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The US outlook viewed through the credit channel

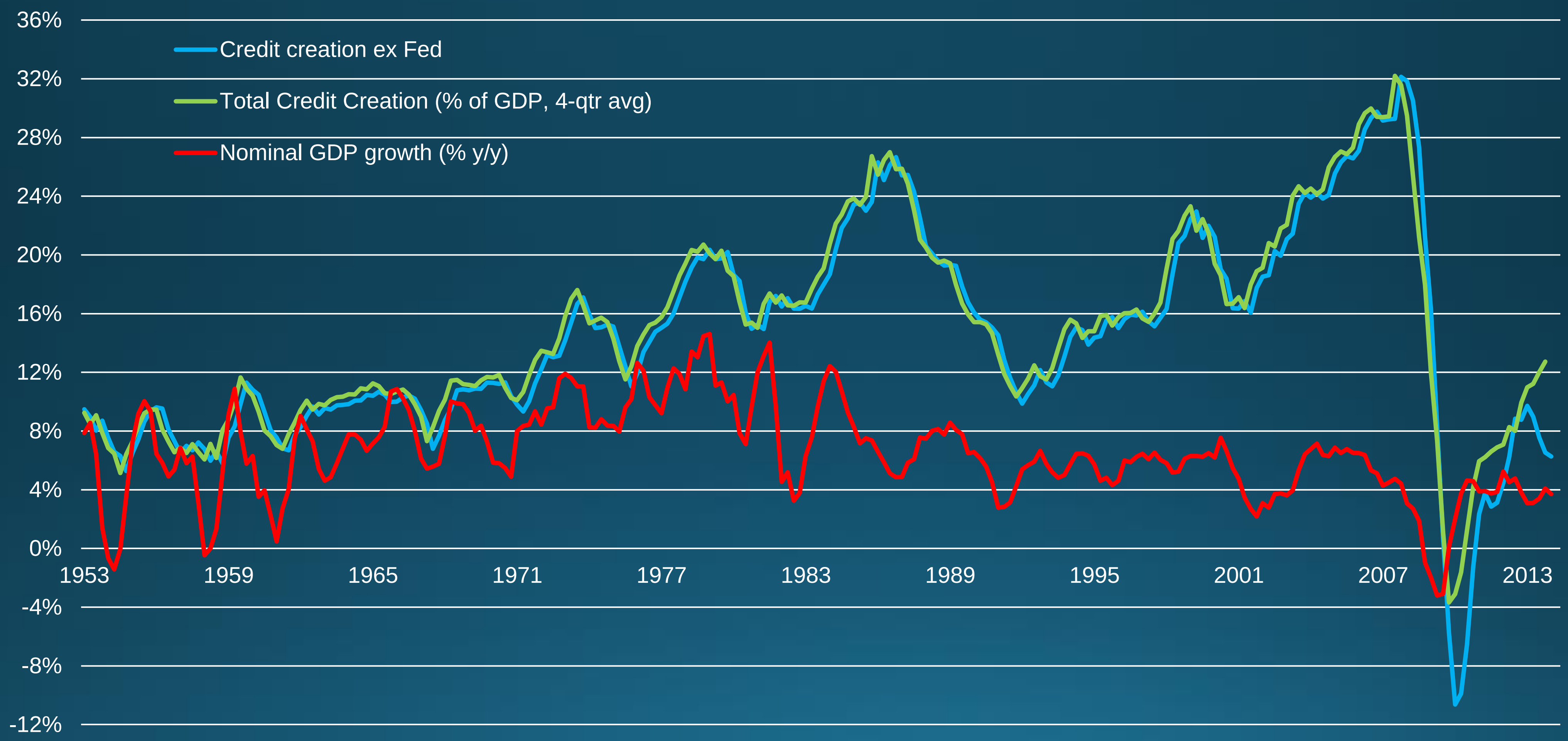
Integrating credit into the economic outlook

- "When Credit Bites Back: Leverage, Business Cycles, and Crises" by Oscar Jorda, Moritz Schularick, and Alan Taylor
  - Rogoff and Reinhart of private credit (200 cycles in 14 advanced economies), the degree of "excess" credit growth during an expansion has a material impact on the shape and duration of the recession and recovery with or without a financial crisis.
- "Fed Notes: The Role of Financial Imbalances in Assessing the State of the Economy" by David Arseneau and Michael Kiley
  - Forecasting models perform better when augmented with the growth of household and business credit. The output gap was roughly 1pp greater than traditional estimates between 2204-2007 and the negative output gap is currently about 1pp larger.

