

Discussion of 'The Role of the Growth of Risk-Averse Wealth in the Decline of the Safe Real Interest Rate ' by Bob Hall

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Why has the risk free rate declined to such a low level?

- Hall hypothesis
 - Fall in the risk free rate reflects the *optimal* response of global financial markets to declining *global* inequality.
- Different in spirit than competing explanations which rely on market imperfections.
- Secular stagnation:
 - Aging population, low fertility, or sluggish productivity growth can imply a permanent negative real interest rate and a binding ZLB.
- International considerations such as the 'savings glut':
 - Cross country differences in ability of financial market to produce safe, liquid assets.
 - China, Japan and mercantilism.

The relative importance of different explanations

- Different explanations imply different optimal policy responses.
- Task is to investigate the quantitative importance of different explanations.
- Labelling everyone who buys 'risky' domestic securities as 'risk averse' is an elegant exercise.
- But it isn't likely to be helpful in getting at who the real actors are and how policy should respond.
- My own priors are that the U.S. does play a central role in international risk sharing.
- But I'm not yet persuaded that risk-sharing developments played a large role in the *decline* of the real interest rate.

Overview of Discussion

- Some stylized facts.
- Brief overview of Hall mechanism.
- Challenges to the Hall hypothesis.
 - Time series evidence
 - The reserve currency paradox.
- New channels?
 - Pre-2008: Twin deficits, mercantilism and currency manipulation.
 - Post-2008: Regulation and the rise in the demand for safe/liquid assets.

A secular decline in the real interest rate with a sharp, persistent decline after 2008



The Hall hypothesis

- There's a tree with a stochastic endowment.
- Two types of agents own shares in the tree: less-risk averse agents and more-risk averse agents.
- Risk averse can refer to a property of preferences or an agent's view about the probability of a really bad outcome (60% drop in output)
 - As Hall makes crystal clear, the latter plays a critical role in his calculations.
- Suppose that the fraction of the endowment that risk averse agents own rises.
- Then the risk-free rate will fall.

The Hall hypothesis

- Hall identifies the poor as being more risk averse.
- Inequality within the U.S. has been *rising*.
- There's no reason to think that more pessimistic agents have been gaining a larger share of the tree.
- A purely domestic version of the risk-sharing argument can't be correct.
- Global inequality has been *falling*.
 - So an international version of the story could work.
- Key evidence: U.S. external balance sheet (2015) is characterized by risky assets and safer liabilities.

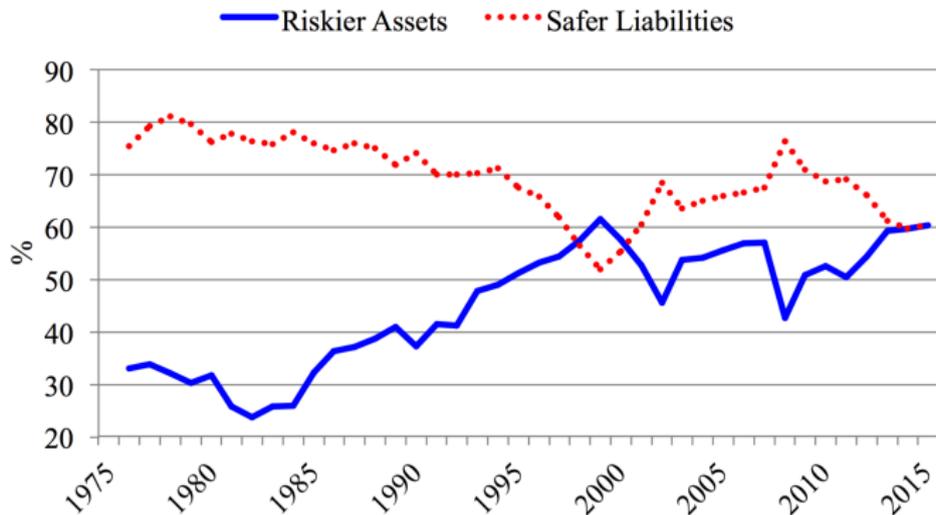
An empirical challenge to the Hall hypothesis

Trends in the risk characteristics of the U.S. external position?

