ALHAMBRA INVESTMENTS

MACRO Voices
with hedge fund manager Erik Townsend

EURODOLLAR UNIVERSITY

Global ‘Currency’

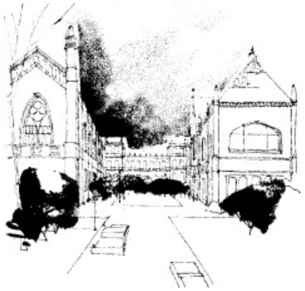
Widely Perceived	Eurodollar System
Central bank is central	Credit-based OFFSHORE system
Money multiplier, deposit-based	Reserve-less, currency-less ledger money
Traditional reserve pyramid	Wholesale, interbank; dynamic bank liabilities
Individual economies are closed systems	Globalized economy intricately linked
Gold Exchange (BW) replaced by US$	Gold Exchange (BW) replaced by Euro$
Bretton Woods ended in 1971	Transition to eurodollar-based system 1950's and 1960's

Global eurodollar System

Selected Papers . No. 34

The
Euro-Dollar
Market:
Some First
Principles

By MILTON FRIEDMAN



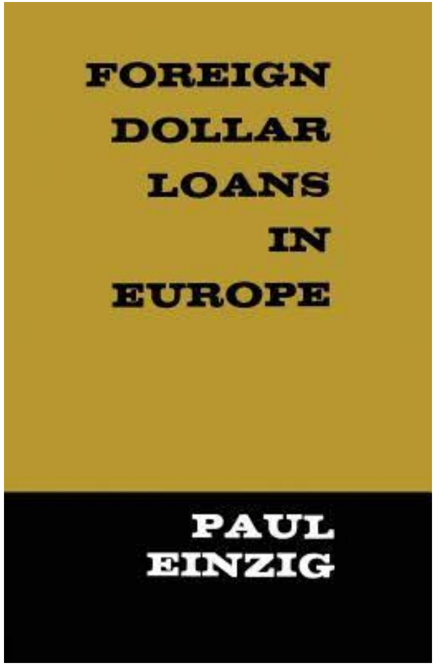
GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CHICAGO

"Recently, I heard a high official of an international financial organization discuss the Euro-dollar market before a collection of high-powered international bankers. He estimated that Euro-dollar deposits totaled some $30 billion. He was then asked: "What is the source of these deposits?" His answer was: partly, U.S. balance-of-payments deficits; partly, dollar reserves of non-U.S. central banks; partly, the proceeds from the sale of Euro-dollar bonds.

This answer is almost complete nonsense.

Milton Friedman
The Euro-Dollar Market: Some First Principles
Morgan Guaranty Survey: October 1969; Republished July 1971

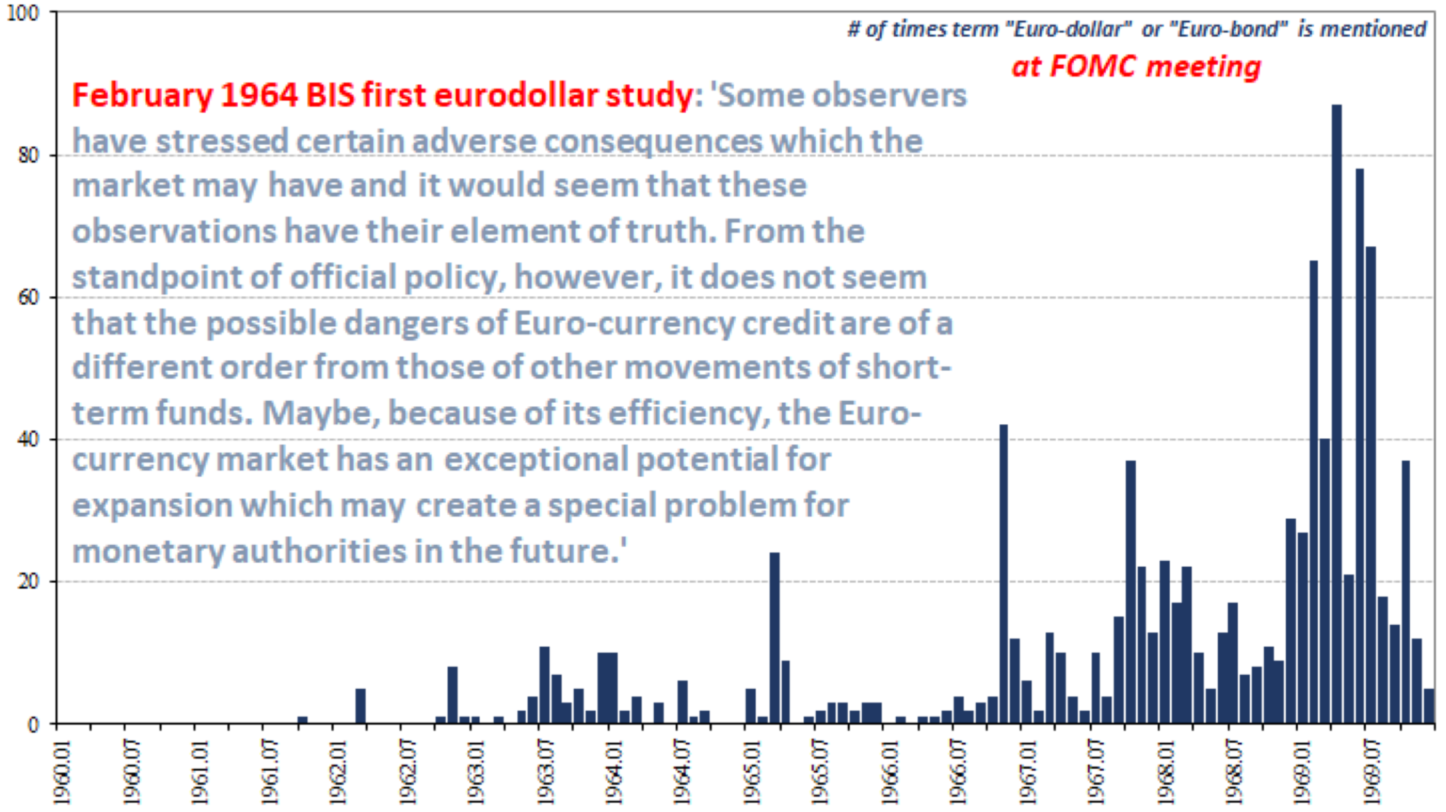
Global eurodollar System



"The Eurodollar market was for years hidden from economists and other readers of the financial press by a remarkable conspiracy of silence. I stumbled on its existence by sheer accident in October 1959, and when I embarked on an enquiry about it in London banking circles several bankers emphatically asked me not to write about the new practice.

Paul Einzig
Foreign Dollar Loans In Europe
1965

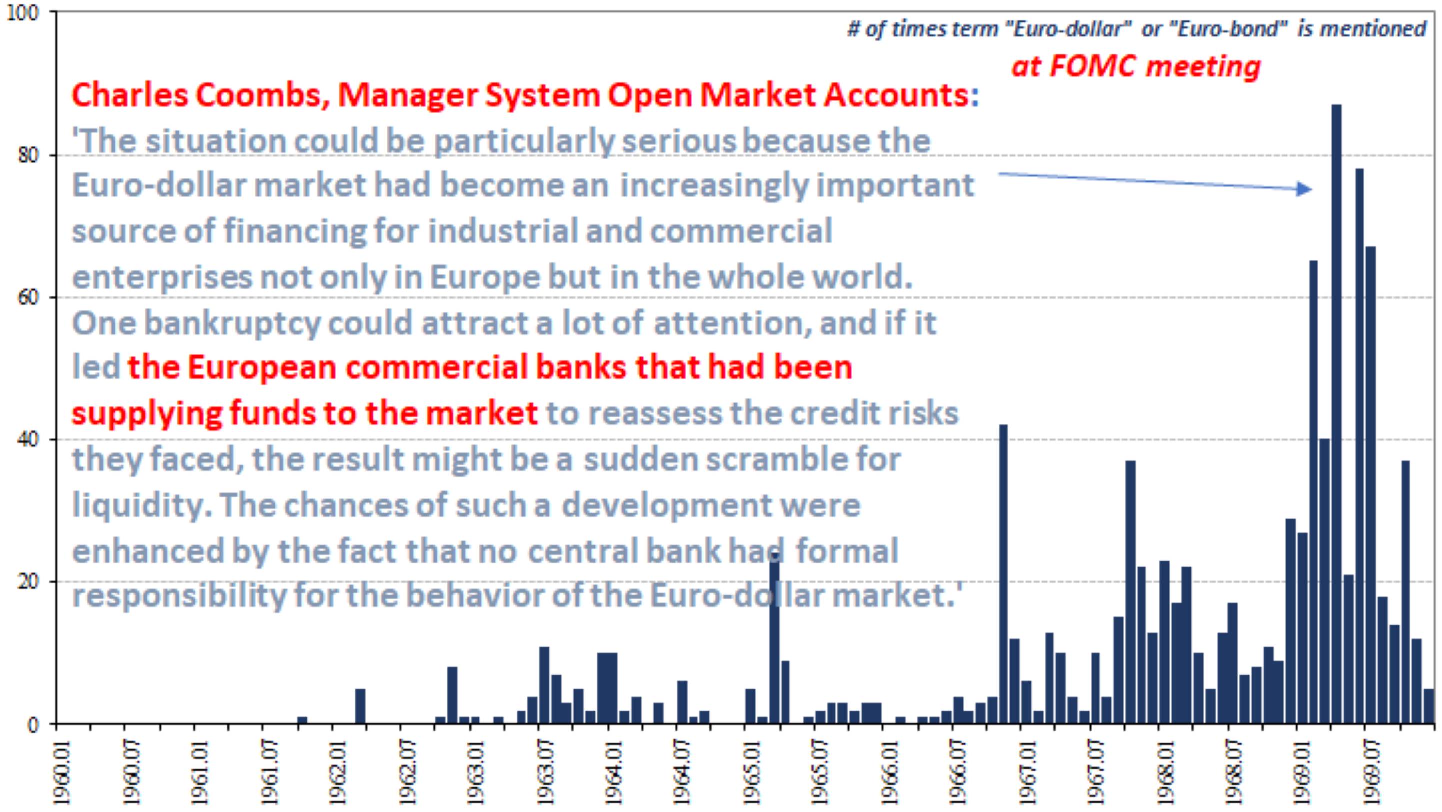
Late Official Recognition of Eurodollar



ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

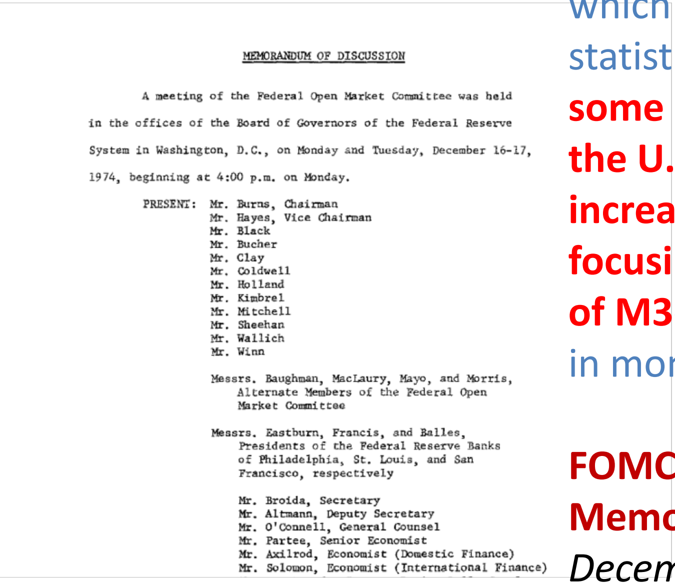
Late Official Recognition of Eurodollar



ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

Missing shadow Money


MEMORANDUM OF DISCUSSION

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Monday and Tuesday, December 16-17, 1974, beginning at 4:00 p.m. on Monday.