Credit channels

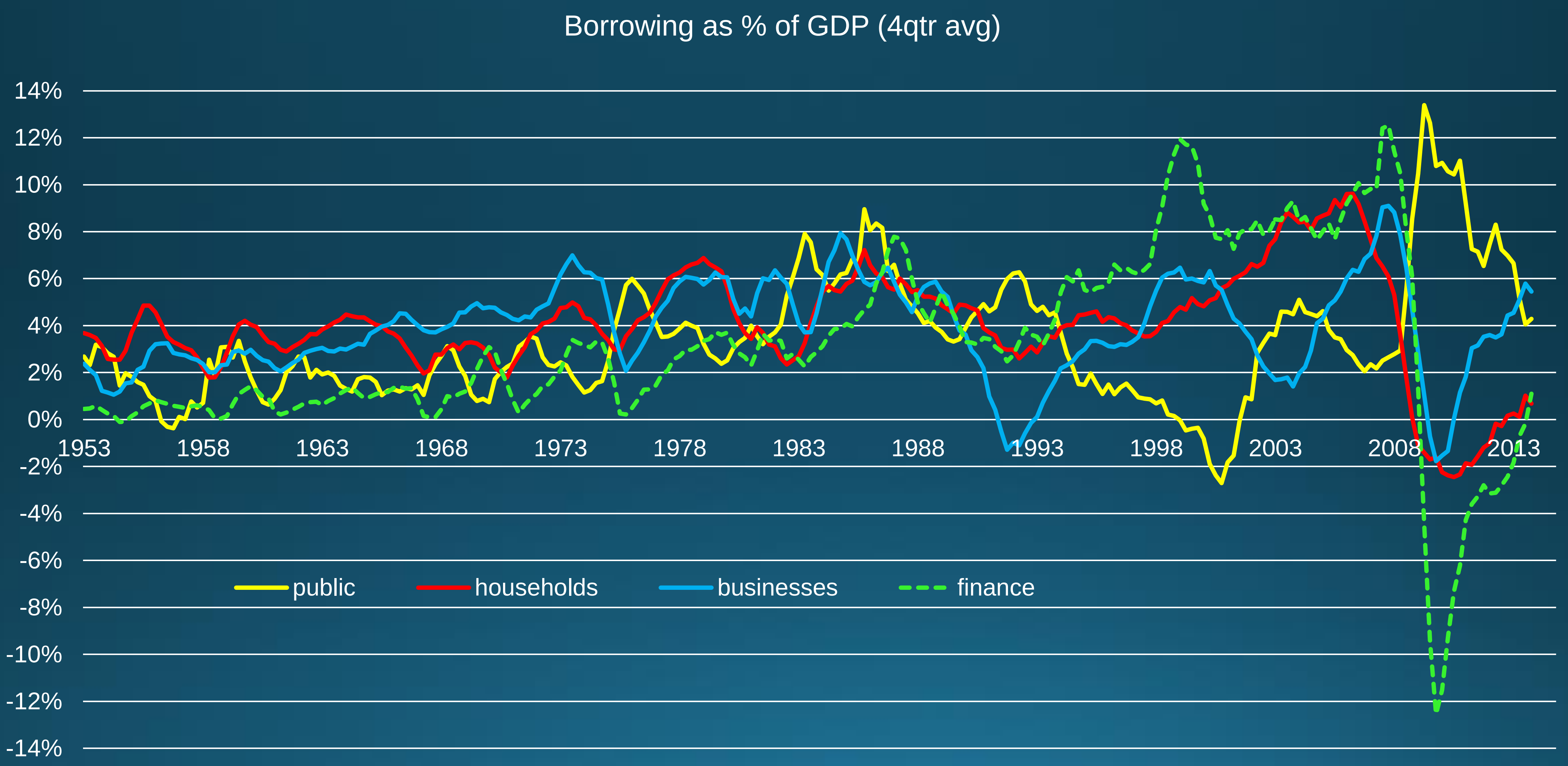
- Credit allows companies to invest and households to borrow against future income.
- Excess credit growth cannot be justified by growth opportunities and future income.
- Excess credit is a problem:
  - It can lead the economy to grow above potential leading to a possible misallocation of resources that may damage future productivity growth.
  - Greater vulnerabilities to shocks and downturns—procyclical prices can lead to destabilizing debt deflation.
  - A cyclical confidence accelerator? Expectations for income growth and asset returns may becomes unrealistically high in the buildup phase and possibly prone to excessive pessimism during the deleveraging.
- Flow and stock both matter: the amount of buildup prior to the recession, and the real time flow of credit during the recovery