- Hall compares worldwide holdings of securities that are claims on U.S. entities in 2003 and 2007.
- Breaks down holdings by U.S. and foreigners
 - Also looks at China plus others in east Asia, leaving out Japan.
- Foreigners in general hold almost twice as much U.S. debt as U.S. equity, whereas U.S. investors hold more equity than debt, in both years.
 - So Hall labels foreigners as being more risk averse.
- Moreover, foreign holdings of U.S. securities grew rapidly between 2003 and 2007.

Time Series Evidence (Maggiore, 2017)

Asset Class Composition of U.S. External Portfolio



Time Series Evidence

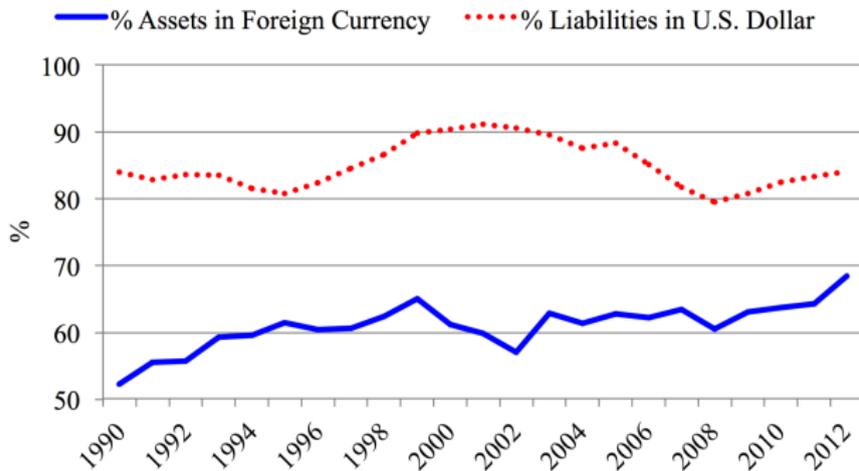
2003-2007 period is misleading about asset class trends.

- There was an upwards trend in percent of U.S. portfolio held in risky assets between 1975 and 2000.
- But after that, no obvious trend
 - Fraction was about 60% in 2000 and in 2015.
- Most strikingly, there's no trend in the fraction of foreigners' U.S. assets (U.S. liabilities held in the form of safe liabilities).
 - In fact that fraction *declined* from about 75% in 2008 to around 60% in 2015.
- Hall is correct that U.S. holds risky assets relative to ROW.
- But absent a trend in net U.S. holdings of risky assets it's hard to see how *increased* risk sharing explains the secular *decline* in real interest rate.

A theoretical challenge to Hall's formulation of the risk aversion story

Fact 1: majority of U.S. external assets are denominated in foreign currencies, while U.S. external liabilities are instead mostly denominated in U.S. dollars

Currency Composition of U.S. External Portfolio



Three other facts

- Fact 2: The U.S. runs a persistent trade deficit.
 - We've run a trade deficit every year since 1976.
- Fact 3: During global crises, the U.S. transfers substantial amounts of wealth to RoW.
 - U.S. net foreign asset position deteriorated by \$2.7 trillion in 2008.
 - Corresponds to a transfer of 18% of U.S. GDP to RoW.
- Fact 4: The U.S. dollar is the world reserve currency and earns a positive and countercyclical safety premium.

An explicit model of U.S. role in international risk sharing

Maggiore (2017): it's not risk aversion, it's financial markets

- Key country has deepest and most developed financial sector.
- Basic model of financial intermediation: continuous time adaptation of Gertler and Kiyotaki (2010).
- Greater depth of U.S. financial development is represented by FI's being better able to raise funding for investment purposes, even when they're poorly capitalized.
- So U.S. FI's are less concerned about taking levered risk: in equilibrium, they take more risk.
- But RoW FI's accumulate precautionary long positions in safer assets to insulate their capital from negative shocks.

