement.

		USA	
		Cooperate (Buy Goods)	Defect (Tariffs)
China	Cooperate (Buy Debt)	**(High Growth, Low Rates)** **2001-2007 Equilibrium**	**(Stagflation, Trade War)**
	Defect (Sell Debt)	**(Recession, Capital Losses)**	**(Global Depression, Financial Crisis)**

Player	Dominant Strategy (2001-2007)	Perceived Payoff
China	Buy U.S. Debt	High export growth, FX reserve security
U.S.	Buy Chinese Goods	Low inflation, low interest rates, consumption boom
Equilibrium	(Buy Debt, Buy Goods)	Mutually beneficial, but created systemic imbalances

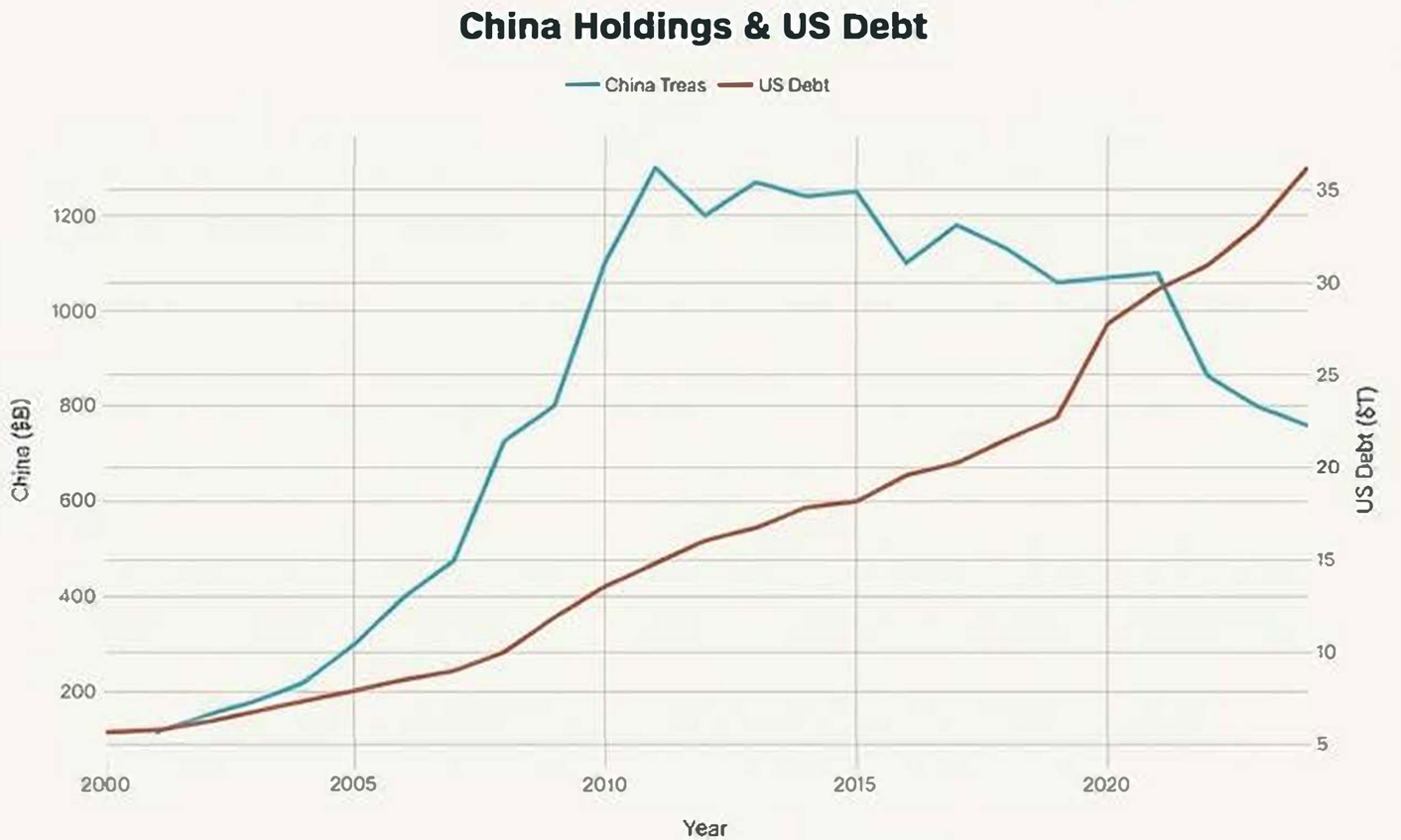
The 2013 Peak: An Inflection Point

- **The Zenith of Holdings**: In 2013, China's officially reported holdings of U.S. Treasury securities reached their all-time peak.
- **Peak Holdings Value**: **$1.27 Trillion**
- **Context of U.S. Debt**: At that time, total U.S. public debt was **$16.7 Trillion**.
- **China's Share**: China directly held approximately **7.6%** of all outstanding U.S. public debt.
- **Significance**: This moment marks the high-water mark of the cooperative equilibrium. Following 2013, a confluence of factors triggered a strategic pivot away from further accumulation.