PRESENT: Mr. Burns, Chairman
Mr. Hayes, Vice Chairman
Mr. Black
Mr. Bucher
Mr. Clay
Mr. Coldwell
Mr. Holland
Mr. Kimbrel
Mr. Mitchell
Mr. Sheehan
Mr. Wallich
Mr. Winn

Messrs. Baughman, MacLaury, Mayo, and Morris, Alternate Members of the Federal Open Market Committee

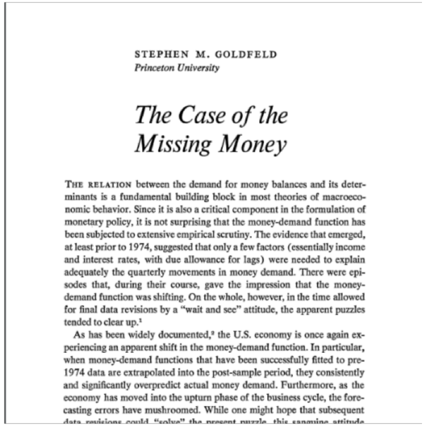
Messrs. Eastburn, Francis, and Balles, Presidents of the Federal Reserve Banks of Philadelphia, St. Louis, and San Francisco, respectively

Mr. Broida, Secretary
Mr. Altmann, Deputy Secretary
Mr. O'Connell, General Counsel
Mr. Partee, Senior Economist
Mr. Axilrod, Economist (Domestic Finance)
Mr. Solomon, Economist (International Finance)

"In reply, Mr. Coombs said an effort could be made to develop such a measure, but he doubted that it would be successful. The volume of funds which might be shifted back and forth between the of the monetary statistics **arose in connection with Euro-dollars**; **he suspected that at least some part of the Euro-dollar-based money supply should be included in the U.S. money supply**. More generally, he thought **M1 was becoming increasingly obsolete as a monetary indicator. The Committee should be focusing more on M2, and it should be moving toward some new version of M3**--especially because of the participation of nonbank thrift institutions in money transfer activities.

FOMC
Memorandum of Discussion
December 1974

Missing **shadow** **Money**



STEPHEN M. GOLDFELD
Princeton University

The Case of the Missing Money

THE RELATION between the demand for money balances and its determinants is a fundamental building block in most theories of macroeconomic behavior. Since it is also a critical component in the formulation of monetary policy, it is not surprising that the money-demand function has been subjected to extensive empirical scrutiny. The evidence that emerged, at least prior to 1974, suggested that only a few factors (essentially income and interest rates, with due allowance for lags) were needed to explain adequately the quarterly movements in money demand. There were episodes that, during their course, gave the impression that the money-demand function was shifting. On the whole, however, in the time allowed for final data revisions by a "wait and see" attitude, the apparent puzzles tended to clear up.[1]

As has been widely documented,[2] the U.S. economy is once again experiencing an apparent shift in the money-demand function. In particular, when money-demand functions that have been successfully fitted to pre-1974 data are extrapolated into the post-sample period, they consistently and significantly overpredict actual money demand. Furthermore, as the economy has moved into the upturn phase of the business cycle, the forecasting errors have mushroomed. While one might hope that subsequent

> “The results of this paper are difficult to characterize. Insofar as the objective was an improved specification of the demand function for M1, capable of explaining the current **shortfall in money demand**, the paper is rather a failure. Specifications that seem most reasonable on the basis of earlier data are not the ones that make a substantial dent in explaining the recent data.

Stephen M. Goldfeld
Princeton University
The Case of the Missing Money
1976

Global eurodollar System

Exchange Rate Arrangements in the Eighties

Robert V. Roosa*

Literally dozens of international conferences have been convened already in the decade of the eighties to deplore "the failure of Bretton Woods" and to call for bold new reforms. It seems to me a calumny, though, to attribute failure to either of the Bretton Woods institutions, or to any of the supplemental facilities added to their scope over the past 40 years. The only trace of failure is to be found in that one segment of the international financial system that has been assigned to me for this symposium—exchange rate arrangements. And I am going to suggest that even the system of par value exchange rates envisaged here on Mt. Washington in 1944, and broadly realized across the world by 1958, only broke down in the early seventies because it had already by that time successfully promoted a remarkable diversity of growth in the incomes and trade of the principal participating countries. What is more, an increasing number of participants in the international markets for money and goods, after living with the resulting nonsystem of floating exchange rates for over a decade, are beginning to yearn for the comparative orderliness and stability which their idealized memories associate with "the days of Bretton Woods."

My own view is that for the rest of the eighties, and no doubt for even longer, the preoccupation of most of the world, so far as exchange rate matters are concerned, will be in finding ways back to the objectives—though

"But this combination of improvisations could not cope with, and indeed may have contributed to, the enormous expansion in markets for U.S. dollars offshore, and the **new networks of interbank relations that made possible the creation of additional supplies of dollars outside the United States and beyond the control of the Federal Reserve**. The 'offshore' currency markets soon became securities markets and, spurred by the U.S. effort to maintain control over capital exports from the United States, markets in Eurodollar securities flourished.

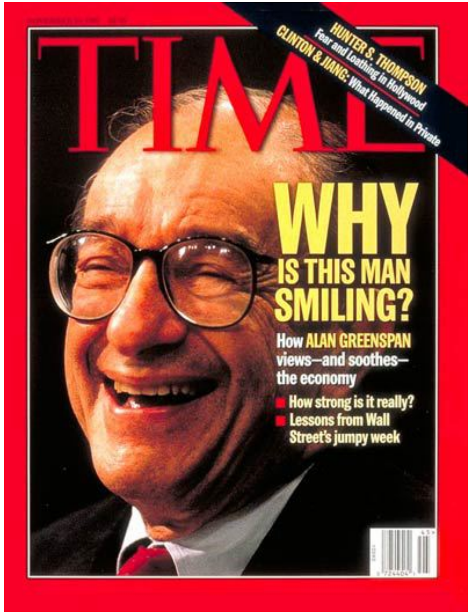
Robert Roosa

The International Monetary System: Forty Years After Bretton Woods
Conference at Bretton Woods sponsored by Federal Reserve Bank of Boston
May 1984

ALHAMBRA INVESTMENTS

MACRO Voices
with hedge fund manager Erik Townsend

Missing shadow Money



“The problem is that we cannot extract from our statistical database what is true money conceptually, either in the transactions mode or the store-of-value mode. One of the reasons, obviously, is that **the proliferation of products has been so extraordinary that the true underlying mix of money in our money and near money data is continuously changing**. As a consequence, while of necessity it must be the case at the end of the day that inflation has to be a monetary phenomenon, **a decision to base policy on measures of money presupposes that we can locate money. And that has become an increasingly dubious proposition**.

Alan Greenspan
FOMC Meeting Transcript
June 2000

ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

EURODOLLAR

Bank H of London + Bank R, Cumulative

Assets		Liabilities	
Cash	$ 1,000,000	Deposits	$ 10,000,000
	+ 100,000		+ 1,000,000
	+ 90,000		+ 900,000
US$ Loans	7,000,000	Due to other Banks	300,000
	+ 900,000		
	+ 810,000		
US$ Bonds	2,500,000	Capital Accounts	200,000
Total Assets	$12,400,000		$ 12,400,000

Morgan Guaranty NYC

Deposit Balances - Liabilities of Morgan

- 1,000,000	Sheik's Account
+ 100,000	Bank H of London
+ 90,000	UK Ltd. Account to Bank R to Morgan
+ 810,000	Loans from Bank R to Someone back to Morgan
$0	Total Change for Morgan Guaranty NYC

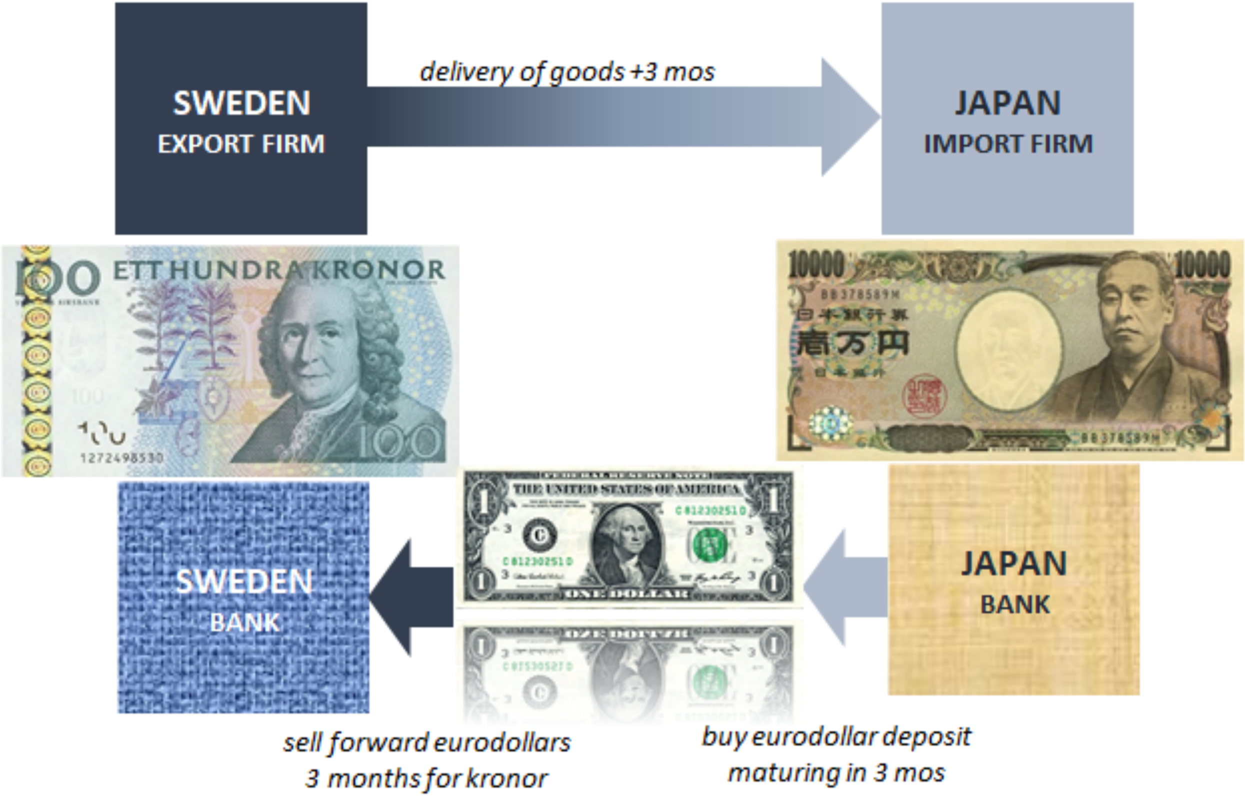
Calculated Money Supply of the US

- 1,000,000	Sheik's Account
+ 100,000	Bank H of London
+ 90,000	Bank R of London
+ 810,000	Ultimate Disposition of Loans
NO CHANGE	

FULL MULTIPLIER EFFECT (ASSUMING 10% RESERVES HELD BACK due to BANK CONSIDERATIONS)

TOTAL WORLD SUPPLY OF US$	+ 1,000,000	Sheik's Deposit at Bank H London
	- 1,000,000	Interbank Liabilities Between
	... total multipliers	Eurodollar Banks & NYC
Change in Total Supply Available to World	$ 9,000,000	

To **EVERY** banker in the multiplier chain, the additional Eurodollar deposit came in the form of a check from Morgan Guaranty NYC. There are now $10 of eurodollar claims on each $1 of Morgan Guaranty 'money.'


