Sep 2022 – MBS Mantra MBS High Income/Absolute Return Strategy returns

	% Net Return	% Gross Return	2022 YTD Net %	2021 YTD Net %	Trailing 1 year Net %
Aggregated SMAs	**-3.25%**	**-3.18%**	**-4.7%**	**+10.0%**	**-2.2%**
Founder's Port	**-3.39%**	**-3.32%**	**-3.2%**	**+10.1%**	**-0.7%**
BB Barc Agg	-4.14%		-14.4%	-1.8%	-14.5%
BB Barc MBS	-4.88%		-13.4%	-1.0%	-13.8%
BB Barc HY	-3.97%		-14.7%	5.3%	-14.1%
S&P 500	-9.24%		-23.9%	28.7%	-15.5%

Sep 2022 MBS Income: +0.93%; Annualized: +12.2% (Aggregated SMAs @ month end marks)
Sep 2022 MBS Cashflow: +1.7% (~20% annualized rate)
Sep 2022 MBS Loss rate: -0.65%

Hello.

Another quiet month for us, as we continue to accumulating and conserve cash. We did buy one more floating rate bond that we expect to have negative duration.

Rates continue their volatile ride, with all our benchmarks getting crushed once again, as yields on the 10yr rose from 3.2% to 3.8%, briefly hitting 4% near the end of the month. We continue outperforming, in spite of our fixed rate bonds getting marked down.

Income was similar to last month's, at 0.93%, 12.2% annualized. Returns from Price Change on average were ~-4%, with fixed rate bonds being down -6.5%, reflecting the rise in rates and low liquidity.

Our nominal performance is actually better than what we are reporting, as we adjust returns for cash to better isolate the performance of our MBS holdings. Including cash, our aggregated gross return was -2.68%. This adjustment to returns for cash has been made since the beginning, and is described here. This is one of the few periods in which are actively accumulating cash while rates are rising – normally we try and stay fully invested.

Flows remain low in Non-Agency MBS, with limited supply, few bid lists, and not much selling.

Cashflow this month was slightly higher in than the previous month, at 1.7% (20% annualized). One bond experienced some idiosyncratic losses from the resolution of a single foreclosed jumbo loan, resulting in a portfolio credit loss of 0.65%.

Prices/marks in mid-October appeared to have stabilized, but anything is possible by the end of the month.

All Roads Start with Paul Volcker

The past is prologue. Without understanding the past, we cannot anticipate the future. This month's newsletter will describe the impact and consequences of Paul Volcker's actions and how they resonate today, as Jerome Powell attempts to become the next Paul Volcker.

#Bernanke #Nobel #Volcker #Powell #maturity transformation #QE/QT #Pandora's box #Leverage #Gilts #inflation

First Bernanke. Quoting the WSJ, the 3 Nobel "laureates independently developed the theoretical foundations for why banks exist and why bank panics hurt." The Nobel committee: "The laureates explained the central role of banks in financial crises".

https://www.wsj.com/articles/most-nobel-laureates-develop-theories-ben-bernanke-put-his-into-practice-11665442660

https://www.nobelprize.org/uploads/2022/10/popular-economicsciencesprize2022.pdf

Apparently, the Nobel committee has not realized that banking has existed for centuries in well understood forms, with asymmetry of information, collateral, and "maturity transformation" long being the key features. They also don't fully understand that the banks are merely the transmission mechanisms for the financial crises triggered by central banks due to the creation of flawed incentives, and not the primary causes of crises, The real research that needs to be conducted is on the role of central banks on global money and money flows, and how banks react.

What strikes me as notable in reading the Diamond/Dybvig paper, having read plenty of Bernanke during the 2007-2012 period, is their (economists in general) lack of awareness of the changed liability structure of banks post-Volcker – i.e. since the 1990s. Their understanding of banking is from the pre-Volcker 1930 to 1980 period, when liabilities were domestic and largely deposits, and bank runs and failures were caused by asset riskiness and deterioration of collateral. They were aware that bank liabilities had changed to be more capital-markets sourced, but did not think about the risk this entailed. By the period leading up to the Global Financial Crisis (GFC) of 2007, bank (as well as corporate) liabilities were largely foreign (Japanese, from the Yen Carry Trade), and that the risk of these not being rolled over, analogous to bank runs, could be, and as it turned out was, independent of the core asset quality of the banks.

The liability "run" in 2007 was in fact caused by Bernanke's aggressive cutting of rates in August 2007 to close to Japanese rate levels, which removed the "incentive" for the Japanese to retain their capital in the US – they took back over $1T in capital, as reflected in both the price of the USD in Yen, and also visible in the capital flows published by Japan's Ministry of Finance, and in Japanese M3. It was the shrinkage of the liability side of the balance sheet for all the US banks at the same time that led to unavailability of margin, declines in asset prices, margin calls, (even for regional banks that had not availed themselves of carry trades), and thus the GFC.