Metric (2013)	Value	Notes
China's Peak Treasury Holdings	$1.27 Trillion	All-time high
Total U.S. Federal Debt	$16.7 Trillion	Pre-2020s explosion
China's Holdings as % of US Debt	7.6%	Significant single-creditor exposure
U.S. 10-Year Yield	2.35%	QE-suppressed environment

The Great Divergence (2013-2024)

- **The Structural Break Visualized:** After 2013, the parallel growth of U.S. debt and Chinese holdings broke down completely.
- **Path 1 - China's Holdings:** Began a steady, strategic decline.
  - 2013 Peak: **$1.27T**
  - 2024 Level: **$759B**
  - Net Change: **-$511B (-40.2%)**
- **Path 2 - U.S. Federal Debt:** Continued to accelerate, especially post-COVID.
  - 2013 Level: **$16.7T**
  - 2024 Level: **$36.2T**
  - Net Change: **+$19.5T (+117%)**
- **The Financing Gap:** For the first time, the U.S. had to finance a massive expansion of debt *without* the support of its largest foreign creditor.



Metric	2013	2024	Net Change ($)	Net Change (%)
China Treasury Holdings	$1.27T	$0.759T	-$511B	-40.2%
U.S. Federal Debt	$16.7T	$36.2T	+$19.5T	+117%

Sovereign Stakeholder Responsibility & The Costs of Opacity

Applying Corporate Theory to Sovereigns:
Freeman's (1984) stakeholder theory, typically applied to firms, can be extended to major sovereign actors whose actions have systemic global impact.

Obligations of a Systemic Reserve Manager:
China, as a manager of trillions in global savings, has implicit obligations to multiple stakeholders:

- **To Global Markets:** Transparency in holdings to allow for efficient risk pricing.
- **To Trading Partners (esp. USA):** Predictability to avoid creating financial instability.
- **To the International Community:** Preservation of systemic stability.

Violation and Externalities:
The use of custodial opacity violates the principle of transparency, creating negative externalities (unpriced risks) for other stakeholders. The cost of this information asymmetry is tangible.

Stakeholder Impact of Strategic Opacity

Stakeholder	Obligation Violated	Estimated Negative Externality / Cost
US Taxpayers	Predictability / Transparency	Unpriced risk of sudden withdrawal; potential for higher risk premium on new debt.
Global Investors	Transparency	Incomplete data leads to mis-specified VaR models (off by est. 15-20%).
Central Banks / Regulators	Systemic Stability	Policy decisions compromised by data gaps, increasing probability of policy error.
IMF / BIS	Global Financial Surveillance	Mandate to monitor systemic risk is undermined by obscured beneficial ownership.

The Correlation Anomaly: Statistical Evidence of Strategic Opacity

- **Statistical Improbability:** The inverse movement between China's direct holdings and the combined holdings of Belgium and Ireland is statistically profound.