SWEDEN
EXPORT FIRM
delivery of goods +3 mos
JAPAN
IMPORT FIRM
SWEDEN
BANK
JAPAN
BANK
sell forward eurodollars
3 months for kronor
buy eurodollar deposit
maturing in 3 mos

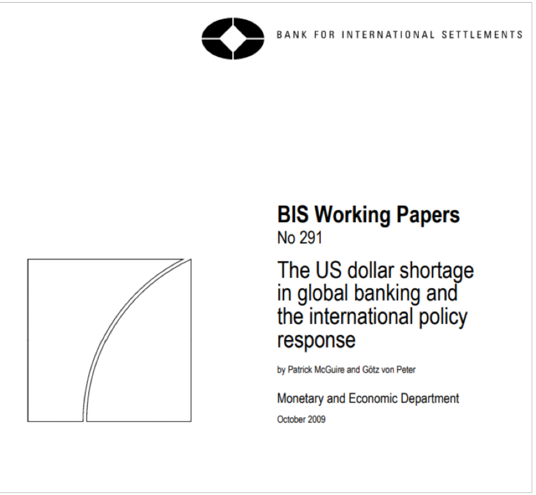

SWEDEN
BANK
JAPAN
BANK
sell forward eurodollars
3 months for kronor
buy eurodollar deposit
maturing in 3 mos
Eurodollar
Market
citi
MUFG
Bank of Tokyo-Mitsubishi UFJ
Deutsche Bank
HSBC

ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

Missing shadow Money

"The origins of the **US dollar shortage** during the crisis are linked to the expansion since 2000 in **banks' international balance sheets**. The outstanding stock of banks' foreign claims **grew from $10 trillion at the beginning of 2000 to $34 trillion by end-2007**, a significant expansion even when scaled by global economic activity. **The year-on-year growth in foreign claims approached 30% by mid-2007**, up from around 10% in 2001. **This acceleration took place during a period of financial innovation**, which included the emergence of structured finance, the spread of "universal banking"…


BANK FOR INTERNATIONAL SETTLEMENTS

BIS Working Papers

No 291

The US dollar shortage in global banking and the international policy response

by Patrick McGuire and Götz von Peter

Monetary and Economic Department

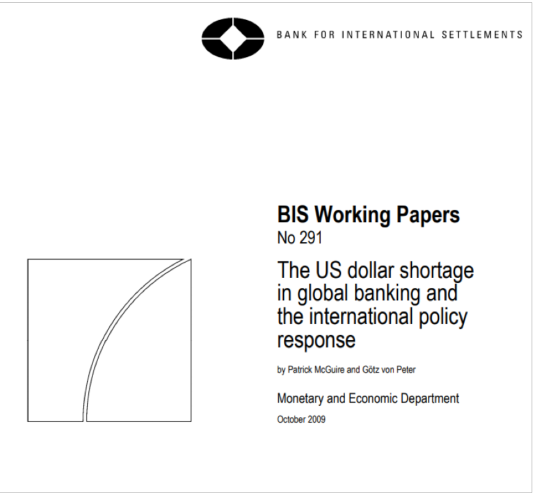
October 2009

BIS Working Papers

The US dollar shortage in global banking and the international policy response

October 14, 2009

Missing shadow Money


BANK FOR INTERNATIONAL SETTLEMENTS

BIS Working Papers
No 291

The US dollar shortage in global banking and the international policy response

by Patrick McGuire and Götz von Peter

Monetary and Economic Department

October 2009

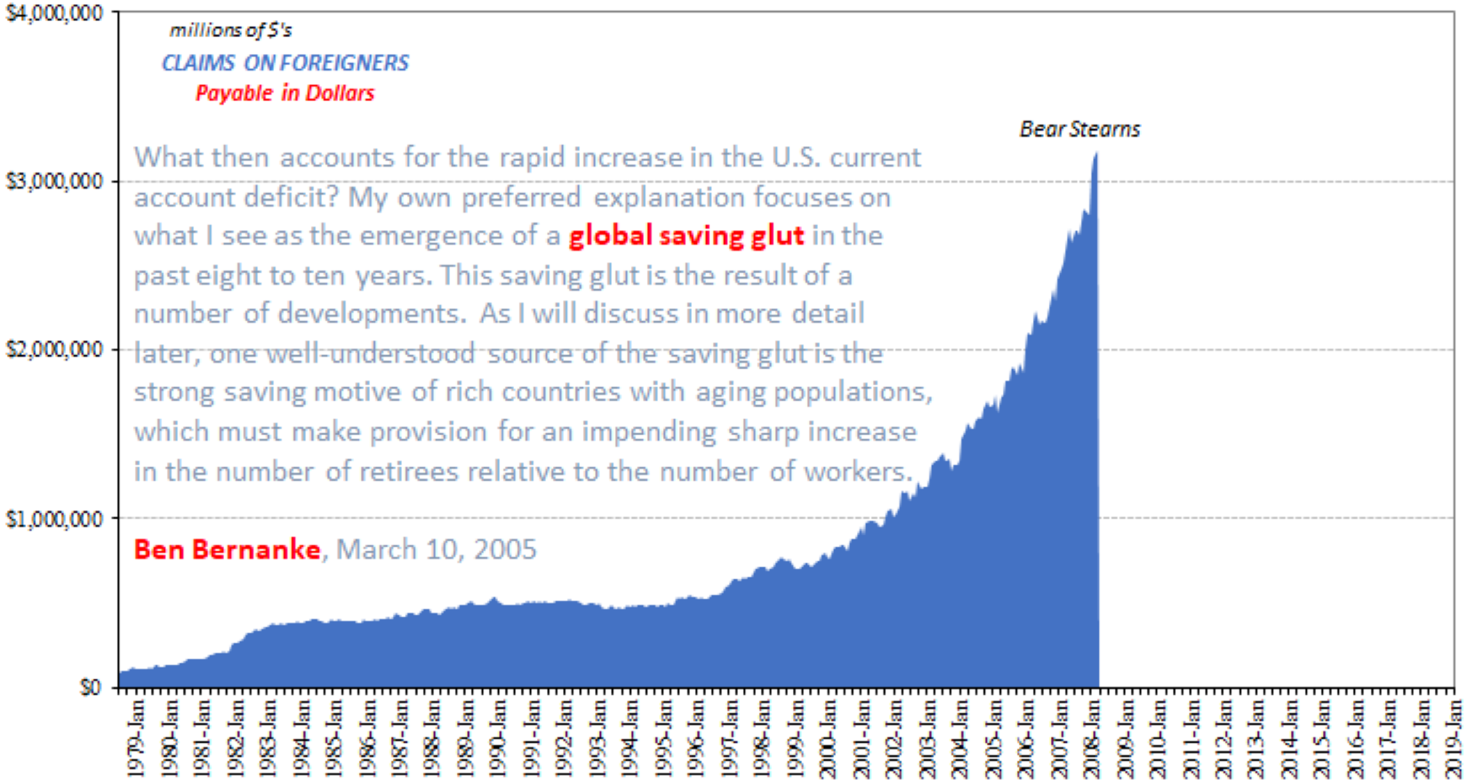
"Until the onset of the crisis, European banks had met this need by tapping the interbank market ($432 billion) and by borrowing from central banks ($386 billion), and used FX swaps ($315 billion) to convert (primarily) domestic currency funding into dollars. If we assume that these banks' liabilities to money market funds (roughly $1 trillion, Baba et al (2009)) are also short-term liabilities, then **the estimate of their US dollar funding gap in mid-2007 would be $2.0 – 2.2 trillion**. Were all liabilities to non-banks treated as short-term funding, **the upper-bound estimate would be $6.5 trillion**.

BIS Working Papers
The US dollar shortage in global banking and the international policy response
October 14, 2009

ALHAMBRA INVESTMENTS

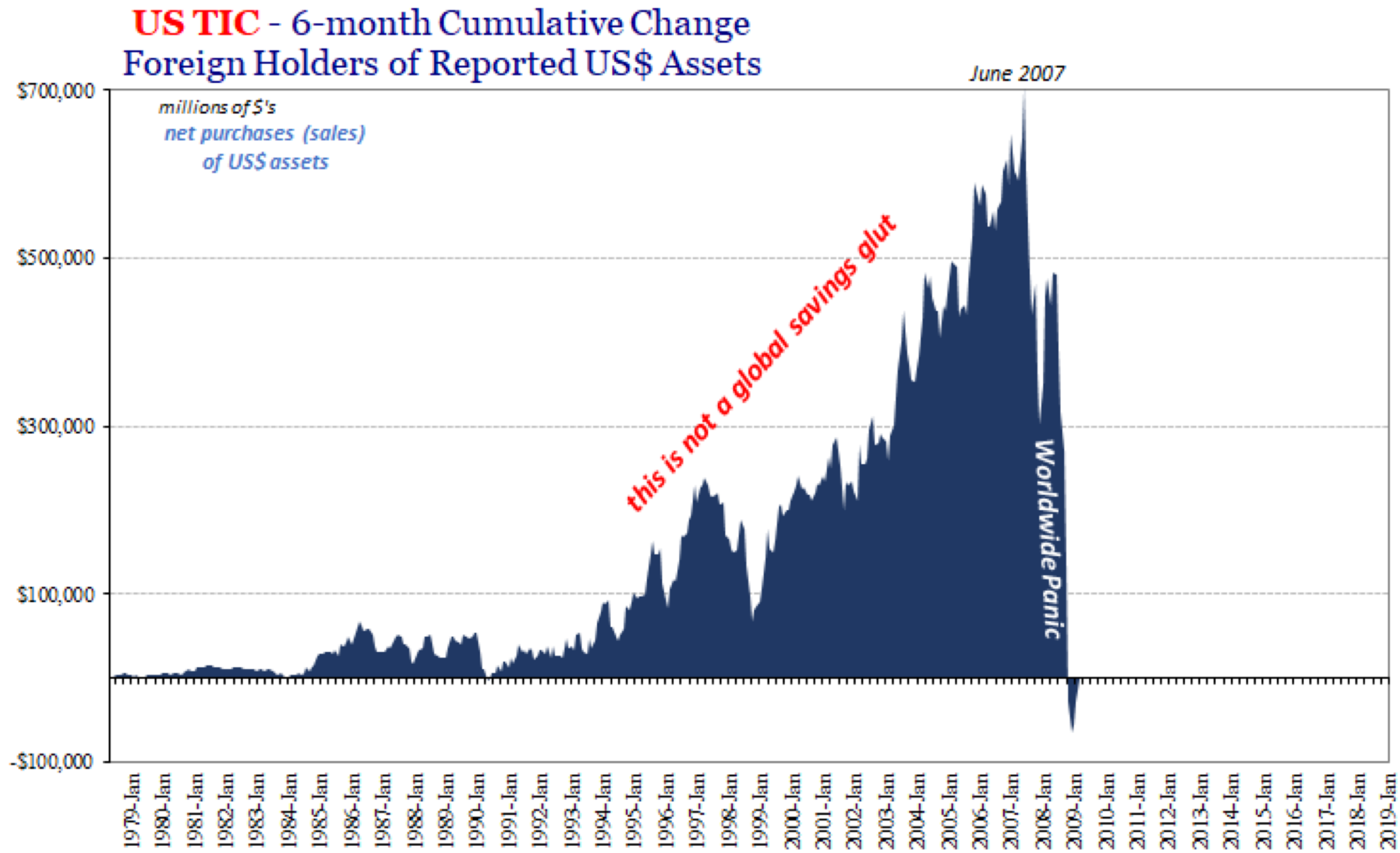
MACRO Voices with hedge fund manager Erik Townsend