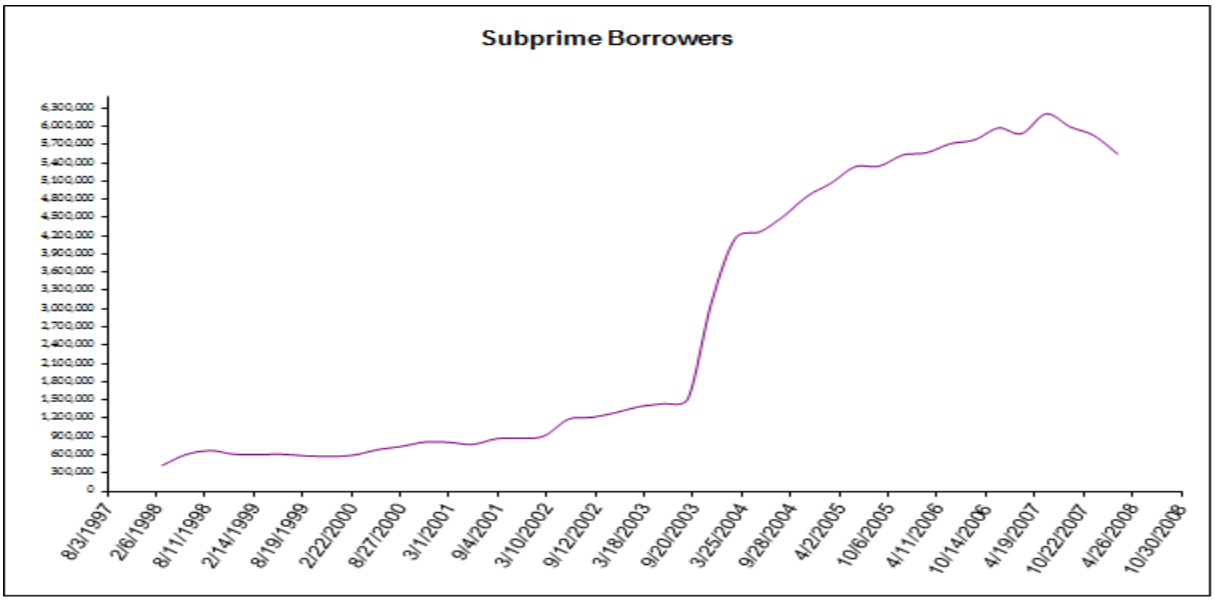
While this was triggered by Bernanke, it all started with Volcker in the 1980s. I will connect the dots for you.

First, let's put to bed the false narrative that the GFC was caused by Subprime loans in the US. I'm not saying money was not lent to unworthy subprime borrowers, but that it was not of a significant size to create a GFC.

Bernanke got it right initially, to congress, in March 2007: "Subprime is contained".

Let's look at the data (from 'The Housing and Mortgage Crisis in Pictures', March 2008):

There were only ~5.7mm subprime borrowers in 2007, an increase of about 5mm since 2004, as cheap money and demand for securities (from banks due to Basel II) led to very marginal lending and the creation of an asset class.



At an average loan balance of $200k, this amounts to a total asset class size of ~$1T, most of which was created after 2004. Corroborating this simple analysis, subprime securities outstanding in Q1 2007 were $837B (SIFMA data). The total MBS market size in 2007 was greater than $5T, making subprime less than 20% of the market.

In subprime MBS, securitizations typically had 20% subordination (subs), making the market size of the sub bonds <$200B, with the rest (seniors) being rated "AAA". Within the subs, those rated BBB and below were about 4% of the deal, approximately <$40B in total size.

Many of the senior subprime bonds, and some of the subs that are higher in the capital structure than BBBs, are still outstanding, although they have declined in size due to prepayments and housing turnover. It has turned out that they were not 'toxic'.

By 2010, subprime MBS balances had declined to $500B, implying that at most about $350B had been lost in subprime (less in reality since loans did refinance and prepay). **This is a manageable amount. So, Bernanke was right, subprime was containable. The amounts lost from subprime were not large enough to add up to a GFC.**

The US stock market, for example, lost $10T out of $18T, from Aug 2007 to Feb 2009. **Given the far larger losses in equities, maybe the high PE ratios of stocks should be blamed for the GFC?**

As of 2016, when I last looked at the data, there were over $200B in subprime MBS still outstanding. They trade at levels that would make corporate bonds blush.

So, what happened? Where did the subprime narrative come from? **3 letters: AIG**.

Thanks to the insatiable demand for securities from Basel II, instead of money being raised to invest in cheap assets, assets were created to fulfill the supply of cheap money. Every investment bank was originating as much as it could, and cutting corners underwriting them, leading to such phrases as "liar loans", "secret seconds", and worse to describe these bonds. There is no doubt that this resulted in poor underwriting. On the borrower side, flipping houses became a sport, until prices stopped rising, making housing seem like a "greater fool" trade.

Clearly, with thin subordination, it would not take much of a decline in prices for subordinated subprime bonds to take losses, which led to a lot of investors looking for ways to bet on this. **AIG was happy to oblige**.

Being in the insurance business, AIG's Financial Products Group, run by Joseph Cassano, decided to write "insurance" in the form of Credit Default Swaps (CDS) on subprime MBS, primarily on the BBB and lower classes, often on specific bonds, in amounts greater than the bond outstanding. Unlike in corporate bond CDS, there was no way to short MBS, or cover a short by delivering a bond. Without the AIG-originated CDS market, billionaires would not have been minted by shorting 'MBS', and the subprime narrative would have been a non-event.