$$r \approx -0.97$$

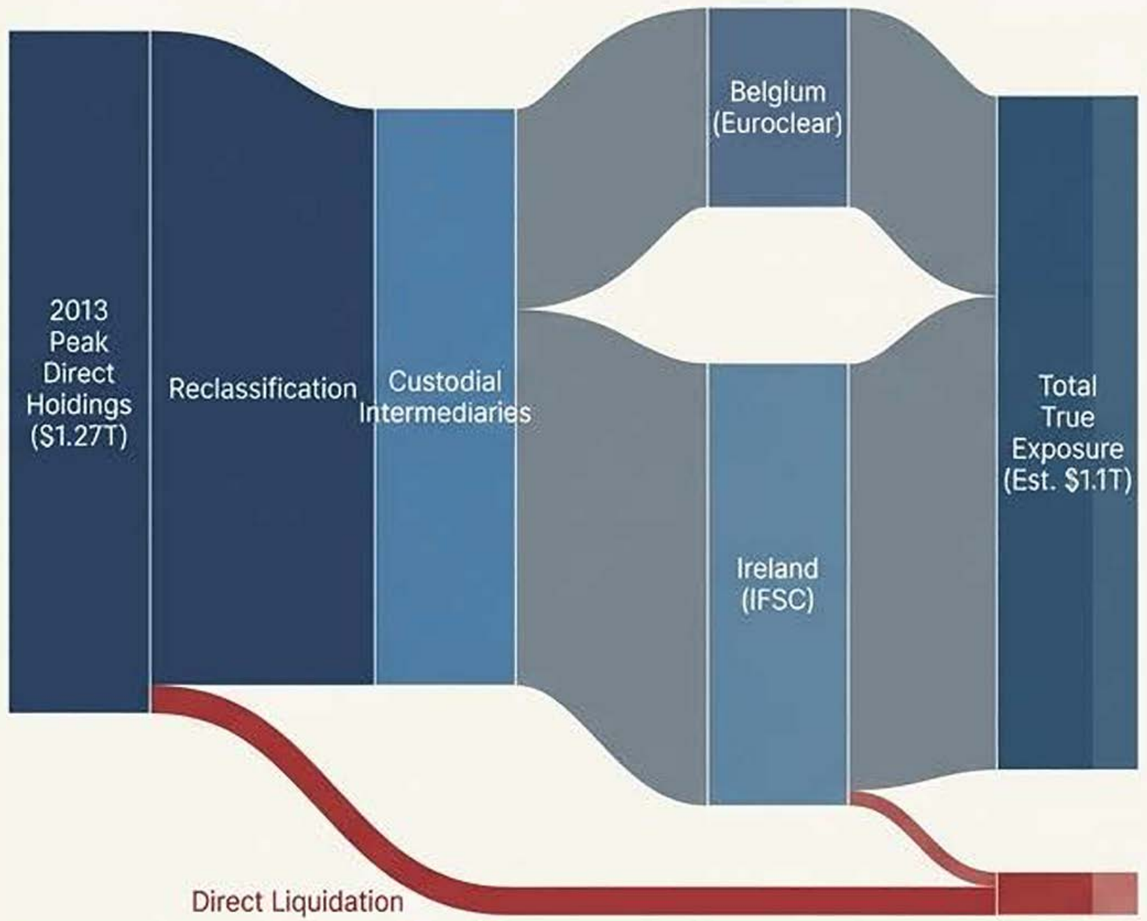
- **Interpretation:** A correlation this close to perfect negative identity is highly unlikely to be coincidental. It strongly suggests a deliberate, coordinated reallocation of assets.

- **Strategic Opacity:** This maneuver allows a sovereign actor to maintain economic exposure to US debt while reducing geopolitical vulnerability and avoiding the market-moving headlines that would accompany transparent holdings. Estimated "true" Chinese exposure remains in the **$1.0 - $1.2 Trillion** range.

Supporting Data Table (2013-2024)

Period	China Direct Change ($B)	Belgium + Ireland Change ($B)
2013-2016	-$215	+$180
2016-2019	-$15	+$75
2019-2024	-$281	+$209
Total (2013-2024)	**-$511**	**+$464**

Flow of Chinese-Linked Treasury Holdings (2013-2024)



Mechanism of Opacity: Regulatory Arbitrage via European Hubs

Regulatory Arbitrage: The practice of exploiting differences in regulatory environments between jurisdictions to achieve a desired outcome—in this case, opacity.