TIC - US Banking Data



ALHAMBRA INVESTMENTS

MACRO Voices
with hedge fund manager Erik Townsend



ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

Missing shadow Money

"Prospective **subprime losses were clearly not large enough on their own to account for the magnitude of the crisis**. Rather, the system's vulnerabilities, together with gaps in the government's crisis-response toolkit, were the principal explanations of why the crisis was so severe and had such devastating effects on the broader economy.

CONCLUSIONS OF THE
FINANCIAL CRISIS INQUIRY COMMISSION

The Financial Crisis Inquiry Commission has been called upon to examine the financial and economic crisis that has gripped our country and explain its causes to the American people. We are keenly aware of the significance of our charge, given the economic damage that America has suffered in the wake of the greatest financial crisis since the Great Depression.

Our task was first to determine what happened and how it happened so that we could understand why it happened. Here we present our conclusions. We encourage the American people to join us in making their own assessments based on the evidence gathered in our inquiry. If we do not learn from history, we are unlikely to fully recover from it. Some on Wall Street and in Washington with a stake in the status quo may be tempted to wipe from memory the events of this crisis, or to suggest that no one could have foreseen or prevented them. This report endeavors to expose the facts, identify responsibility, unravel myths, and help us understand how the crisis could have been avoided. It is an attempt to record history, not to rewrite it, nor allow it to be rewritten.

To help our fellow citizens better understand this crisis and its causes, we also present specific conclusions at the end of chapters in Parts III, IV, and V of this report.

The subject of this report is of no small consequence to this nation. The profound events of 2007 and 2008 were neither bumps in the road nor an accentuated dip in the financial and business cycles we have come to expect in a free market economic system. This was a fundamental disruption—a financial upheaval, if you will—that wreaked havoc in communities and neighborhoods across this country.

As this report goes to print, there are more than 26 million Americans who are out of work, cannot find full-time work, or have given up looking for work. About four million families have lost their homes to foreclosure and another four and a half million have slipped into the foreclosure process or are seriously behind on their mortgage payments. Nearly $11 trillion in household wealth has vanished, with retirement accounts and life savings swept away. Businesses, large and small, have felt

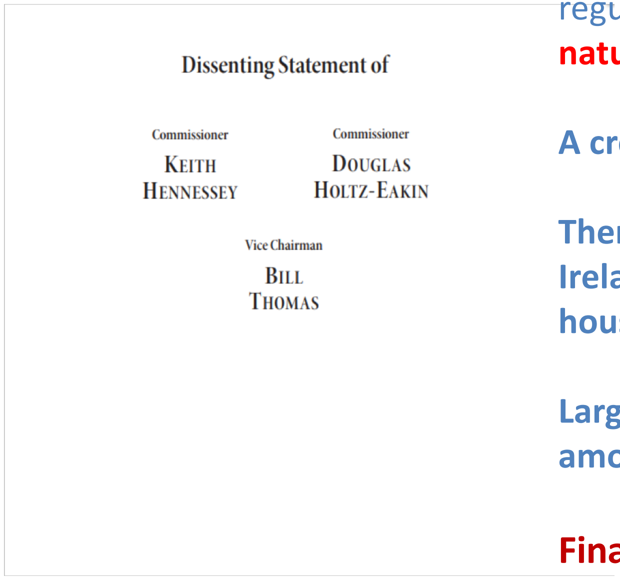
xv

Ben Bernanke

Chairman, Federal Reserve

Testimony to the Financial Crisis Inquiry Commission

Missing shadow Money


Dissenting Statement of

Commissioner KEITH HENNESSEY

Commissioner DOUGLAS HOLTZ-EAKIN

Vice Chairman BILL THOMAS

"The majority says the crisis was avoidable if only the United States had adopted across-the-board more restrictive regulations, in conjunction with more aggressive regulators and supervisors. This conclusion by the majority largely ignores **the global nature of the crisis**. For example:

A credit bubble appeared in both the United States and Europe.

There were housing bubbles in the United Kingdom, Spain, Australia, France and Ireland, some more pronounced than in the United States. Some nations with housing bubbles relied little on American-style mortgage securitization.

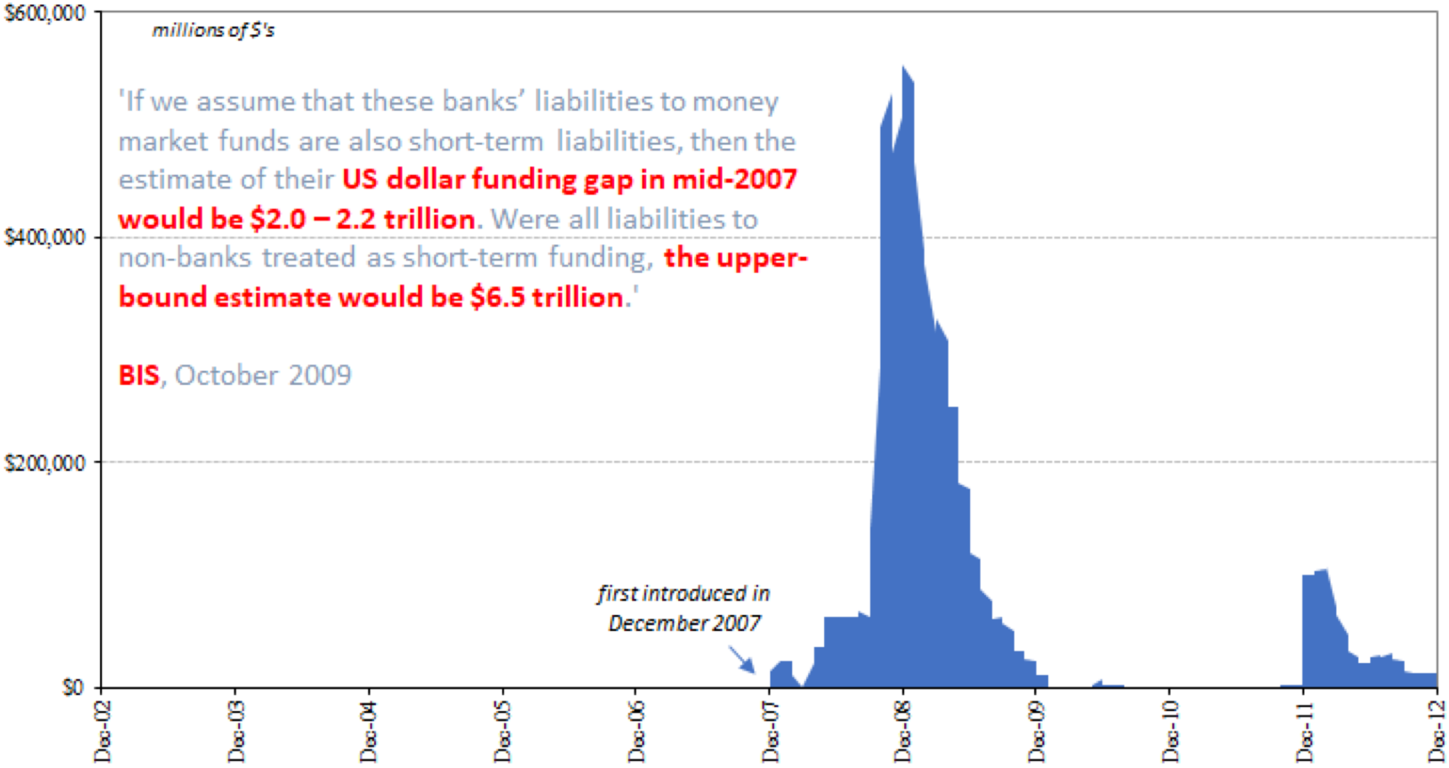
Large financial firms failed in Iceland, Spain, Germany, and the United Kingdom, among others.

Financial Crisis Inquiry Commission
Dissenting Statement

ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

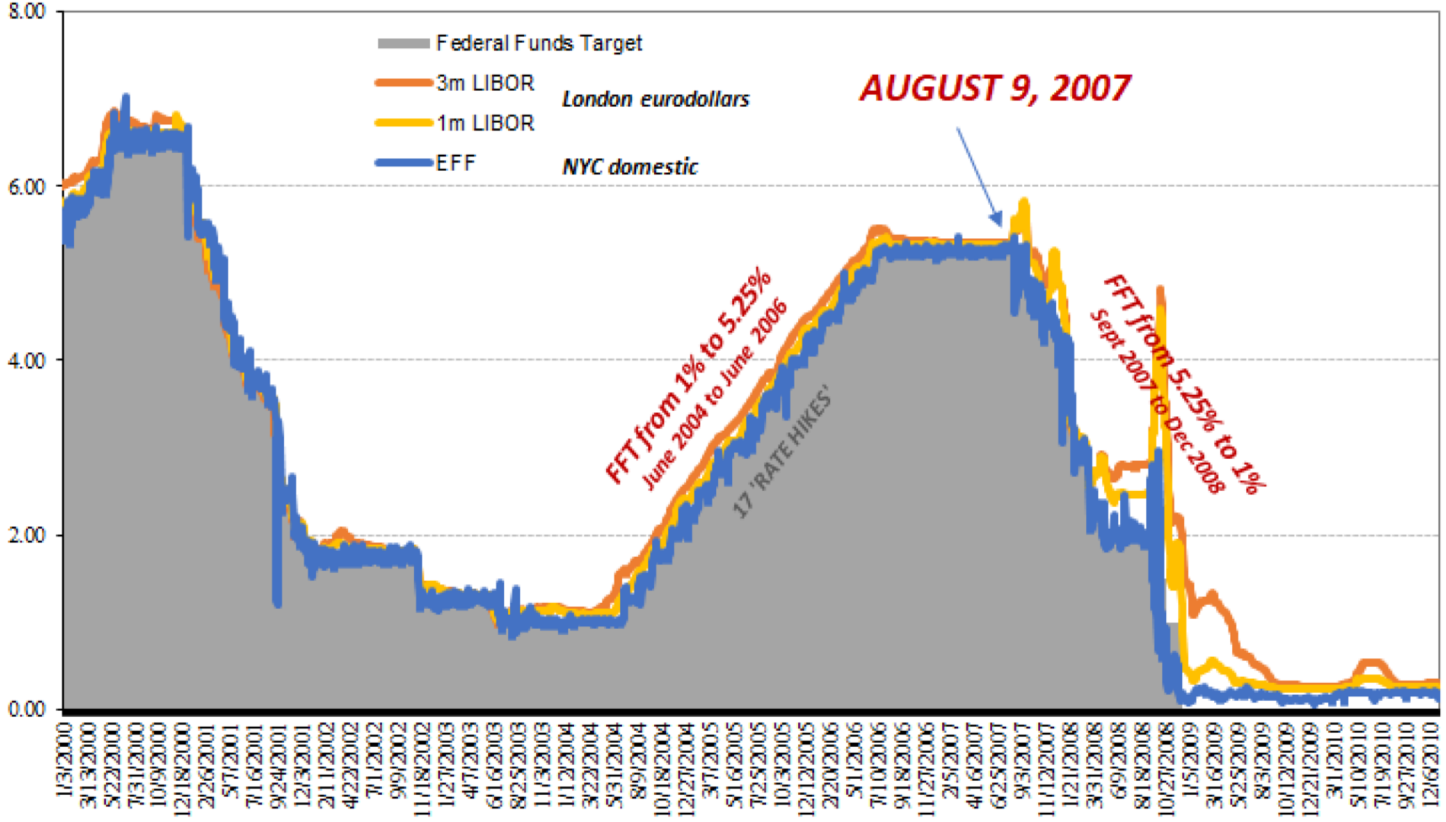
Federal Reserve; Assets; Central Bank Liquidity Swaps