The NYTimes story below shows that they wrote over $500B in insurance on an asset class that was at most $40B in size, increasing the size of the subprime market exposure by over 50% and the size of the risky parts of subprime by over 1000%.

AIG's "research" showed them that "real estate never declined" (I can't find the link now, but I'm paraphrasing a pre-crisis story where an AIG exec was boasting about this). Here is a link to Joe Cassano bragging: "It is hard for us…to even see a scenario within any kind of realm of reason that would see us losing $1 in any of those transactions". (He was paid over $270mm while at AIG, BTW). The poster child, if anyone is to blame.

https://www.nytimes.com/2008/09/28/business/worldbusiness/28iht-aig.1.16530171.html

https://www.institutionalinvestor.com/article/b150qdkrd30ggk/the-fall-of-aig-the-untold-story

Subprime bonds, including subs and other MBS, often went into Collateralized Debt Obligations (CDOs). CDS were then further "financial engineered" by investment banks to be made into bonds via "synthetic CDOs", and "CDO-squareds" creating even more demand for CDS, again largely supplied by AIG.

All of these were sold to "SIVs" (Structured Investment Vehicles), hedge funds, money managers and banks, almost all levered entities that were 'arbitraging' cheap financing.

CDS are private contracts, and no one was aware of the size of the market, or risk exposure. CDS are zero-sum-game contracts – for dollar won, a dollar is lost. In this case, a handful of hedge funds won, and AIG lost, had insufficient equity, and needed to be bailed out, along with some of their counterparties.

The Subprime story is an AIG story.

Making things worse, a number of banks also drank the Kool-Aid and ran carry trades to boost their earnings, some after hiring consultants to find out how their competitors were making so much money. Some banks had in- house CDO managers who created CDOs, but the sponsors apparently never sold any of the senior bonds, using cheap funding to run an "arb book" within their balance sheets. Citibank created a SIV (an off-balance sheet structure) called Tribeca, which owned over $100B in such stuff, resulting in Citi needing to be bailed out. I know a trader at another dominant large firm who never sold any of the BBB bonds he originated, thinking them safe. Traders at other traders explicitly got permission to run "arb positions" and bought bonds on the open market from other dealers, again due to cheap funding – borrow at LIBOR flat, invest at LIBOR + 20bps, scale it up, and hold minimal

risk-based capital due to Basel II rules that used credit ratings to risk-weight assets (20% risk weight for AAA to AA-rated assets x 8% min total = 1.6% capital reserve required – an invitation to lever!)

98.4% leverage, resulting in fat bonuses! LTCM redux!

All the banks and IBs basically had the same trade on, all funded in the same way, with very little capital behind their leverage. By late 2007, stated Level 3 ratios to equity were: Citi: 105%; GS 185%, MS 251%, BS 154%, Lehman 159%, ML 38% (certainly undermarked). These probably did not count off balance sheet structures and are likely undermarked. So, yes, the banks were bust.

Many individual things went wrong that can be blamed for their part in the GFC – rating agencies not realizing MBS could be correlated, unlike corporate bonds; poor risk management; hubris by management of banks; traders, structurers, and group leaders gaming the system for their bonuses; Basel II; the Fed put allowing banks to play with other people's money; etc. These were all symptoms and reactions to the cheap money, (after all, "Greed is good" – Gordon Gekko) and not the fundamental cause of the GFC.

None of this would have been possible without the ballooning of the liability structure of banks and the corresponding 4x growth of their balance sheets, due to the infinite availability of short-term funding and Tier 2 debt, most of which came from Japan, starting in 2002.

Leverage on the liability side of bank balance sheets is what led to the GFC, not subprime. Central bankers and regulators are responsible for the GFC due to their lack of oversight of this risk.

Bernanke and Diamond's research, by focusing on asset collateral risk, also seems oblivious to this.

I am going to rewrite US history below to explain how we got a point of banks having too much access to capital and leverage and that are now "Too Big to Fail".

The story starts with Paul Volcker, whose actions have ultimately resulted in the current status.

I joined the Financial Services business in 1987, in Research, at Merrill Lynch. My first publication in 1987 analyzed spreads between futures contracts. This table (TED = Treasuries – Eurodollar futures) is still relevant today, and lack of understanding of this has led to many blowups, including LTCM (more on this later).

Table VIII
Factors Affecting The TED Spread

Fundamental Factors	Expected Reaction of TED
"Flights to Quality"	Widen
Reduction of Confidence in the Banking System	Widen
Euro financing increases	Widen
Yield Curve Flattens	Widen
Yield Curve Steepens	Narrow
T-bill Supply Increases	Narrow
T-bill Supply Decreases	Widen
Fed raises Reserve Requirements	Widen
"Significant" Open Market Security Purchases	Narrow
"Significant" Open Market Security Sales	Widen

Due to an MBS trader at Merrill having a huge loss, in 1988 I moved to Morgan Stanley joining a group called Risk Controlled Arbitrage, as I understood the TED spread and swaps, where we created and sold leveraged portfolios consisting of long MBS, Interest Rate Swaps to hedge them, and repo leverage – a mini bank. I believe this trade idea was created at Salomon Brothers in the 1980s, and copied by all other banks due to the Salomon MBS diaspora. In short order, I was put to work restructuring a Savings and Loan (aka "S&L" or "Thrift") bank called Anchor Bank, that had run out of regulatory capital. To understand what had happened to Anchor, I had to learn a lot about banking, balance sheet management, and Paul Volcker, beyond what I had learned in my Money and Banking classes as an undergraduate Economics major – (thanks, Robbie Guttman).