The US recovery has outperformed despite the severity of the crisis



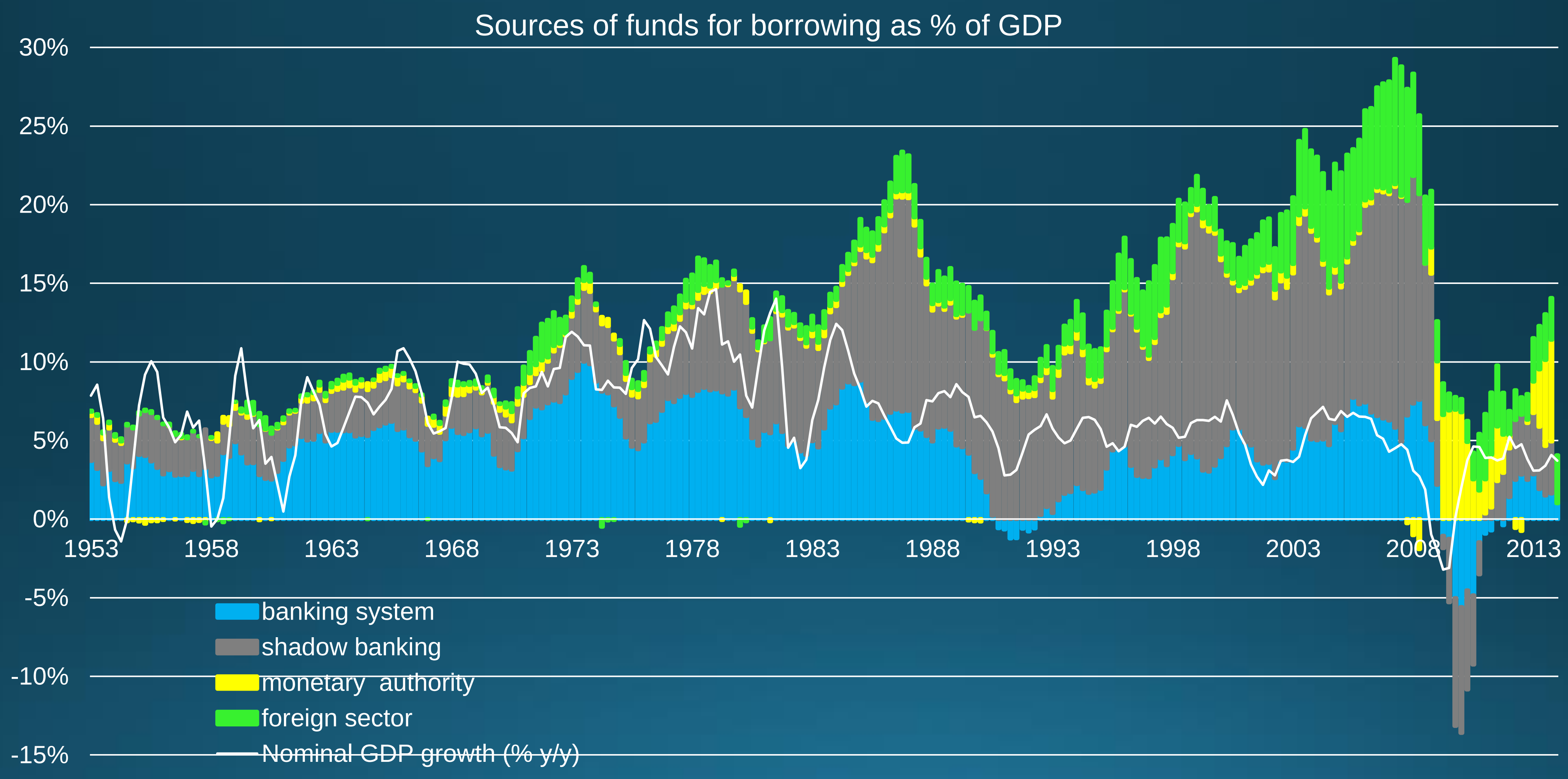
Source: Federal Reserve, Haver Analytics