- Asymmetric U.S. balance sheet (Fact 1) emerges from asymmetric risk sharing.
- U.S. trade deficit (Fact 2) emerges from the higher consumption that it enjoys in good times and in the long run, as compensation for the greater risks that it takes.
- Wealth transfers occur in bad times (Fact 3) because of the heavier losses suffered by U.S. after negative shocks.

Reserve Currency Paradox

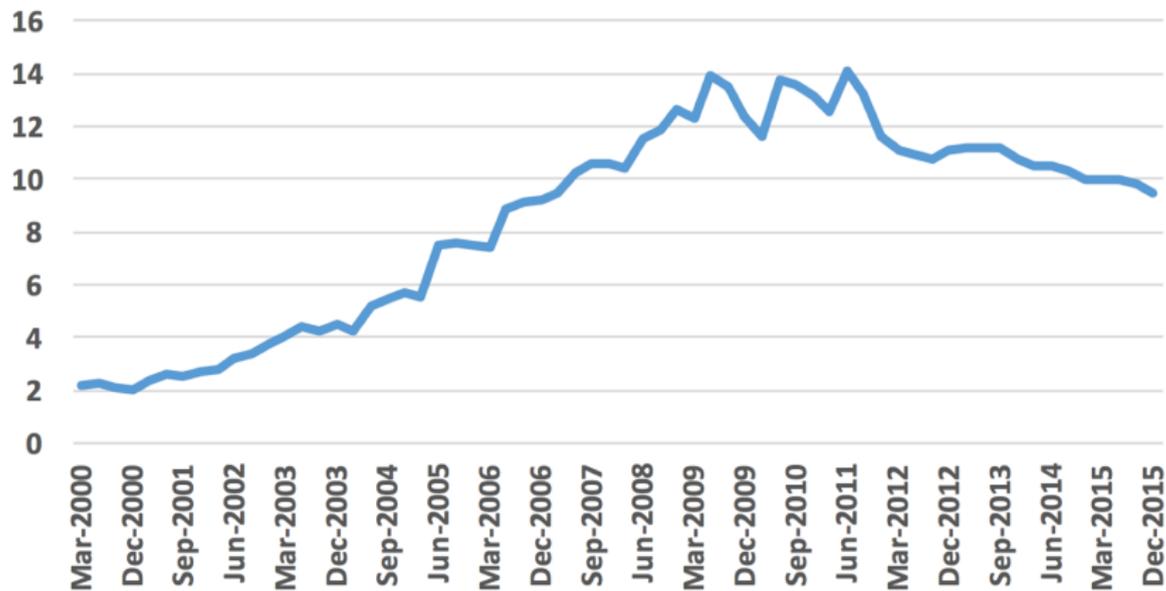
- To make risk-sharing story work, you have to confront the “reserve currency paradox”
 - Tension between wealth transfers from the U.S. to RoW in bad times and the role of the U.S. dollar as a global safe asset.
- Traditional models predict a transfer of wealth from the U.S. to RoW during crises results in a U.S. dollar *depreciation*.
 - As long as there's home bias in consumption, wealth transfer increases relative demand for RoW goods.
- But then the U.S. dollar would represent a risky asset for RoW residents, since it would have a low payout in bad states of the world.
- In fact the dollar *appreciated* during the crisis: so what's missing from these risk-sharing models?

Post-2008 period is different

- Real interest rate drops a lot.
- Fraction of US liabilities in safe assets drops from about 75% to about 60%.
- Fraction of U.S. assets in risky assets stays about the same.
- Current account surplus of China and US stabilized.