Paul Volcker

Paul Volcker, the Fed chair from 1970 to 1987, in order to quash inflation, in 1980 started raising short term rates to over 20% and inverting the yield curve. Till 1982, the curve was mostly negative. In 1988, the curve inverted again.

What is not remembered or appreciated about Paul Volcker is that he also pushed through the Plaza Accord in 1985, which attempted to devalue the US currency. It is now understood that "an unintended consequence of the Plaza Accord was that it paved the way for Japan's "Lost Decade" of sluggish growth and deflation". The Plaza Accord also had important implications for banking in general and the US economy as well, which I will illuminate below.

Both of these actions by Volcker and his Fed have brought us to where we are today. **What follows is the parallel economic story of the US and Japan.**

(A third Fed action of the period that I have not analyzed is the "Fed Put", born in 1987. Was this a Volcker doing? He left the Fed on August 11, 1987, whereas Black Monday when the Put was used was Oct 19, 1987.)

The S&L Crisis

Pre-Paul Volcker, the S&L and banking business was described to me as: borrow at 8 (%), lend at 12 (%), tee off at 3 (pm). It was an easy business as the yield curve was steep, deposit rates were regulated, and the spreads that could be earned were huge.

S&Ls were created to finance housing, separately regulated from commercial "money center" banks, and were required to hold a large proportion of their assets in the mortgages they originated, or in mortgage securities like GNMA MBS, all of which were of longer duration than their deposit liabilities, and so were a classic case of the "maturity transformation" that Diamond's bank research discusses.

The US, by 1988, was in the throes of the S&L Crisis due to Volcker's inversion of the yield curve. You can read about it here: https://www.federalreservehistory.org/essays/savings-and-loan-crisis

Rising rates diminished the value of the MBS and mortgages that S&Ls held, wiping out their equity, explaining what had happened to Anchor Bank. Deregulation attempts did not work, and ultimately a Thrift Bailout was implemented in 1989 with the creation of the RTC (Resolution Trust Corp) to buy out the assets of failed thrifts. This was equivalent to a "bad bank", and was funded, first by the issuance of 2 Refcorp bonds (80mm, not enough) and then through issuing T-Bills to support the working capital and balance sheet needs of the RTC, and rolling them over every few months.

See the TED spread table above. **When T-bill supply went up, the TED spread tightened as expected**, from > 120bps to 40 bps!

LIBOR is the price or yield of Eurodollars; Interest rate Swaps (IRS) reflect the pricing of term LIBOR. So, the coupon of the fixed side of swaps can be viewed as term LIBOR yields, and swap spreads as term LIBOR spreads to USTs. Swap spreads tightened with the TED. Bond spreads to USTs are usually correlated with swap spreads, so bonds tightened and went up in value relative to USTs.

I wrote about this in 1991 when I joined MBS Research at Morgan Stanley after the Anchor Bank project, and warned clients that swaps would stay tight until the Thrift Crisis was resolved, anticipated to be 1994.

> "*We believe that the current narrowing of the TED spread is primarily the result of the ballooning in the available supply of Treasury Bills caused by the spending activities of the RTC….the current narrowing of the TED spread is temporary and that it will revert back to wider levels…we expect the normal long-term level for the TED spread to be in the vicinity of 90-100 bps..given that the level is currently 39bp…We are expecting the savings and loan and bank deposit insurance crisis to create a need for Treasury Bill financing that should peak in 1992 at $115B..and should last into 1994*."

This tightening in Swap spreads was a result of the S&L Crisis, which was a consequence of the Volcker rate hikes.

(As an aside, I made Anchor into a floating rate asset, matching its liabilities, stabilizing net interest margin, found enough assets that could be sold for gains to increase capital, and it was later purchased by Dime Savings Bank).

LTCM

In the US, Salomon Brothers had been caught trying to corner the US Treasury auctions, and a number of senior managers from Salomon were forced out, forming LTCM.

Every time someone wants to talk about a crisis nowadays, they trot out an LTCM reference, with some very erroneous analogies. Due to the war involving Russia, this has again been resurrected.

The ONLY outsider that learned what really happened at LTCM is Michael Lewis, as he was given access to their books and partners due his stint at Salomon Brothers. Even LTCM employees don't know the whole story, as the place was very secretive and silo-ed with their strategies, as described in various books about LTCM.

In his 1999 NY Times magazine story ***How the Eggheads Cracked***, Michael Lewis quotes an LTCM partners:

> *"'Virtually no one has called and asked us for the facts. They just believe what they read in the papers.'"*
>
> *"Then I was shown the bets that had cost the strategists their fortunes and their reputations as the smartest traders on or off Wall Street."*
>
> ***"The big losses that destroyed Long-Term Capital occurred in the areas the young professors had for years been masters of. The killer blows - a good $3 billion of the $4.4 billion -- came from..bets that Meriwether and his team had been making for at least a decade: interest-rate swaps..****.Now there is no reason anyone should feel obliged to understand interest-rate-swap arbitrage."*

Not Russia. Interest Rate Swaps. Not true, everyone in finance needs to understand Interest Rate Swaps.