Uses of funds: Perverse patterns of borrowing persist



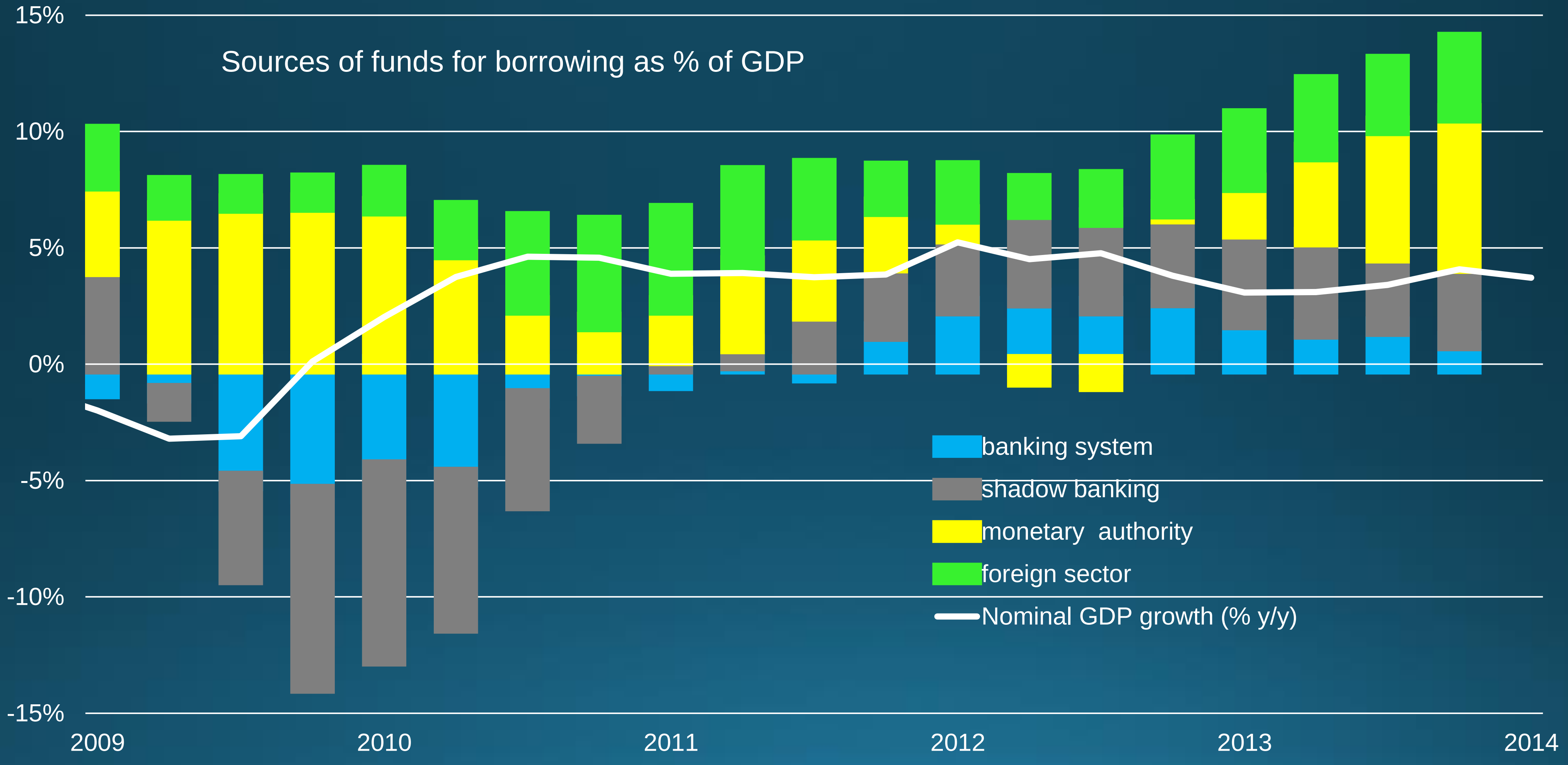
Source: Federal Reserve, Haver Analytics