Focus on China

China's Share of Total US Marketable Treasury Debt



Focus on China

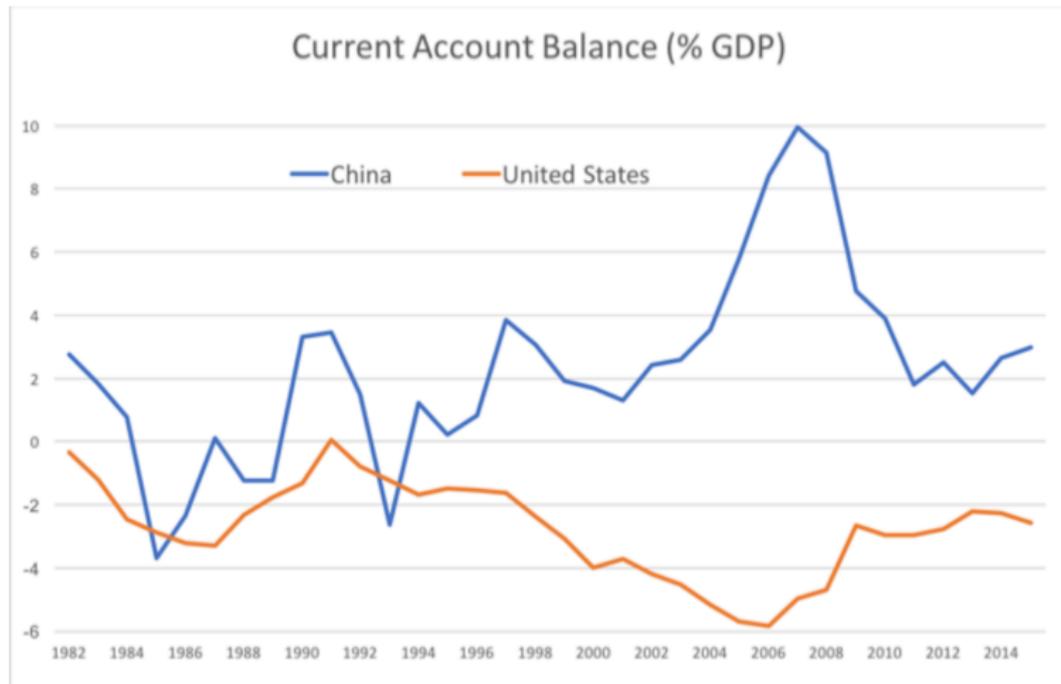


A provocative view

- Risk-based stories abstract from possible importance of large U.S. government deficits and currency intervention.
- Did those deficits play an important role in generating U.S. trade deficits and the capital flows which Hall and Maggiori are interpreting as risk-sharing?
- Traditional answer is no.
 - If our deficits were the problem, interest rate on U.S. debt should have gone up, not down.
- Maybe the answer is yes.

Pre-2008 current accounts

Enormous imbalances in China and U.S. current accounts



A provocative interpretation of the pre-2008 period

- Take as given
 - Post-WTO China was mercantilist in nature.
 - U.S. political system generated massive government deficits.
- The best undergrad textbooks (e.g. Hall and Taylor) suggest that fiscal deficit would lead to trade deficits.
- Trade deficits should have eventually led to an appreciating Yuan and a depreciating dollar.
- Mercantilist China didn't get the free trade memo, wanted to continue generating trade surpluses
 - Export driven model of growth
 - Unwillingness to re-structure the economy in the face of massive rural-to-urban migration.

Currency Intervention

- To prevent the Yuan from depreciating, Chinese authorities had to buy dollar-denominated assets.
- A very broad version of Bob's story
 - Chinese authorities wanted lots of safe, liquid assets to deal with various scenarios.
 - So they bought U.S. Treasury / agency. corporate debt.
- Why not buy equity?
 - Imagine what would have happened if China bought IBM, Sea World, Disneyland and Boeing?
- Previous interpretation doesn't strike me as well described by an economic-risk sharing story.

Why happened after 2008?

- Current account stabilized, but the risk-free rate plummeted and stayed low.
- Initial fall easy to answer: crisis related demand for safe - liquid assets.
- One reason the fall was so persistent: regulations.
- Basel III - which have banks have pro-actively moved to satisfy- has generated a shift in the demand for safe -liquid assets.