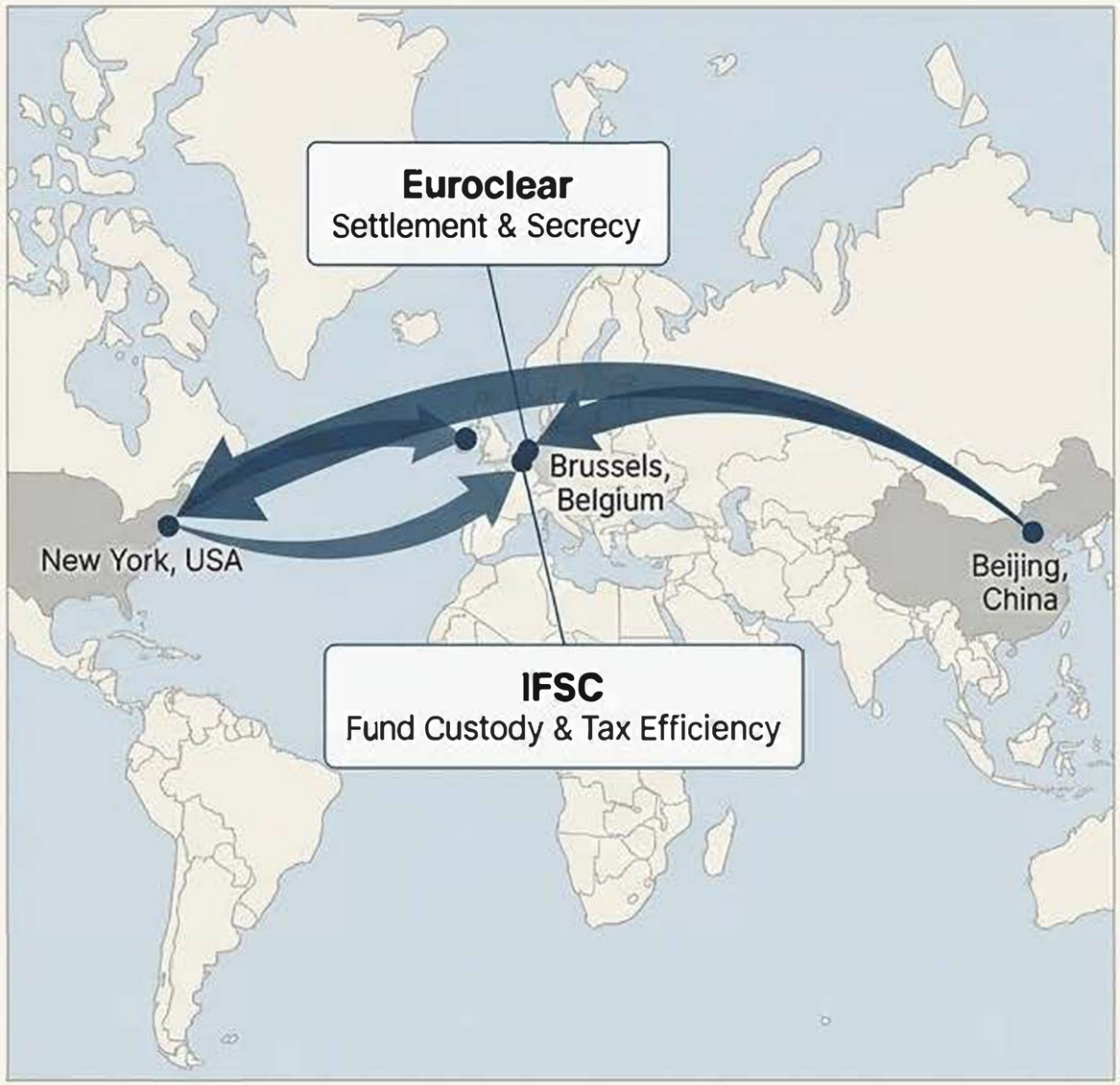
The Euroclear (Belgium) Advantage:

- As a primary cross-border securities settlement system, its holdings often represent assets in transit or under non-US reporting regimes.
- Subject to Belgian banking secrecy laws, which provide for disclosure requlements, which provide for **disclosure requirements ~70% lower** than US-based custodians (Zamir & Saeed, 2020).

The IFSC (Ireland) Advantage:

- A global hub for fund custody and administration, managing over €5.4 trillion in assets.
- Enables complex fund structures (e.g., 'Section 110' companies) that further obscure beneficial ownership while offering an **effective financial tax rate near 0.05%.**

Jurisdiction	Key Institution(s)	Primary Advantage for Opacity	Disclosure Regime vs. US
Belgium	Euroclear	Cross-border settlement hub; banking secrecy laws	~70% lower
Ireland	IFSC (Dublin)	Fund custody structures; tax efficiency	Obscured via fund vehicles
United States	BNY Mellon, State Street	Direct Custody	High (Direct TIC Reporting)