What are interest rate swaps (IRS)? They are a private contract to exchange a fixed rate coupon for a floating rate coupon, created from theories of competitive advantage. They have a tenor – 2yr, 5yr, 10yr, etc. The Floating rate side is usually LIBOR. The fixed rate side is usually a UST yield of the tenor (say 5yr UST) + a spread – mimicking a corporate bond, or really Fixed term LIBOR. You are really swapping fixed rate term LIBOR for floating LIBOR. If you are "long the swap" you receive fixed and pay floating – just as if you purchased a corporate bond and financed it on repo! So, an IRS is exactly like a perfectly 100% leveraged corporate bond!

Swaps are private contracts between 2 parties – usually a bank on one side and a counterparty on the other. They are zero-sum instruments. Losses for one party are gains for the other. However, if the losing party cannot make good on their loss, and the gaining party has hedged their position (banks will usually hedge their risk), then the gaining party will incur a counterparty credit loss as well. This is what happened due to LTCM's loss – banks needed to be bailed out of a $3.5B loss as LTCM had run out of equity to make good on their loss.

In other books about LTCM you will read that LTCM did not provide any collateral, or margin adjustments, as the street was eager to do business with the "smartest minds" in the market, that included 2 Nobel prize winners, and learn what trades they had come up with! Indeed, the street went about copying LTCM trades on their prop desks, further increasing the risk of the market in this leveraged trade (with regulators asleep).

So, what killed LTCM's interest rate swaps "arbitrage"?

Let's go back to the Thrift Crisis. The RTC had been funded by T-Bills. However, by 1995, all of the RTC's assets had been disposed of. I was actually involved in the final RTC sale in 1995 – I priced the last of their bonds and found the buyer for the RTC – a reinsurance company – as a sales-trader at Myerberg and Co.

In March 1997, Bill Clinton and Robert Rubin did the unexpected – in my opinion, the only Black Swan event in the US over the past 30+ years – on TV from the White House***, they announced that since the US has a surplus, they would reduce the debt and reduce T-Bill issuance.*** Clinton is the only president to have ever reduced the US debt. These were the $100B+ T-Bills that had funded the working capital needs of the RTC, and they were going away.

I saw this conference in real time on TV in my office in March, and right after the announcement, started warning my clients that swap spreads would widen – see the attachment linked - and with swaps, other asset prices.

Only 1 or 2 clients believed me – everyone was still using USTs as benchmarks. I might have been the only person on the street correlating swaps to asset and MBS prices, which I had been doing since 1990 thanks to my Anchor Bank work. I had no idea who LTCM was, as I was too junior to be covering them.

Thanks to Bill Clinton, swap spreads started widening in 1997, and with swaps, MBS and corporate bonds. From March 1997 to Jan 1998, 10-year swaps had widened from 36 to 47, and by the end of 1998 to 79 bps. They continued widening to over 100 bps in 1999, back to pre-RTC spread levels, as predicted by me in 1991.

LTCM had been basically creating the same Risk-Controlled Arb portfolios I had been creating at Morgan Stanley, which Salomon had also been doing in the 1980s: long bonds, short repo (ie interest rate swap), and hedged duration risk – a mini-bank, albeit with a tiny net interest margin spread that was infinitely levered.

Assuming that LTCM had 10-year swaps, and they had UST hedges to hedge the duration risk, every 10bps widening in swap spreads would have caused a 0.75% loss, ~$37mm. For LTCM to have lost $3+B on swaps, they would have needed to have a notional position in swaps of $85B to $100B!

In my opinion, LTCM was already bankrupt by the summer of 1997. Their returns in 1997 dropped to 17% from 43% in 1995 and 41% in 1996. Yet, it survived to 1998, as no one gave them a margin call (described in LTCM books) and probably did not mark their swaps correctly.

Back to Michael Lewis, in 1998: *"In exchange for lending Long-Term Capital the money to make its trades, the big firms -- Morgan Stanley, Merrill Lynch, Goldman, Sachs -- demanded to know what it was up to. This in turn led to higher-fidelity imitation." "..on July 17, when Salomon Brothers announced that it was liquidating all of its red dollar-blue dollar trades, which turned out to be the same trades Long-Term Capital had made. For the rest of that month, the fund dropped about 10 percent because Salomon Brothers was selling all the things that Long-Term owned."..." Fairly rapidly the other big financial firms unwound their own trades, which, having been made in the spirit of Long-Term Capital, were virtually identical to the trades of Long-Term Capital. "..."'It ceased to feel like people were liquidating positions similar to ours. All of a sudden they were liquidating our positions."*

In August 1998, LTCM's clearing firm, Bear Stearns, that managed all of LTCM's bond and derivatives settlements, called in a $500mm payment…"LTCM had been out of compliance with its banking agreement for three months".

The further widening in swap spreads in the summer of 1998 from LTCM copycats waking up and selling their positions as well as other bonds is probably what led to the August 17th 1998 Russian default – sales of Russian bonds by investors and dealers forced the ruble down, forcing their Central Bank to spend it's foreign currency reserves to defend the ruble.