Sources of funds: shadow banking drove leverage, QE has been a stabilizing force



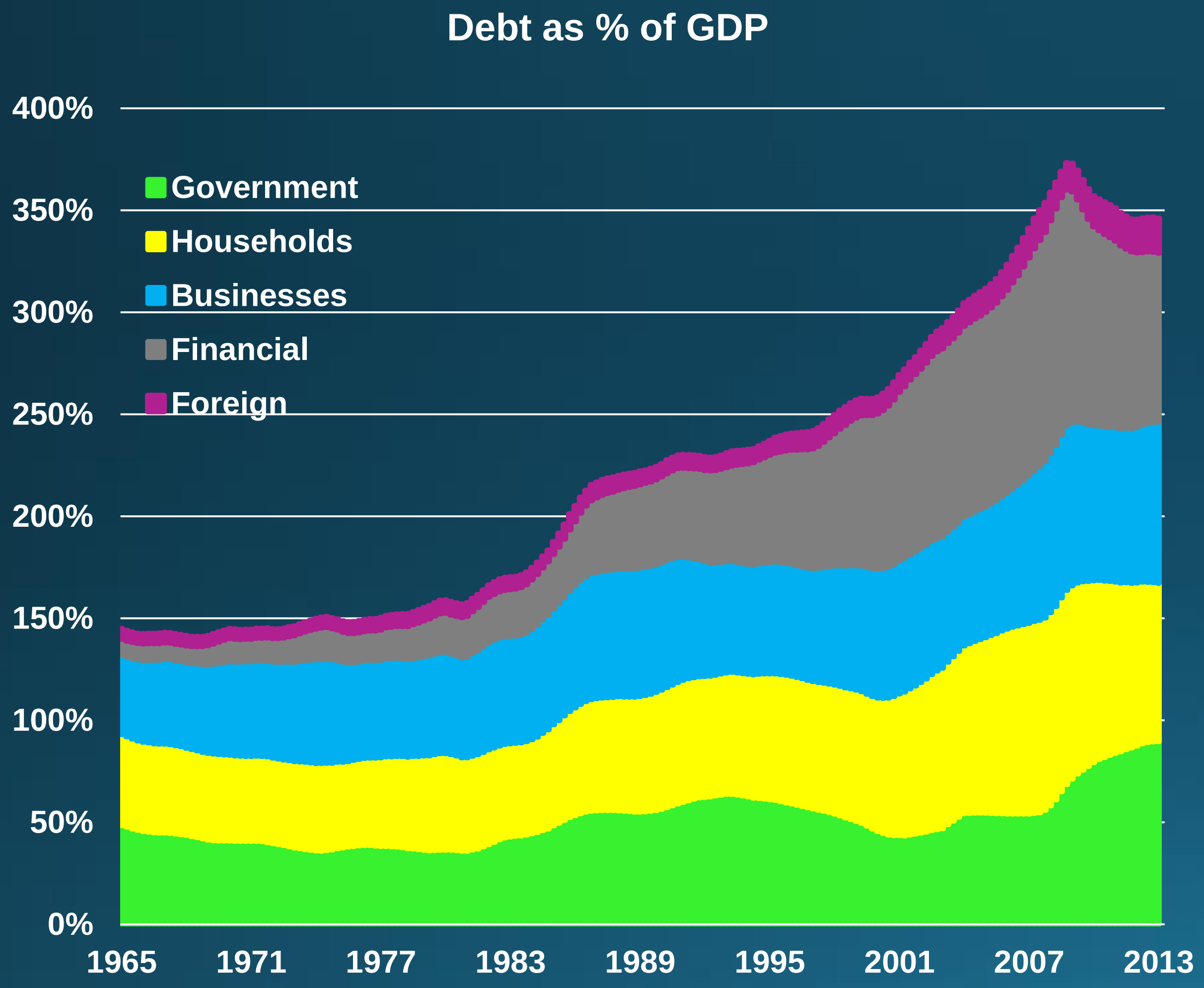
Source: Federal Reserve, Haver Analytics