Basel III and the domestic demand for government securities

- Raised banks' minimum capital ratios,

$$\frac{CET1}{RWA}$$

- CET1: common equity tier 1.
- RWA: risk weighted assets.
- In practice major banks have substantially increased these ratios, commonly exceeding 10%.
- 'Safe assets' like excess reserves, Treasury securities have zero risk weights, *GSE* debt have 20% weight.

Liquidity coverage ratio

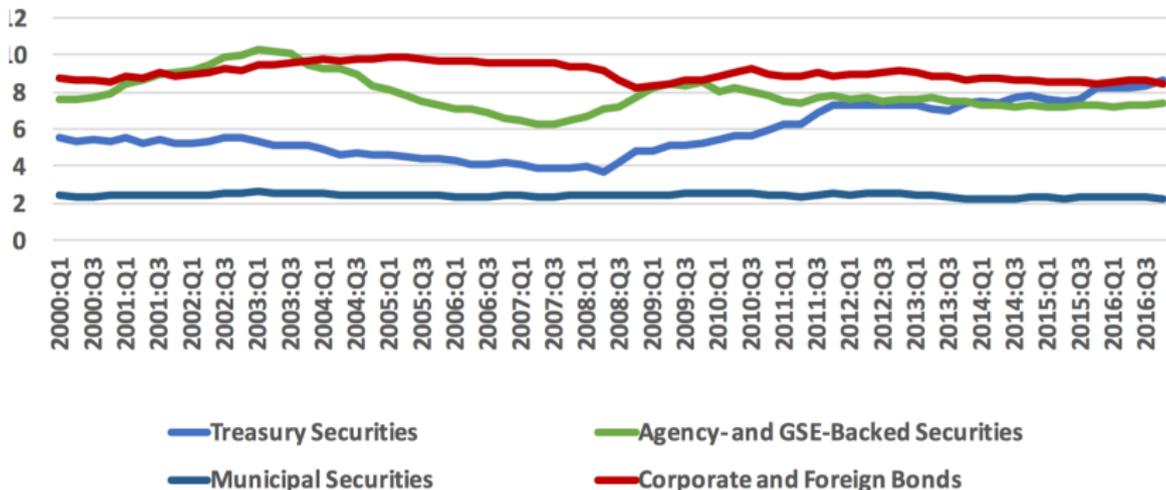
$$LCR = \frac{\text{High Quality Liquid Assets}}{\text{Total Net Cash Outflows over a 30 day stress period}} \geq 100$$

- Three categories of high-quality liquidity assets with decreasing levels of quality.
- Level 1 have no haircut
 - Examples: Federal Reserve bank balances, U.S. government of GSE issued securities.
- Level 2A: a 15% haircut
 - Example: securities issued or guaranteed by U.S. government-sponsored enterprises.
- Level 2B: a 50% haircut
 - Example: investment-grade corporate debt securities issued by non-financial sector corporations.

Increase in demand for safe assets in post-2008 period

Primarily induced by regulation, not risk-aversion

U.S. Domestic Financial Sector: Demand for Relevant Debt Assets over Total Financial Assets



Conclusion

- The Hall paper is an elegant development of the -risk aversion hypothesis.
- It is a very nice addition to the literature that models the importance of risk sharing the role that the U.S. plays.
- I am persuaded about the importance of the role that the U.S. plays in international risk sharing.
- I am less persuaded that changes in the fraction of the tree which risk averse agents owns explain the downwards trend in the real interest rate.
- It will be interesting to see what happens as China continues to sell U.S. debt in an effort to prevent the Yuan from further depreciating.

Extra information: Maggiori calculations

- Calculations based on annual data (1976-2015) from BEA.
- Percentages are computed as:
 - $(\text{Equity} + \text{Equity in FDI}) / (\text{Total Assets} - \text{Derivatives})$ for assets
 - $(\text{Debt} + \text{Debt in FDI} + \text{Other Investments}) / (\text{Total Liabilities} - \text{Derivatives})$ for liabilities.
- Derivatives positions are excluded to avoid issues associated with netting of contracts in characterizing risk characteristics of the asset class.