ALHAMBRA INVESTMENTS

MACRO Voices
with hedge fund manager Erik Townsend

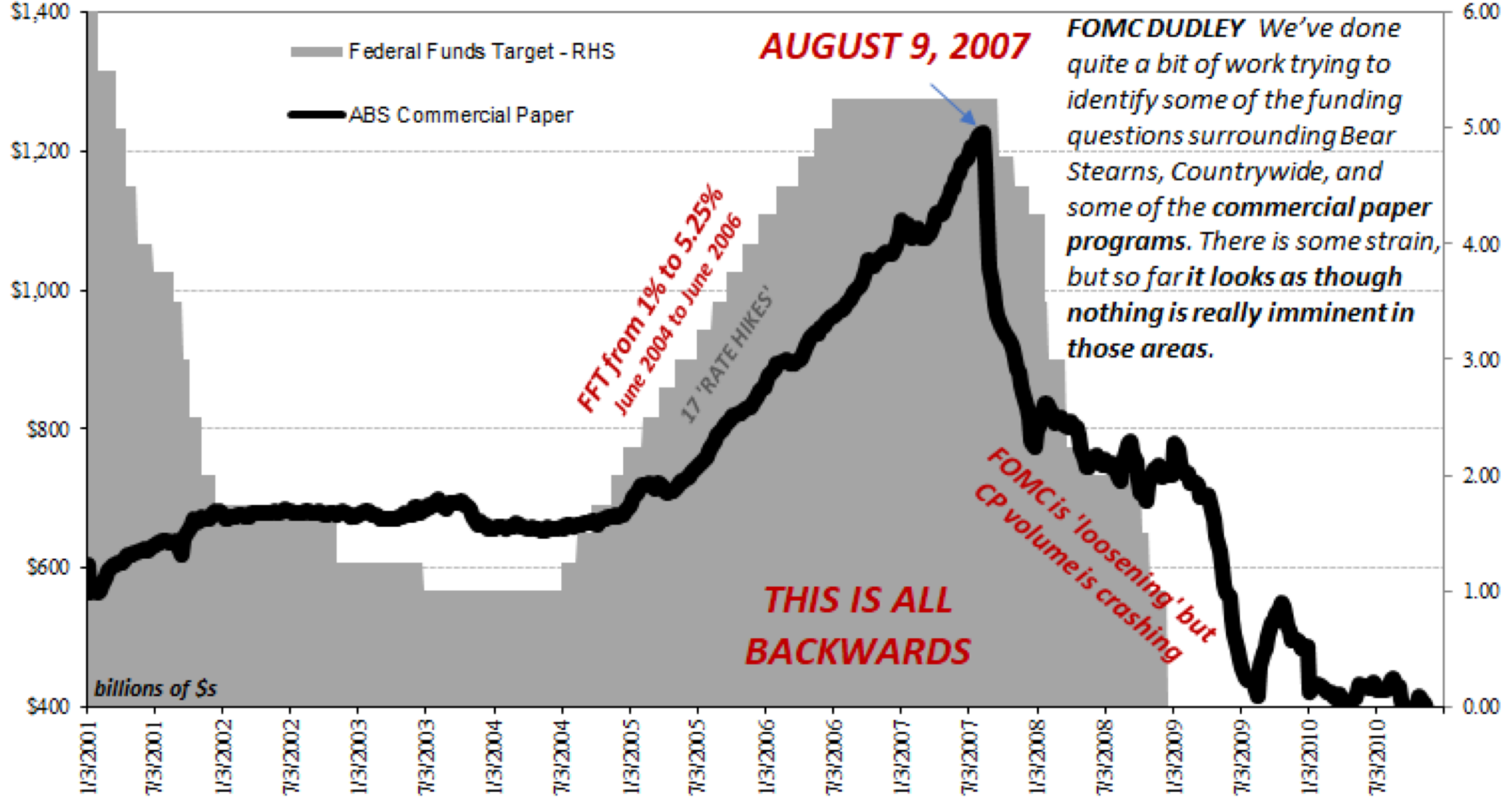
Global Dollar Market(s)



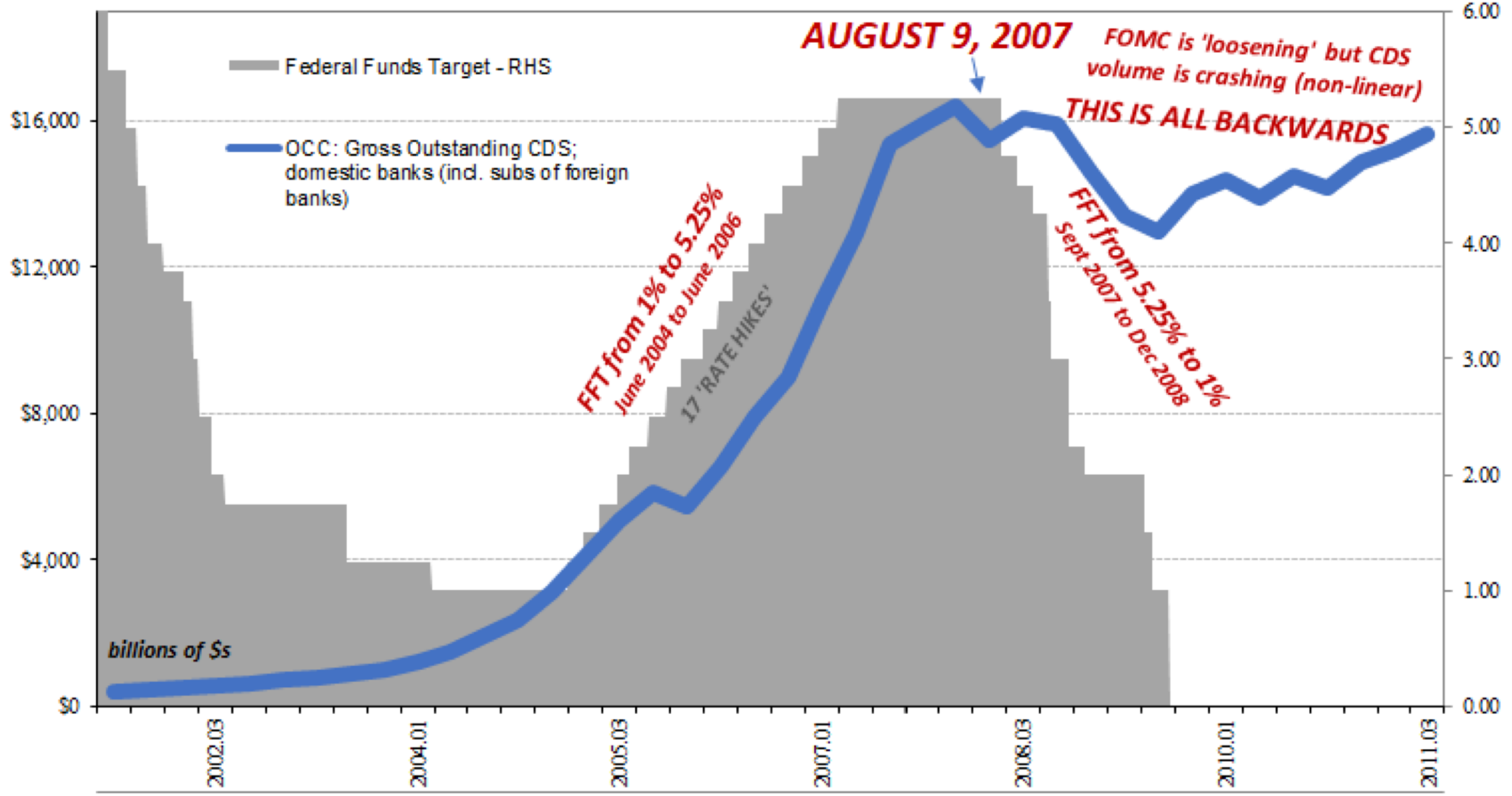
ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