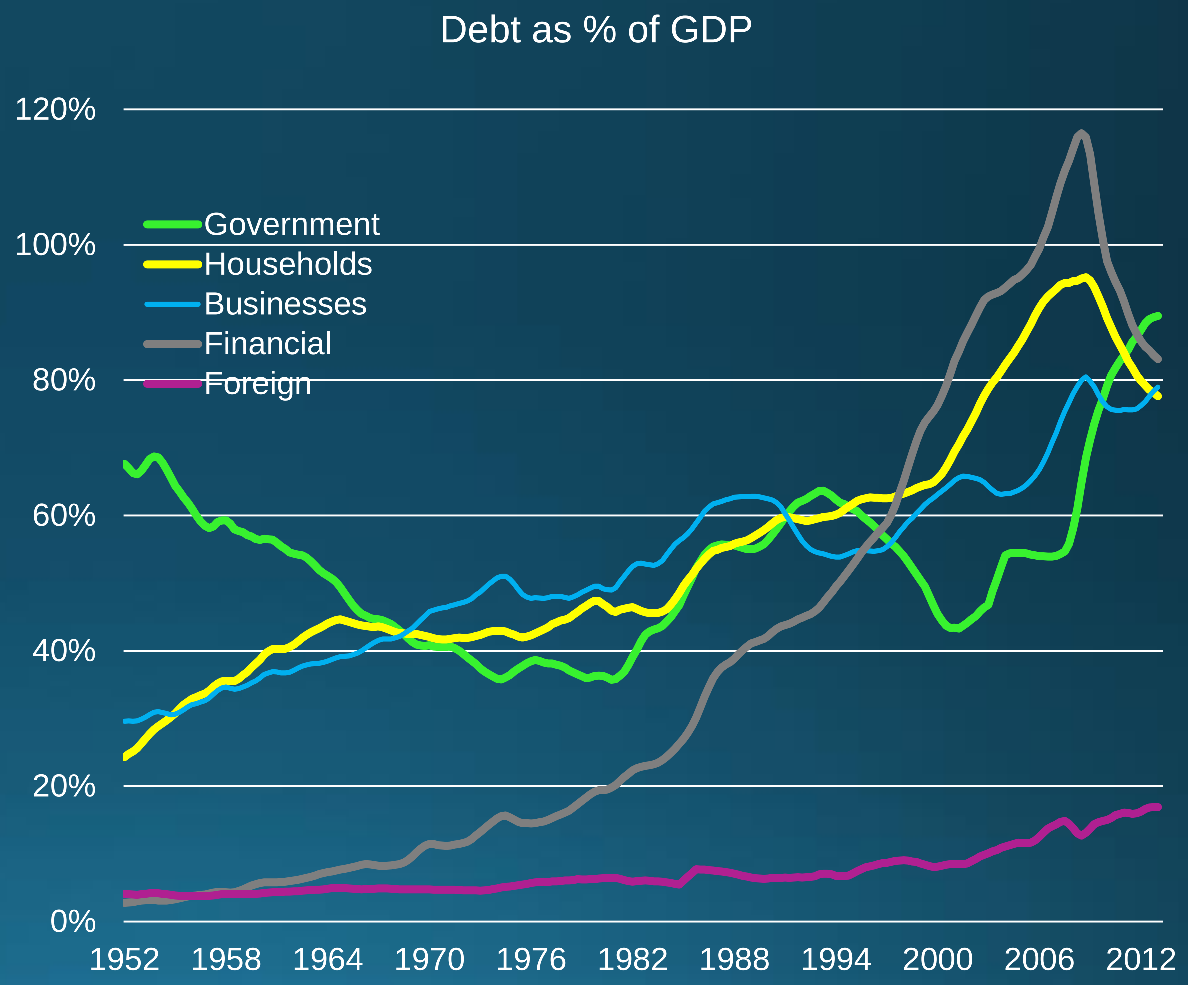
The Fed is still the largest source of funding, who will step up in 2014?