LTCM's bailout was finalized in Sep 1998, explaining the incorrect attribution to the Russian default due to date proximity. LTCM did not have much exposure to EM debt so blaming the Russian crisis on LTCM failing is a totally backwards attribution. This is typical – Black Swan-ers (and journalists) blame the proximate event as the cause, instead of actually doing any research, but end up creating and driving the narrative – there are books and newspapers to sell.

LTCM was not a Black Swan event. The Black Swan event was Clinton reducing the deficit by not rolling over outstanding T-bills.

This is the only reduction of US debt in the recent past. Quants cannot compute this probability, and the quants at LTCM probably did not even assess this risk. This reliance on statistics at the expense of basic micro-economics is a fundamental flaw in risk management practice, leading to the concept of the Black Swan to rationalize missing information that could and should have been captured.

No longer needing the T-Bills that funded the RTC was anticipated in 1991, but actually reducing the deficit was not inevitable, as no president have ever done so, making it a Black Swan event.

Not understanding the T-bill market, the quintessential risk-free asset, and a critical determinant of swaps, is what killed LTCM!

The whipsaw in swap spreads between 1991 and 1997 that put LTCM out of business, and required a $3.5B bailout of LTCM swap counterparties by Greenspan, can be directly connected to the S&L Crisis, which in turn was a consequence of Paul Volcker's actions.

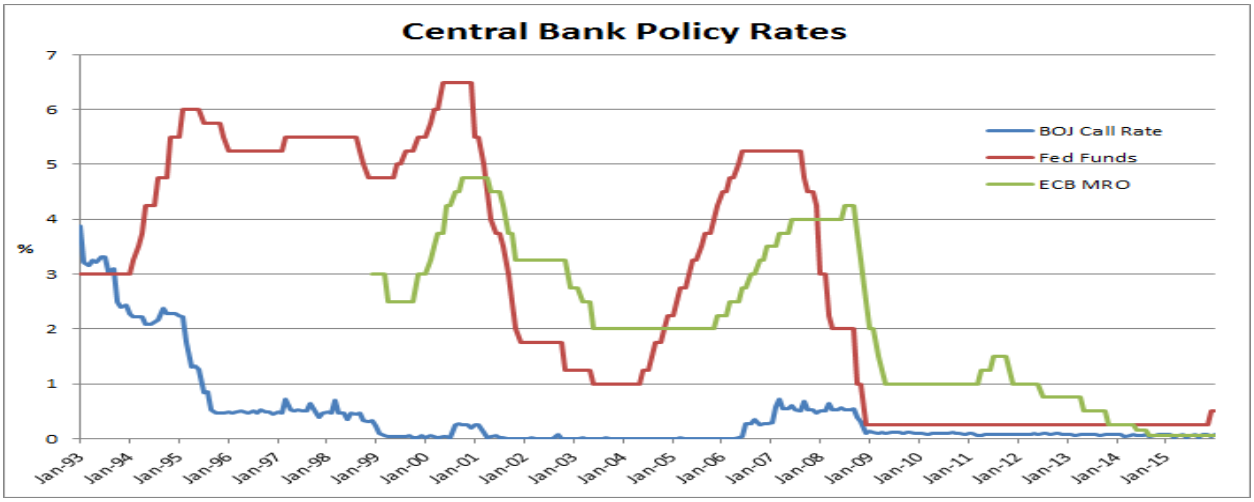
Japan

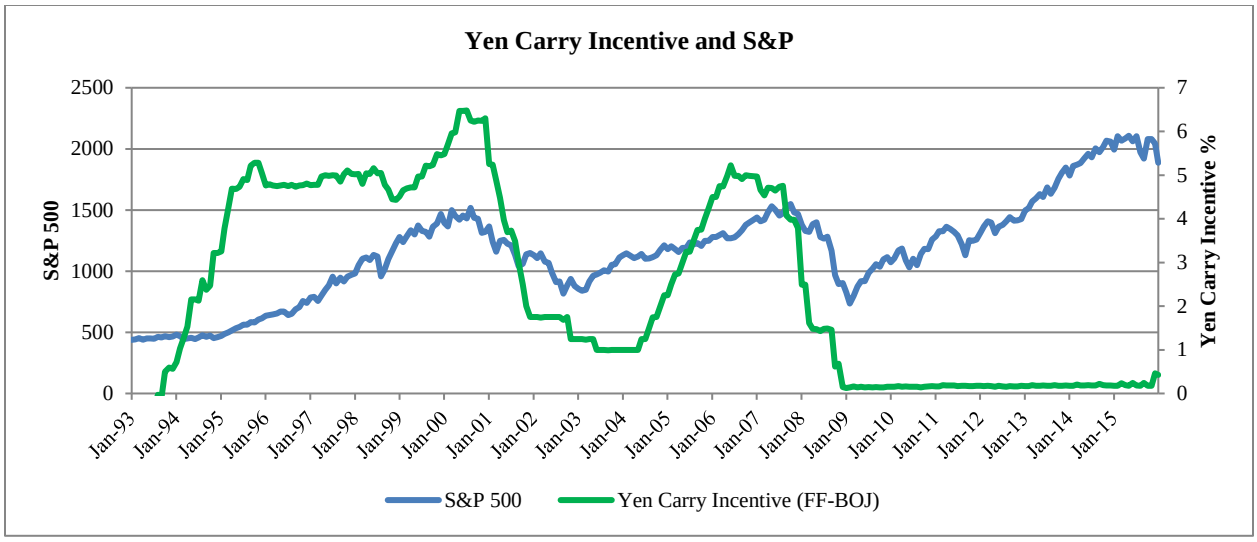
Japan, in the 1980s had a large surplus with the US. It had been recycling its USD back into US commercial real estate, buying such trophies as the Rockefeller Center. However, the US real estate crash had hurt Japan.