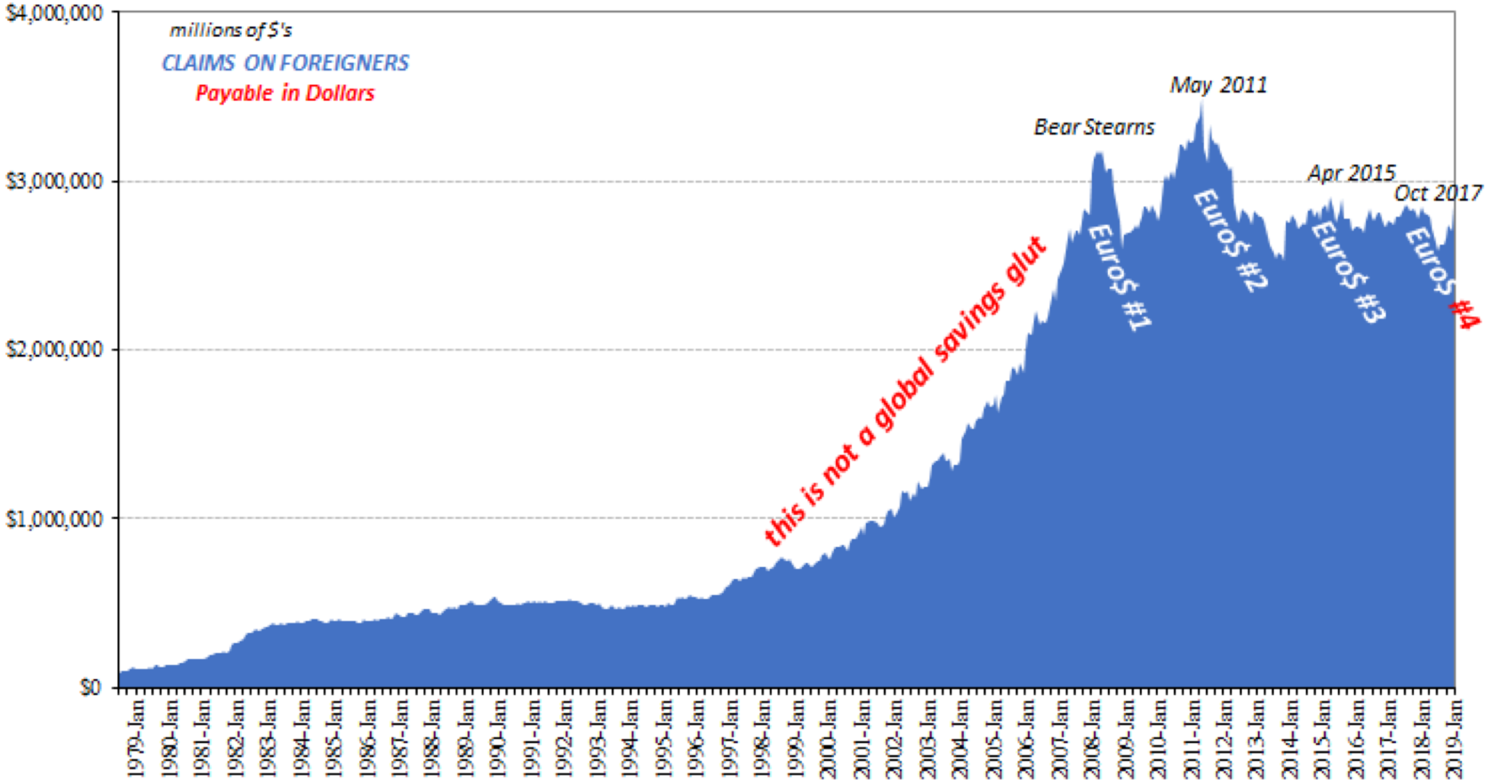
Global Dollar Market(s)



Global Dollar Market(s)

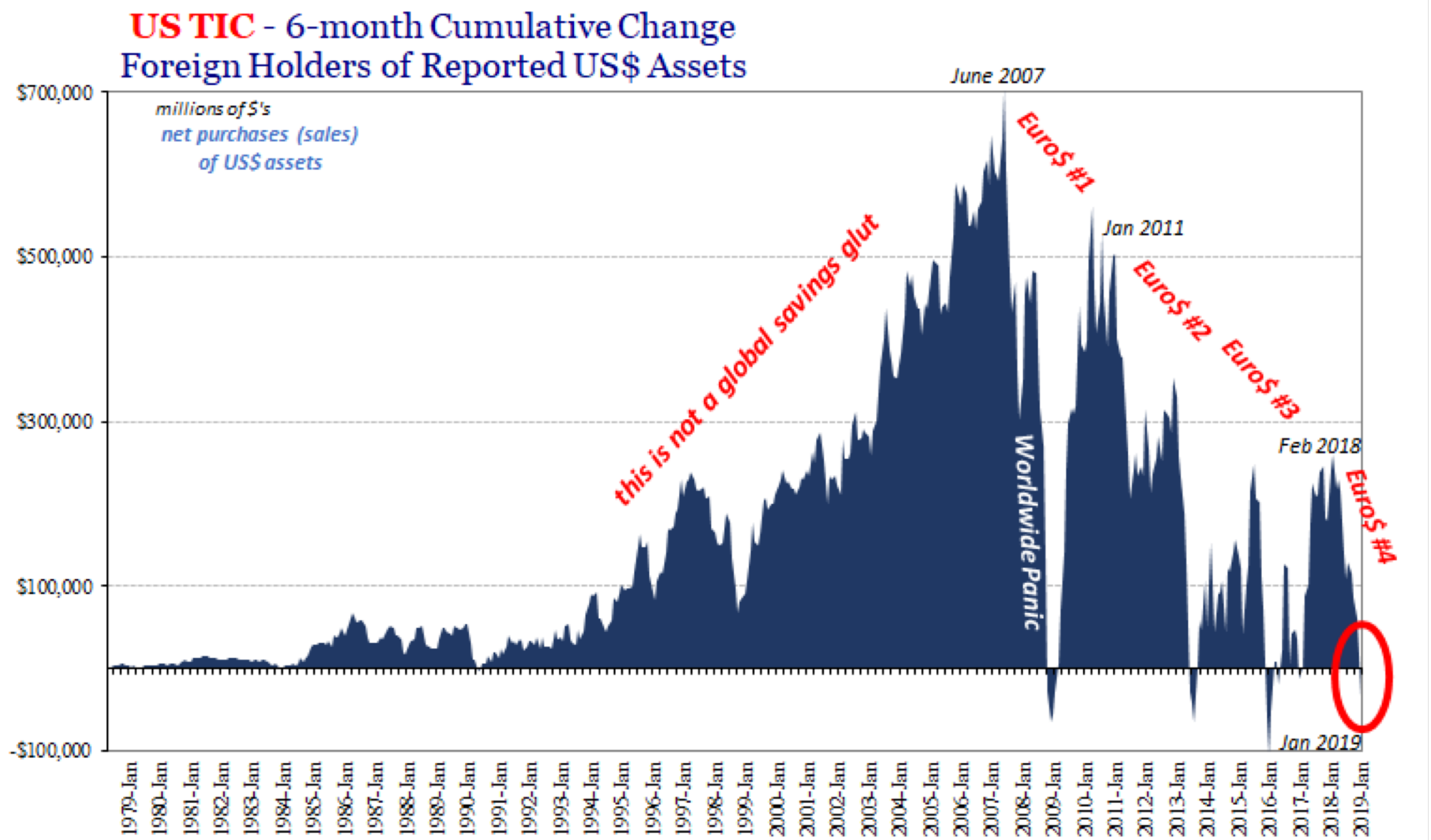


TIC - US Banking Data



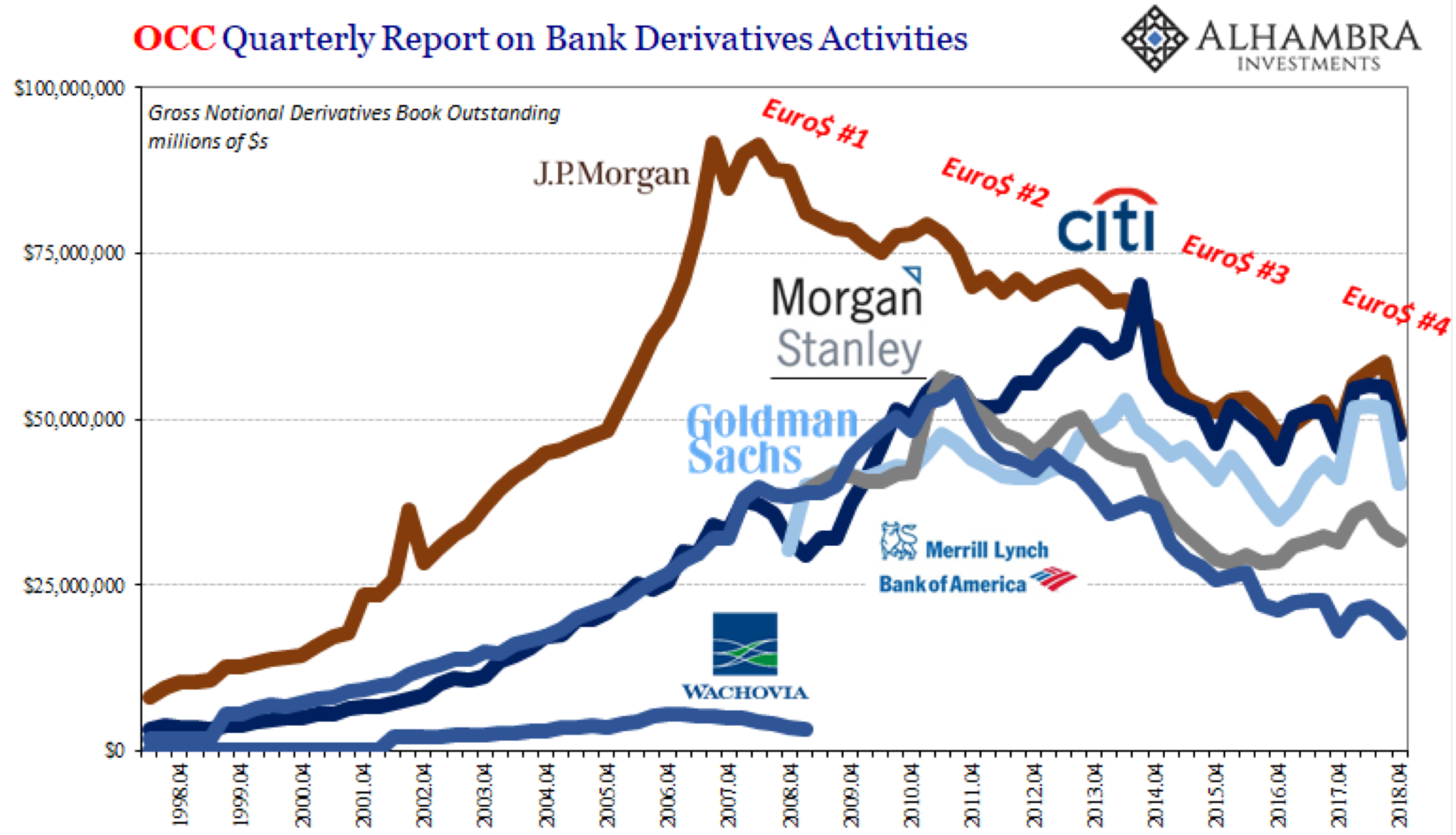
ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend



ALHAMBRA INVESTMENTS

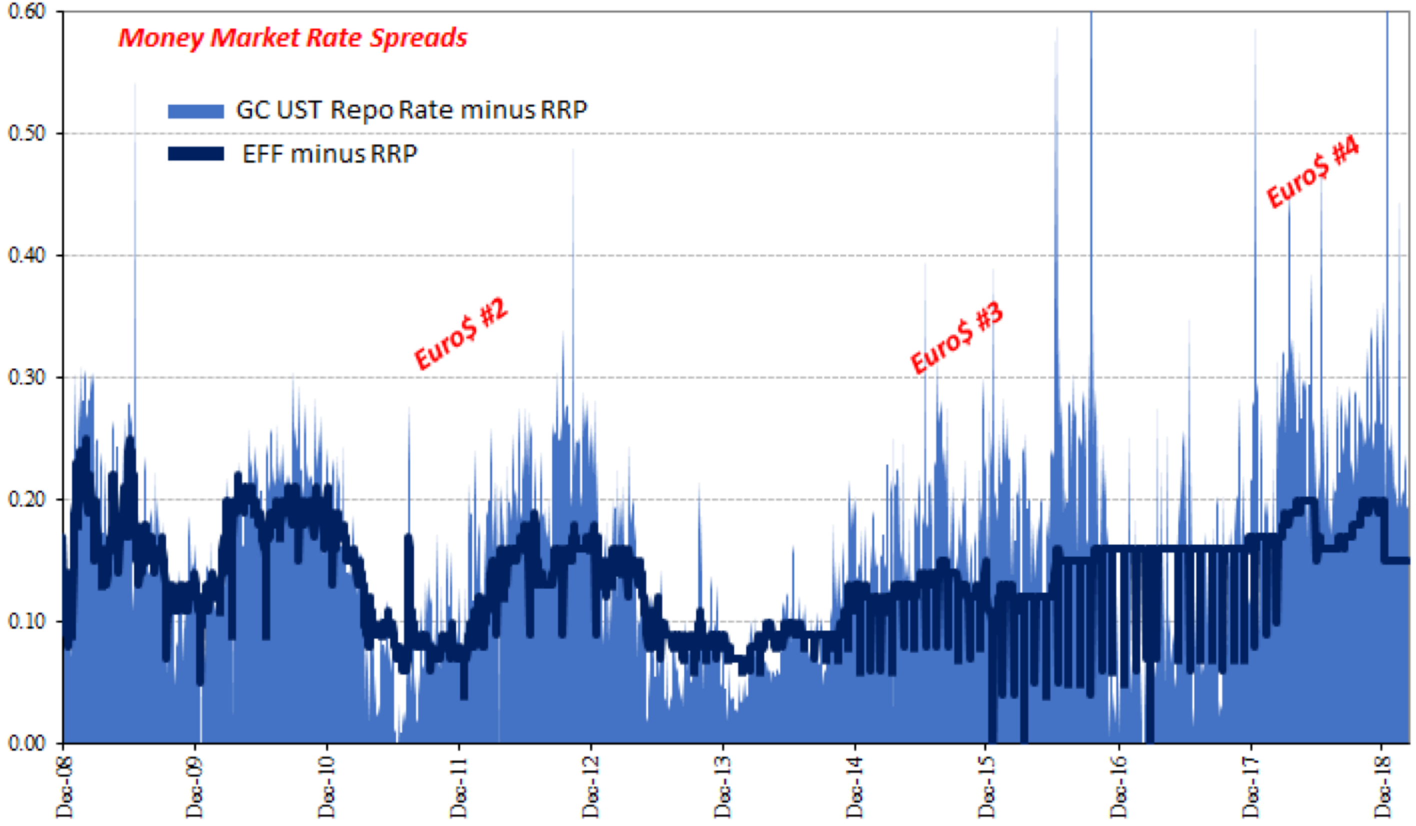
MACRO Voices with hedge fund manager Erik Townsend