Source: Federal Reserve, Haver Analytics

Levels matter too, only back to 2008 overall



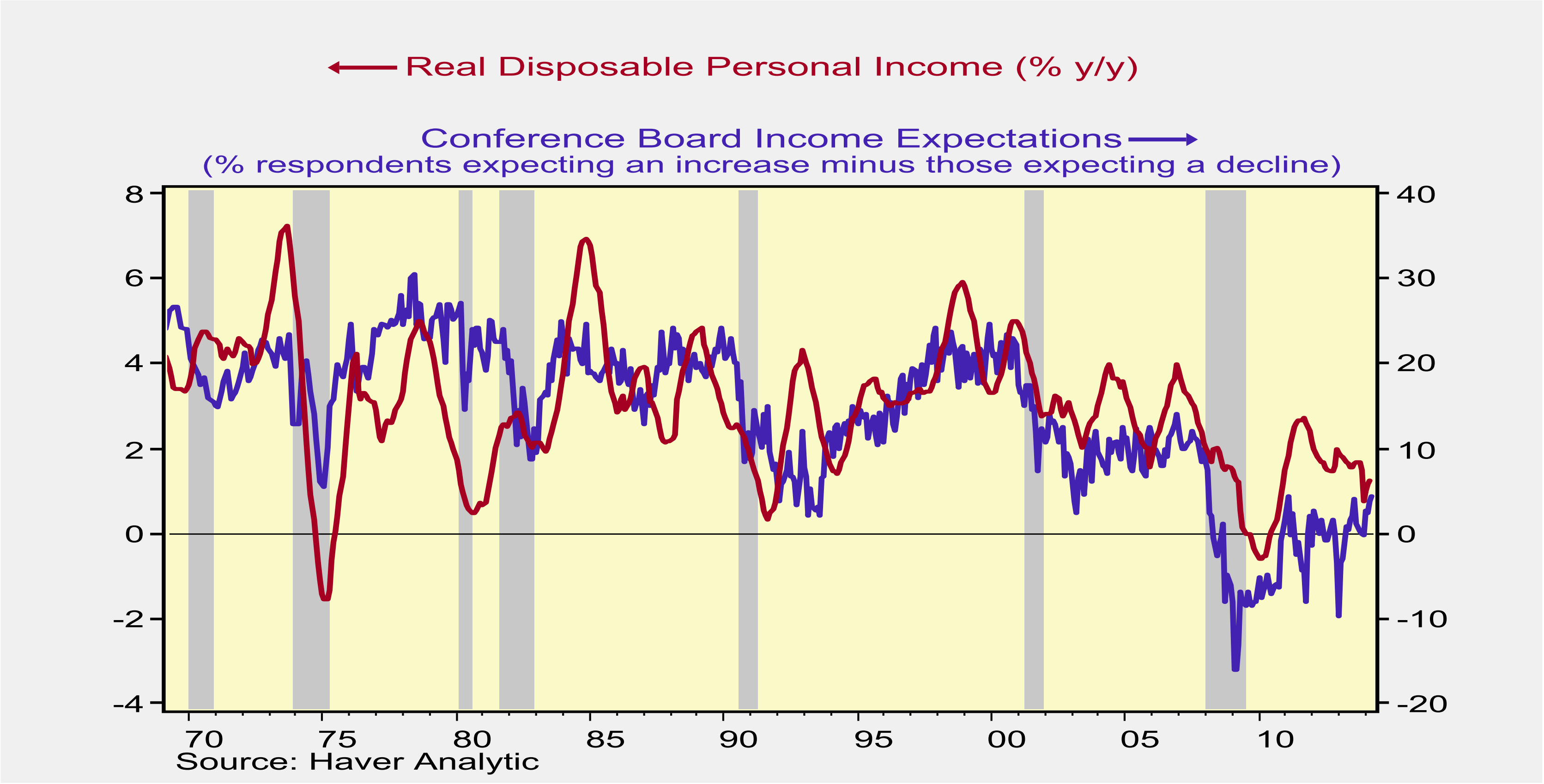


Source: Federal Reserve, Haver Analytics

New normal, secular stagnation, whatever you want to call it

- San Francisco Fed President John Williams noted at a Brookings speech in January that relying on post-war empirical analysis has led us to misunderstand the dynamics of the current recovery
- New York Fed President Bill Dudley listed a number of headwinds restraining the current recovery, all of which were credit related: the number of households underwater on their mortgages, tight credit standards, low credit quality of borrowers.
- Financial and credit conditions still matter in a way that is not well understood. Conclusions based on post-war econometric models should be taken with a grain of salt. Notions of pent up demand are inappropriate for a deleveraging cycle

What will come after consumer deleveraging?



- Will household still unsure about future income prospects be eager to take on new obligations?
- Will business invest in new capacity and not just increased efficiency without stronger demand?

Some final comments on the outlook

- A focus on the fading fiscal drag assumes all else is equal, it is not
  - The 1.1pp decline in the savings rate last year with no increase I leverage highlights the boost from a (mainly equity) wealth effect that will diminish in 2014
  - The sensitivity of households to higher mortgage rates highlight the lack of willingness to borrow against an uncertain future
  - Healing is real, but still gradual.
- Financial markets are doubting the cyclical upswing scenario, even with relatively benign data.
- Is the global credit cycle turning to China?