The Plaza accord had strengthened the yen, resulting in the BOJ fiscally stimulating the economy in Japan to offset exports to the US. This led to a unprecedented real estate boom in Japan (Japan's property market was worth 4x more than the US property market), due to unconstrained money creation, and then a massive bust in real estate and stocks ("the bubble economy") by 1990, as the BOJ raised rates in 1989, leaving many of Japan's banks effectively insolvent and loaded with Non-Performing Loans (NPLs). Rather than wiping out the insolvent banks, Japan tried to allow them to earn their way out of the problem by cutting rates again.

In 1994, Japanese rates dropped below US rates, as the US started raising rates, and the Yen Carry trade was born.

To me, the Yen Carry Trade is a Volcker Plaza accord consequence.





Someone must have noticed the interest rate differential, decided that currency risk did not need to be hedged, and started borrowing in Yen. US stocks did a 'hockey stick' at the end of 1994, rising at a significantly faster pace than before. "Mrs. Watanabe", the famed Japanese retail carry and currency trader, had probably been born as well, resulting in a massive export of capital and money supply from Japan.

Tiger Management – Julian Robertson – Yen Carry Trade Exposed

After LTCM-driver bank bailouts in August 1998, Greenspan cut rates again on 9/28/1998 in response to LTCM, to "save financial markets" as CPI appeared tame, and Velocity was slowing. Guess what happened – the Yen strengthened from Y130 to Y121, as the Yen Carry incentive declined, and Yen Carry investors unwound their trades and bought Yen back.

The result that followed was Tiger Management blowing up on October 7th and 8th, 1998, losing $2B in one day, and $5B in the week since 9/28/98!

When Tiger blew up, their trade strategy was exposed – they had been borrowing in Yen, and investing in the US and emerging markets.

It had been known that Julian Robertson of Tiger was using the Yen Carry trade, and that he was using leverage, but until Tiger blew up in the wake of the Russian and LTCM crises, the magnitude of the importance of the Yen Carry Trade, and of Tiger, has never been quantified.

Quoting from Paul Krugman "Tigers Tale",

...Tiger Management, until recently the largest such fund in the world. In its heyday in the summer of 1998, Tiger had more than $20 billion under management, considerably more than George Soros' Quantum Fund, and was reputed to be even more aggressive than Quantum in making plays against troubled economies. Notably, Tiger was perhaps the biggest player in the yen "carry trade"--borrowing yen and investing the proceeds in dollars--and its short position in the yen put it in a position to benefit from troubles throughout Asia. But when the yen abruptly strengthened in the last few months of 1998, Tiger lost heavily--more than $2 billion on one day in October--and investors began pulling out. The losses continued in 1999--from January to the end of September Tiger lost 23

percent, compared with a gain of 5 percent for the average S&P 500 stock. By the end of September, between losses and withdrawals, Tiger was down to a mere $8 billion under management.

http://money.cnn.com/1998/11/02/companies/tiger/

From the links above we know the following:

- Tiger lost $5.5B between September and October 1998
- Tiger lost $2.1B in September 1998
- Tiger lost $3.4B in October 1998
- Tiger lost $2BB in one single day in October
- Tiger had 5.5:1 leverage

Solving the simultaneous equations, we deduce that Tiger's short position in Yen was approximately $28B, and S&P equivalent position was about $10.5B. On 10/7 and 10/8 S&P volumes spiked, losing $2.8B on an invested amount traded of $243B, many times the normal volume.

This period also revealed other "Macro" funds that were playing in this trade, when their losses came to light. The jump in S&P volume suggests that Tiger was not alone.

I am standing by my opinion that the asset rally in the US from 1994 onwards was fueled by the Yen Carry Trade, and not by anything else Mr. Greenspan or the President might have attributed it to, such as Greenspan's "New Economy". If anything, it is likely that the stock market rally that was created by the Yen Carry trade permitted VC firms to fund the internet companies and find 'exits' in a continually rallying market, forming the bubble that burst in 2000. This created wealth also flowed into real estate, increasing the size of houses, and pushed the US economy towards becoming a services economy, driven by asset wealth.

The returns, economic activity, and blowups in the 1994-1998 period can thus be attributed as a consequence of the Paul Volcker Plaza Accord which inadvertently created the Yen Carry trade.

A Black Swan event in Japan

In Japan, in the meantime, banks were not lending as they were mostly insolvent post Plaza-Accord-response stimulus and subsequent bust. My Japanese co-workers at Nomura would tell me stories about how banks tried to arbitrage each other's deposit rates – if one bank raised its deposit yield, other banks would try and move their assets there to earn a yield.