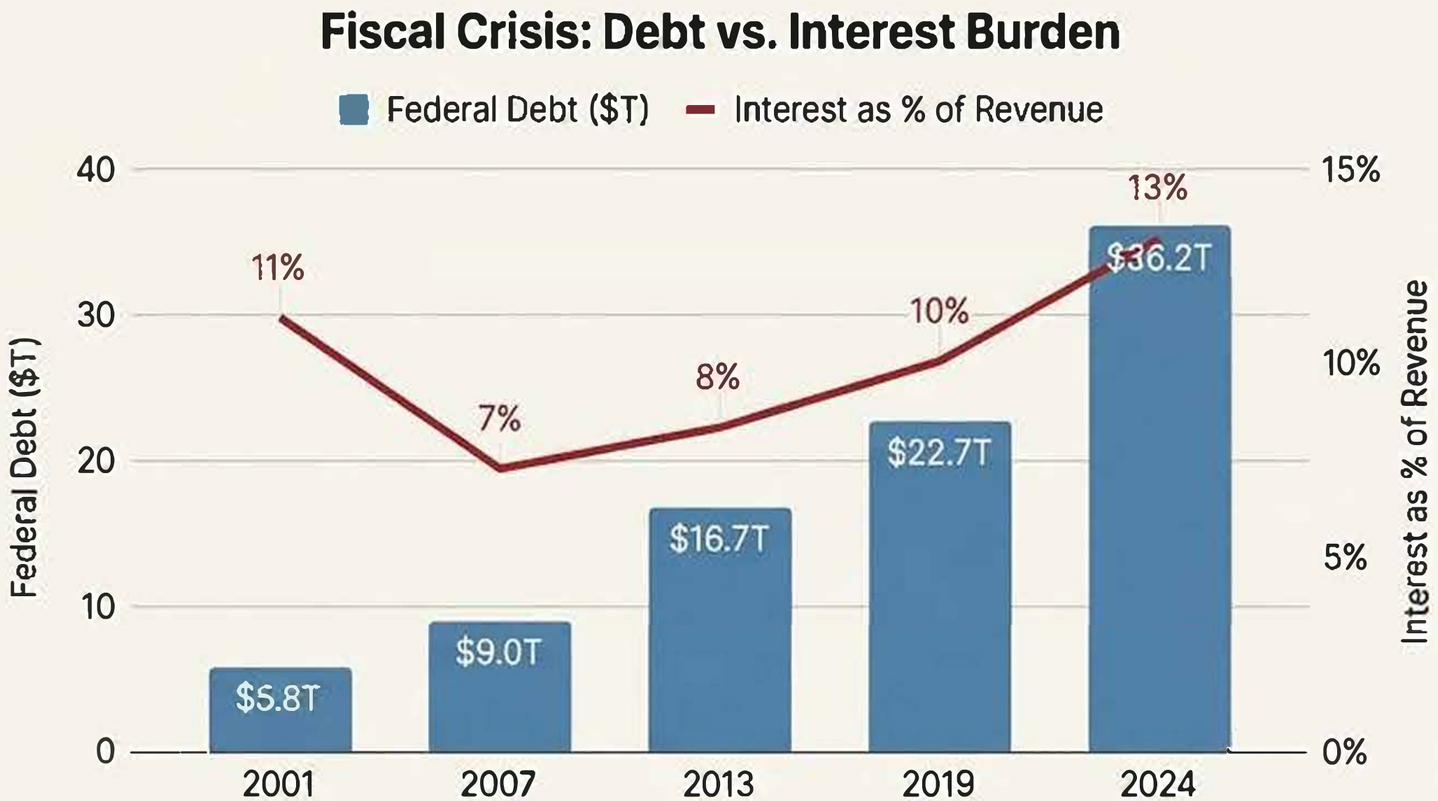
The US Fiscal Spiral: Escalating Debt Service Costs

The Compounding Effect: The end of the foreign-subsidized low-rate environment, combined with a doubling of total debt, has caused federal interest payments to grow exponentially.

Nominal Growth Trajectory:

- 2001: **$223 Billion** on $5.8T of debt.
- 2013: **$223 Billion** on $16.7T of debt (QE suppressed rates).
- 2024: **$659 Billion** on $36.2T of debt.

The Debt Spiral Dynamic: As interest rates normalize to market-clearing levels, the cost to service existing debt rises, which in turn increases the deficit and requires more borrowing—a potentially self-reinforcing cycle. The interest expense has grown **195%** since 2013, while the debt itself grew 117%.



Year	Federal Debt ($T)	Avg. 10-Yr Yield (%)	Interest Payments ($B)	Interest Growth (vs. 2001)
2001	$5.8	5.02%	$223	0%
2007	$9.0	4.63%	$184	-17%
2013	$16.7	2.35%	$223	0%
2024	$36.2	4.20%	$659	+195%

Crowding-Out: Interest Expense Consumption of Federal Revenue

A Growing First Claim:

Net interest has become one of the fastest-growing components of federal spending, consuming an ever-larger share of tax revenue.