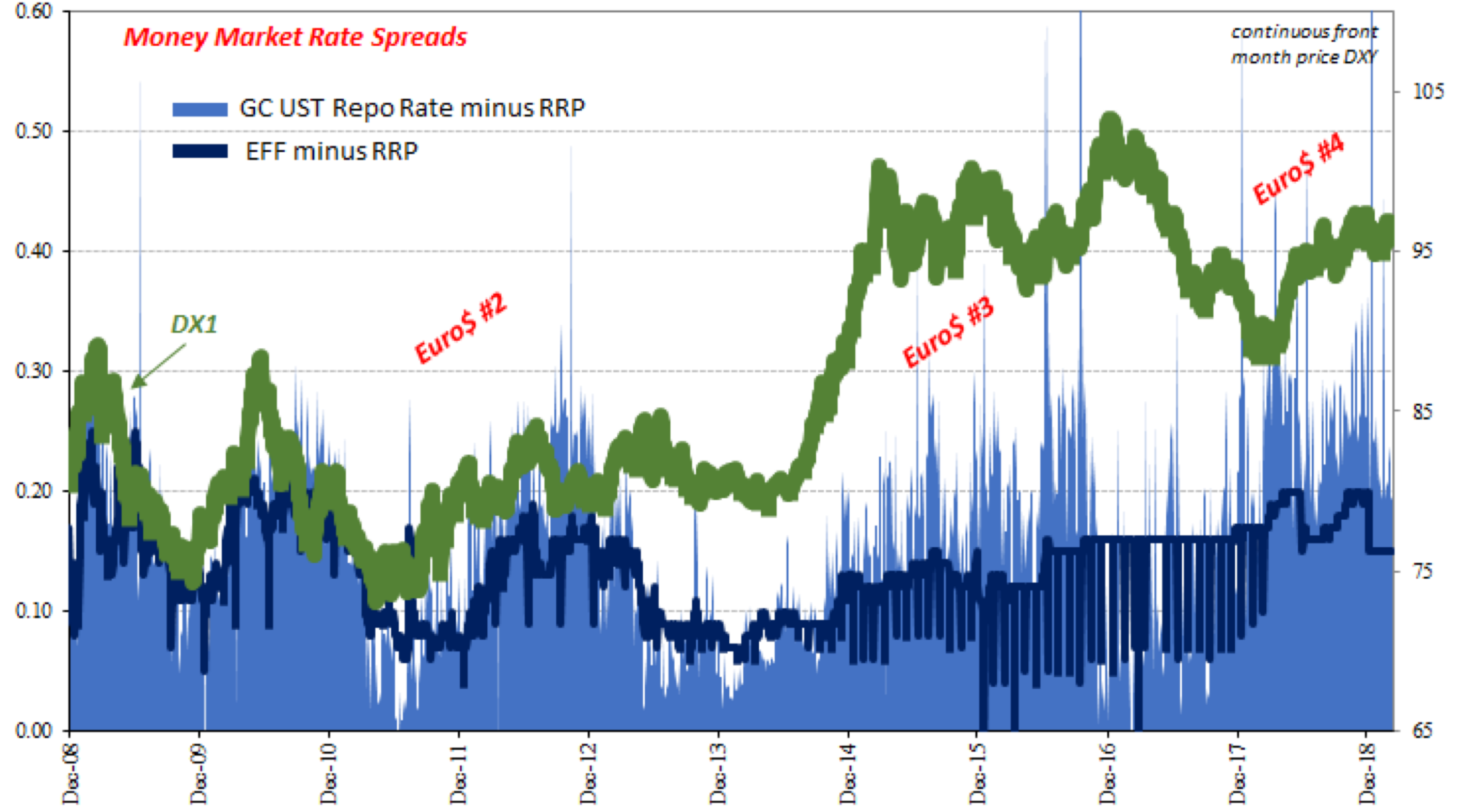
ALHAMBRA INVESTMENTS

MACRO Voices with hedge fund manager Erik Townsend

Temperamental Hierarchy



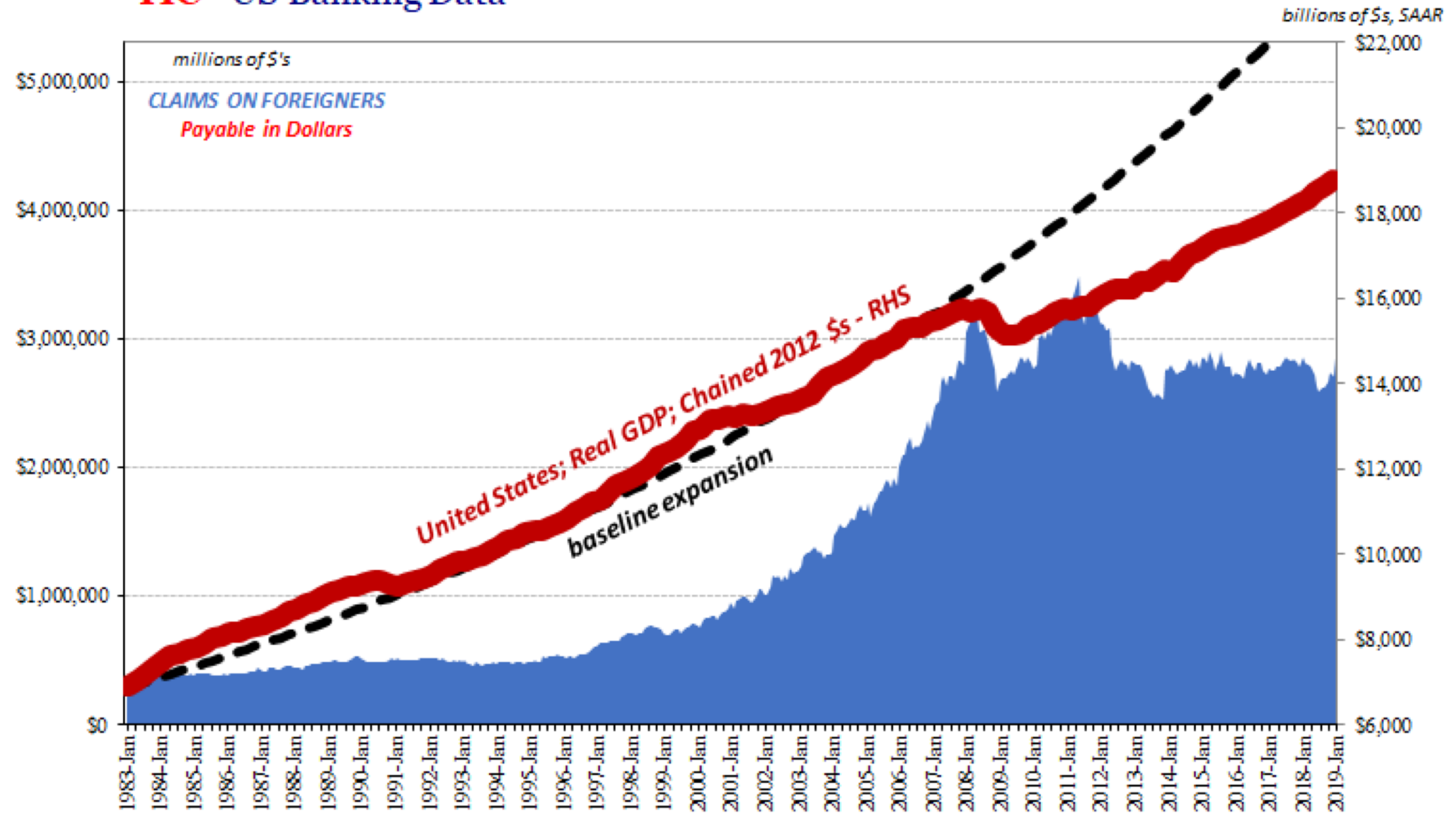
Temperamental Hierarchy



ALHAMBRA INVESTMENTS

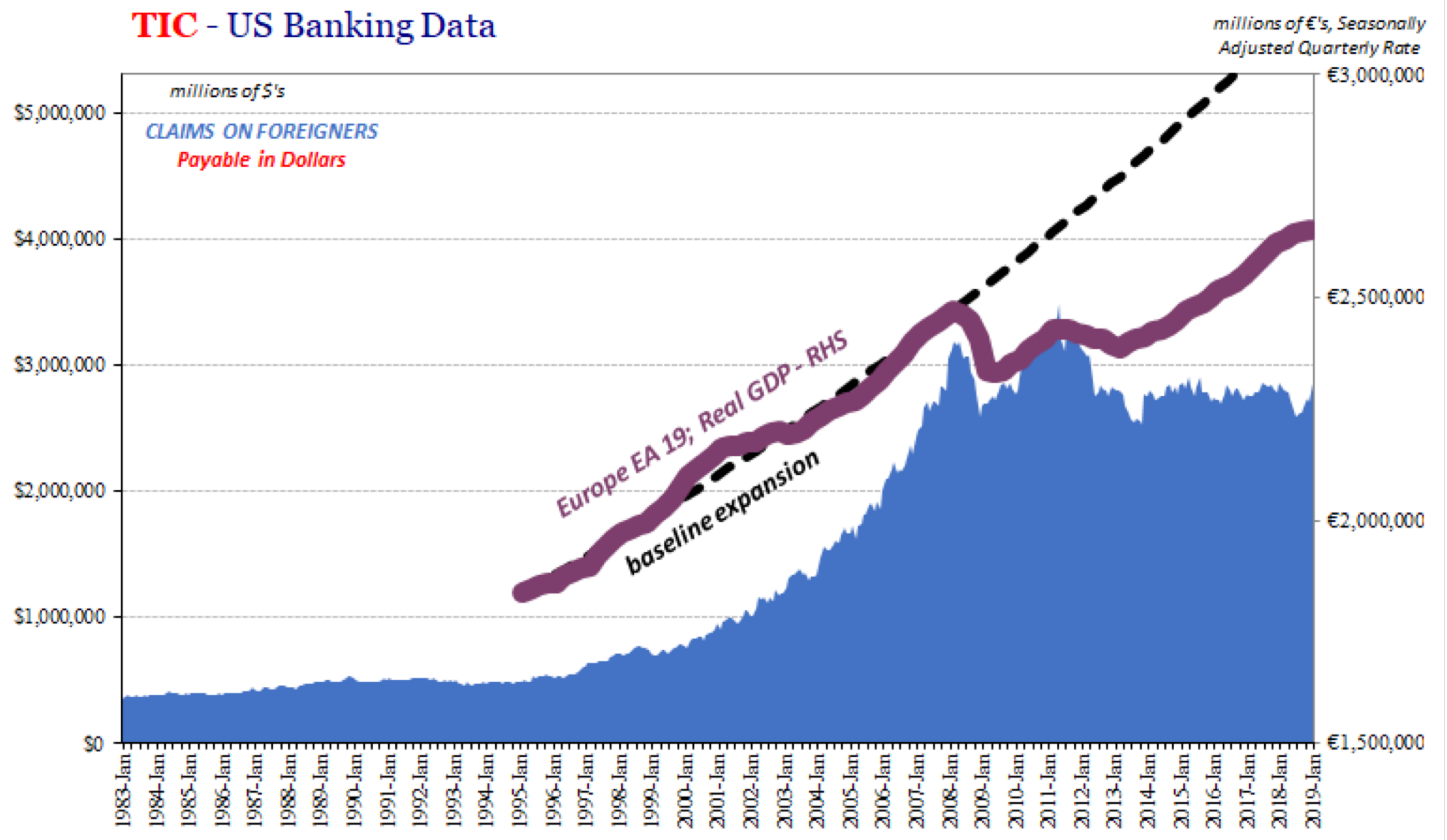
MACRO Voices with hedge fund manager Erik Townsend

TIC - US Banking Data

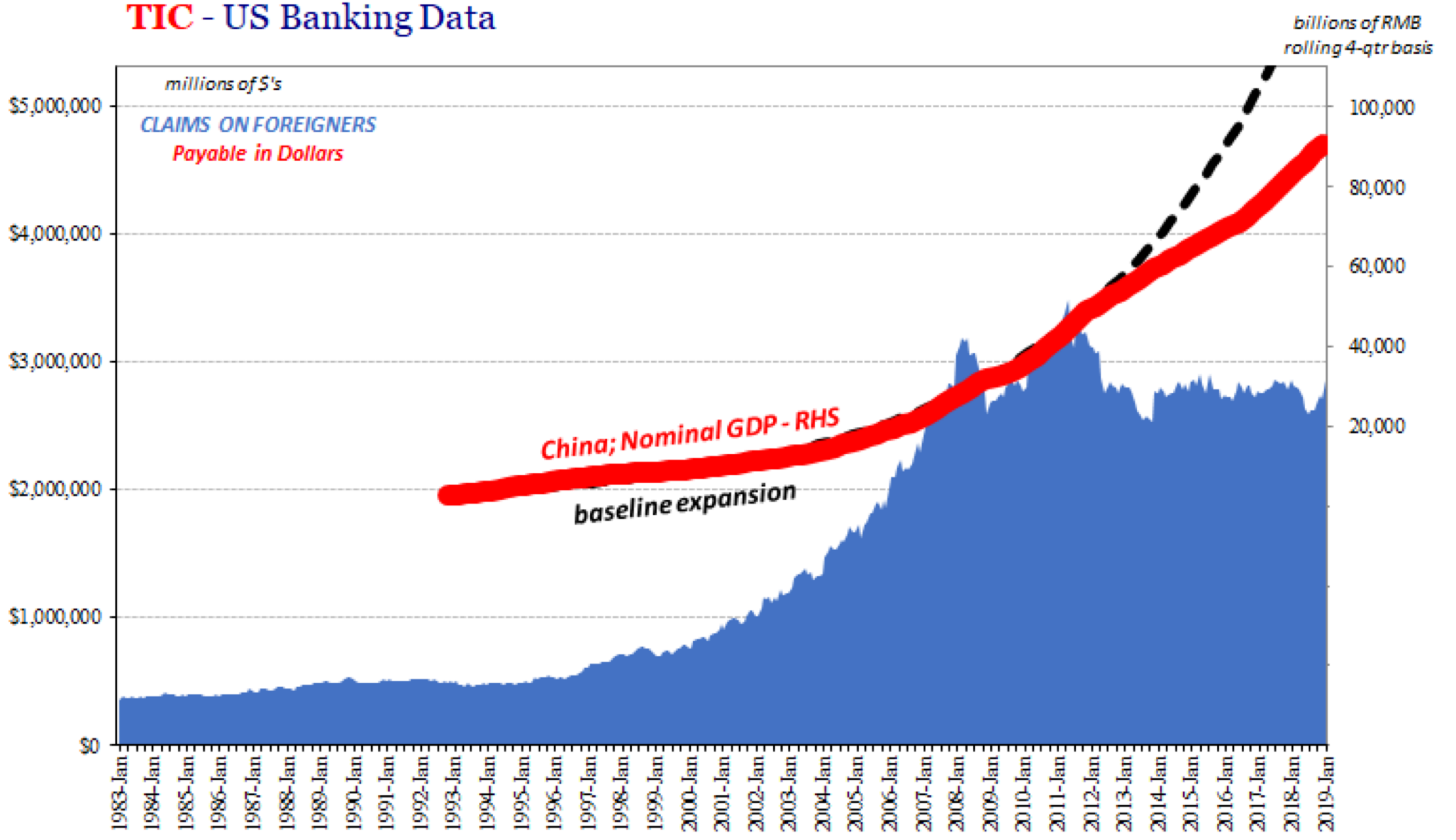


ALHAMBRA INVESTMENTS

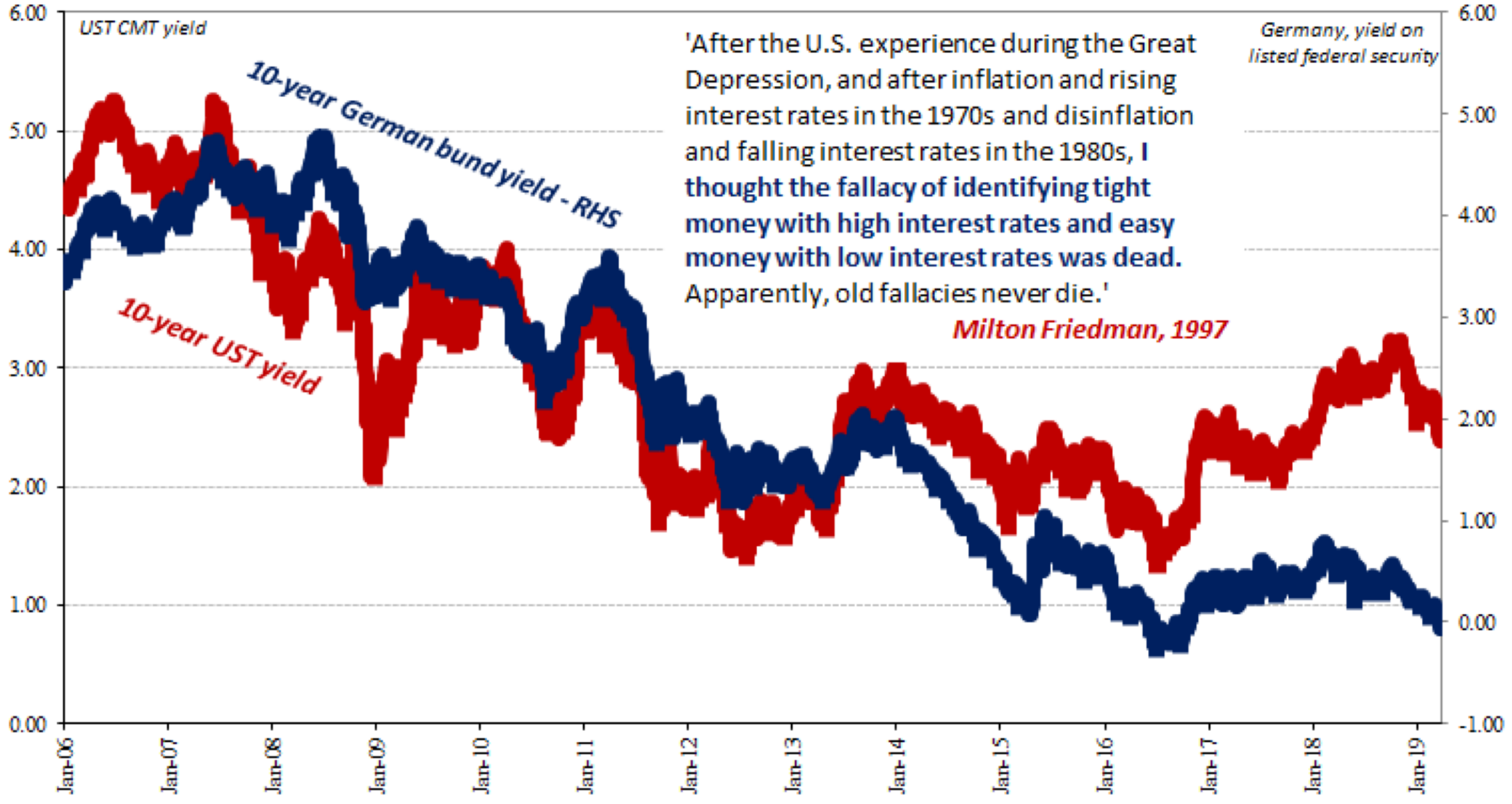
MACRO Voices
with hedge fund manager Erik Townsend



TIC - US Banking Data



Global Bond Market - Benchmark Yields



EURODOLLAR UNIVERSITY

Global ‘Currency’

CONCLUDED