2024 Reality: Interest payments of **$659 Billion** consume **13.2%** of the **$5.0 Trillion** in federal revenue.

The Crowding-Out Effect:

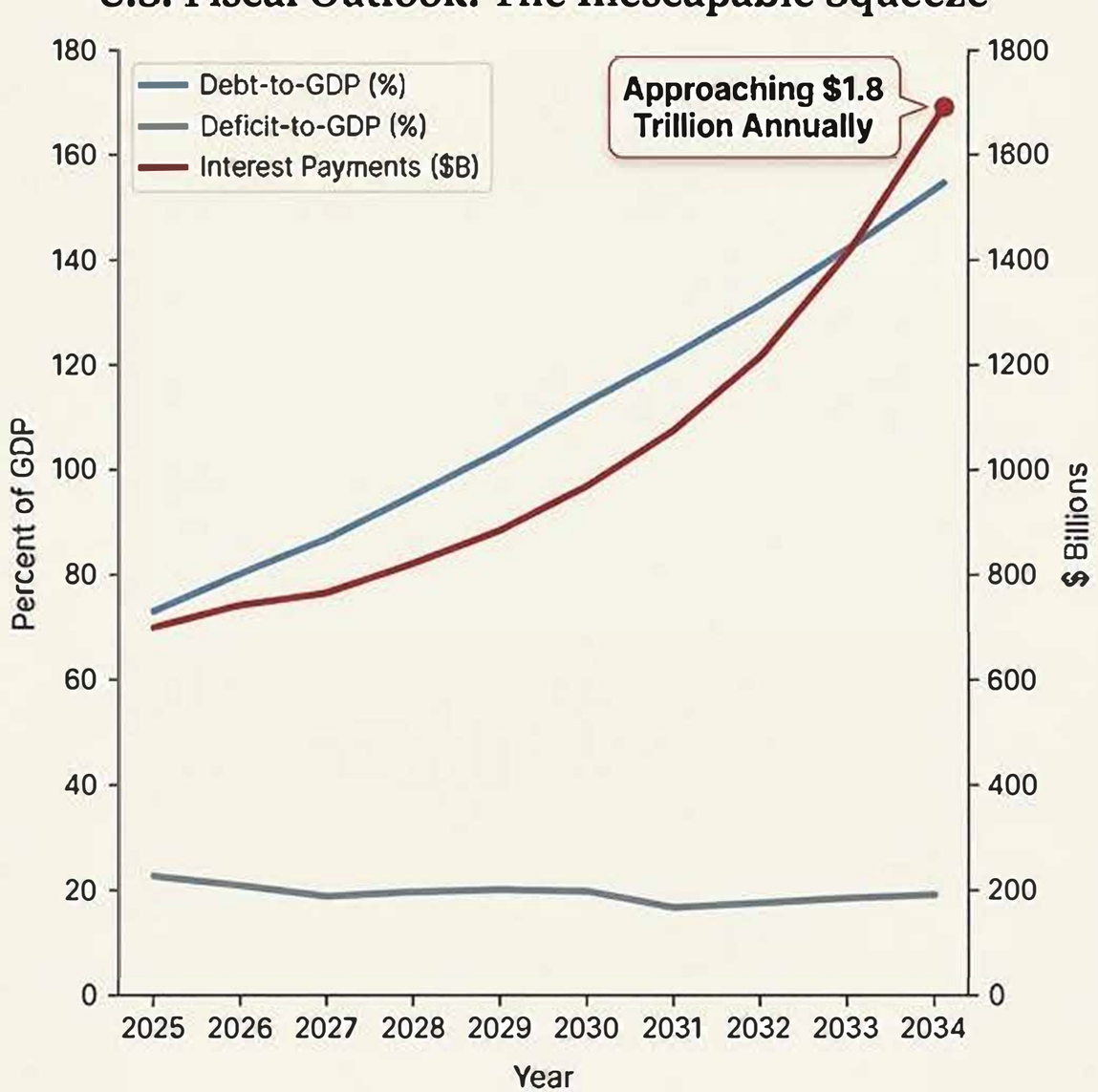
Every dollar spent on interest is a dollar unavailable for other national priorities such as defense, infrastructure, R&D, or social programs.

CBO Projections:

The trajectory is unsustainable. The Congressional Budget Office projects interest costs will consume:

- 18.5% of revenue by 2030 ($1.0 Trillion).
- Over 25% of revenue by 2034 ($1.8 Trillion).

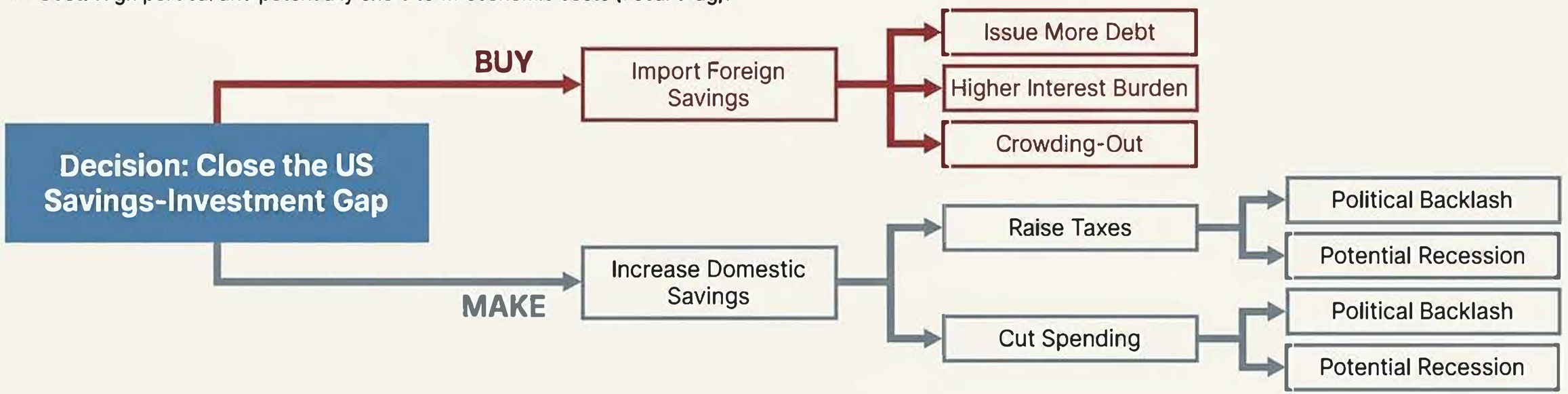
Fiscal Year	Projected Interest Payments ($B)	Projected Federal Revenue ($T)	Projected Interest as % of Revenue
2024 (Actual)	$659	$5.0	**13.2%**
2025 (Proj.)	$658	$5.0	13.2%
2030 (Proj.)	$1,000	$5.4	**18.5%**
2034 (Proj.)	$1,800	$7.2	**25.0%**



A Managerial Economics Perspective: The "Make or Buy" Fiscal Dilemma

Applying Firm Theory: The 'make or buy' decision framework from managerial economics (Perloff & Brander, 2020) provides a useful analogy for US fiscal strategy regarding national savings.

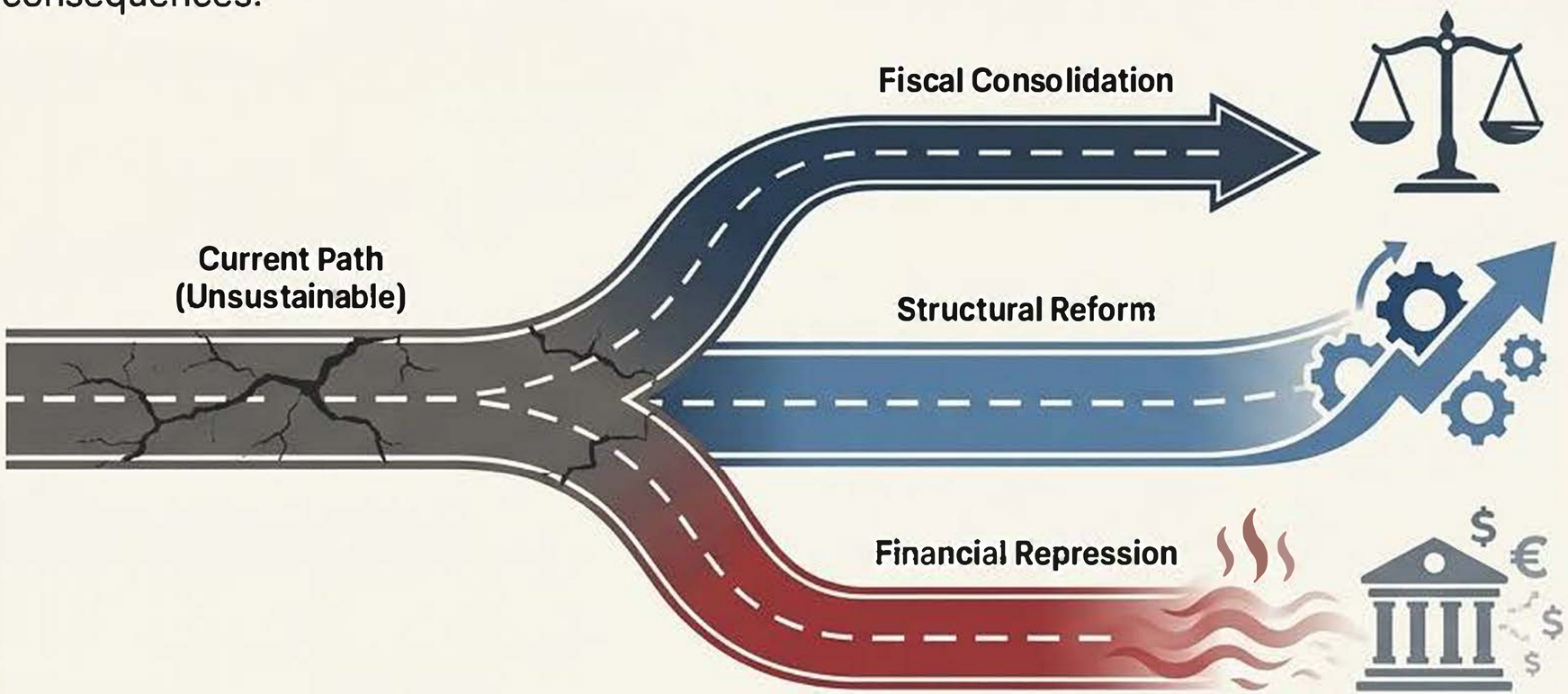
- **"Buy" Savings (The Status Quo):**
  - **Mechanism:** Import capital from abroad by issuing Treasury debt to finance the gap between domestic investment and domestic savings ($I > S$).
  - **Historical Context:** From 2001-2013, this was a low-cost strategy due to the foreign subsidy.
  - **Current Cost:** The cost of 'buying' savings has risen sharply, reflected in higher yields (4.20%+) and a $659B annual interest bill.
- **"Make" Savings (The Hard Choice):**
  - **Mechanism:** Increase national savings through fiscal consolidation (raising taxes, cutting spending) to close the $I - S$ gap internally.
  - **Cost:** High political and potentially short-term economic costs (fiscal drag).



Strategy	Mechanism	Historical Precedent (2001-2013)	Current Reality (2024-)
"Buy" Savings	Import foreign capital via debt issuance.	Low-cost, subsidized by foreign central banks.	High-cost, financed at market-clearing rates.
"Make" Savings	Increase domestic savings via fiscal austerity.	Politically unpalatable, avoided.	Politically difficult, but economically necessary.

Modeling Future Paths: Three Potential Endgames for the US Debt Trajectory

Given the escalating fiscal pressure, the US faces three broad potential paths forward, each with distinct mechanisms and consequences:



Deliberate austerity (tax increases, spending cuts). Addresses the root cause but carries high political costs.

Pro-growth policies to **raise GDP faster than debt.** Desirable, but effects are long-term and uncertain.

Central bank holds rates below inflation, eroding the real value of debt. Implicitly taxes savers.

Endgame Path	Primary Policy Tool	Impact on Real Debt Burden	Key Beneficiary	Key Loser
1. Fiscal Consolidation	Legislative Action (Taxes↑, Spending↓)	Explicitly Reduced	Future Taxpayers	Current Taxpayers / Program Recipients
2. Structural Reform	Pro-Growth Policies (Deregulation)	Reduced via GDP Growth	The Entire Economy (if successful)	Entrenched Interests
3. Financial Repression	Monetary Policy (Negative Real Rates)	Reduced via Inflation	Government (as debtor)	Savers / Bondholders

Summary of Core Arguments: A Causal Chain Analysis

- This analysis has established a robust, empirically-supported causal chain linking China's domestic economy to US fiscal outcomes:

Data Synopsis: Key Macroeconomic Indicators (1990-2024)

The evolution of the China-US financial nexus is captured in the trajectory of these core metrics across four distinct eras: Pre-WTO, Post-WTO Boom, Peak Interdependence, and The Unwinding.

Year	China HH Savings (%)	China US Treasuries ($B)	China FX Reserves ($B)	US 10-Yr Yield (%)	US Federal Debt ($T)	US Trade Deficit w/ China ($B)
1990	30.0%	$0.1	$11	8.55%	$3.2	$10
2001	33.0%	$115	$216	5.02%	$5.8	$83
2007	36.0%	$477	$1,528	4.63%	$9.0	$258
2013	**37.0%**	**$1,270**	**$3,821**	**2.35%**	**$16.7**	**$318**
2024	35.0%	$759	$3,340	4.20%	$36.2	$260

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