This unwillingness to lend by banks apparently upset the Yakuza, who needed the loans to invest in real estate, which resulted in the killing in the early 1990s of a number of bankers. **One of these killings, to me, qualifies as a Black Swan event, as it resulted in world changing consequences.**

In 1994, Mr. Kazufumi Hatanaka was murdered in Japan, shot in the head, execution style. He was the manager of the Sumitomo branch in Nagoya. There had been many bank employee killings by the mafia in Japan. However, Mr. Hatanaka's murder was reported in most global and business newspapers**,** gaining global and political attention **for he was a Sumitomo Bank board member. This would have been a significant loss of 'face' for the Japanese.**

Why did this specific killing gain global attention? In 1986, Sumitomo had acquired 12.5% of Goldman Sachs, and my suspicion is that this connection led to the heightened attention. **Maybe it's coincidental, but it is my speculation that this murder resulted in the opening of the Japanese banking sector to foreign banks, with unexpected outcomes and waves that had significant global repercussions**.

In 1996, Japan deregulated its banking sector, in a massive reform called the **Japanese Big Bang**, '*to rebuild the Japanese financial market into an international market comparable to New York and London.*' Since local banks could not create velocity of money to help the economy recover, the hope must have been to allow foreign banks to assume this role.

The Big Bang connected the money supplies of the world's two largest economies. US banks could now open Japanese branches that could borrow at the BOJ window at close to 0%, and they moved this money to NY via interbank lending between the Japanese and US branches. **This institutionalized the Yen Carry Trade, and dramatically boosted US money supply,** something the Greenspan Fed seems to have been oblivious to.

Since the Big Bang was a response to the stagnation of Japanese banking, I view this as consequence of the Volcker Plaza Accords.

The Big Bang, along with the Yen Carry trade in general, created the conditions for the GFC of 2007. This will be shown in the next sections. The GFC can thus be connected to the Volcker Plaza Accords.

This also dramatically changed the liability structure of banks, making the Bernanke and Diamond research and bank models obsolete.

Next, Everybody Yen Carries

Once Wall Street figured out what their large Hedge Fund clients – Tiger and likely Soros - had been doing, they jumped on the wagon (again) and started copying their trades, this time, however, on the liability side.

They figured out how to borrow in Yen. US financial services funding became dominated by these forms of borrowings.

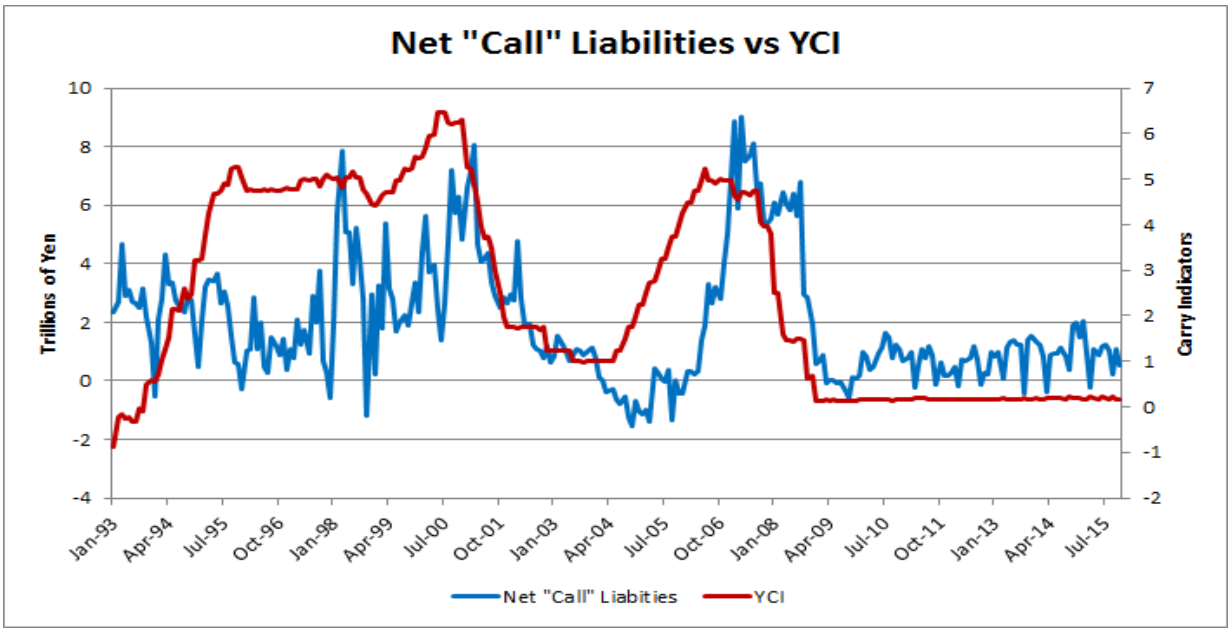
Banks discovered two primary ways to borrow in Yen – from the BOJ window using "call money", by setting up Japanese branches thanks to the Big Bang, and from other Japanese institutions and investors using Samurai bonds. ("Call" Liabilities are borrowings by banks, akin to Fed Funds).

This section will be mostly graphs showing the transfer of Japanese capital.

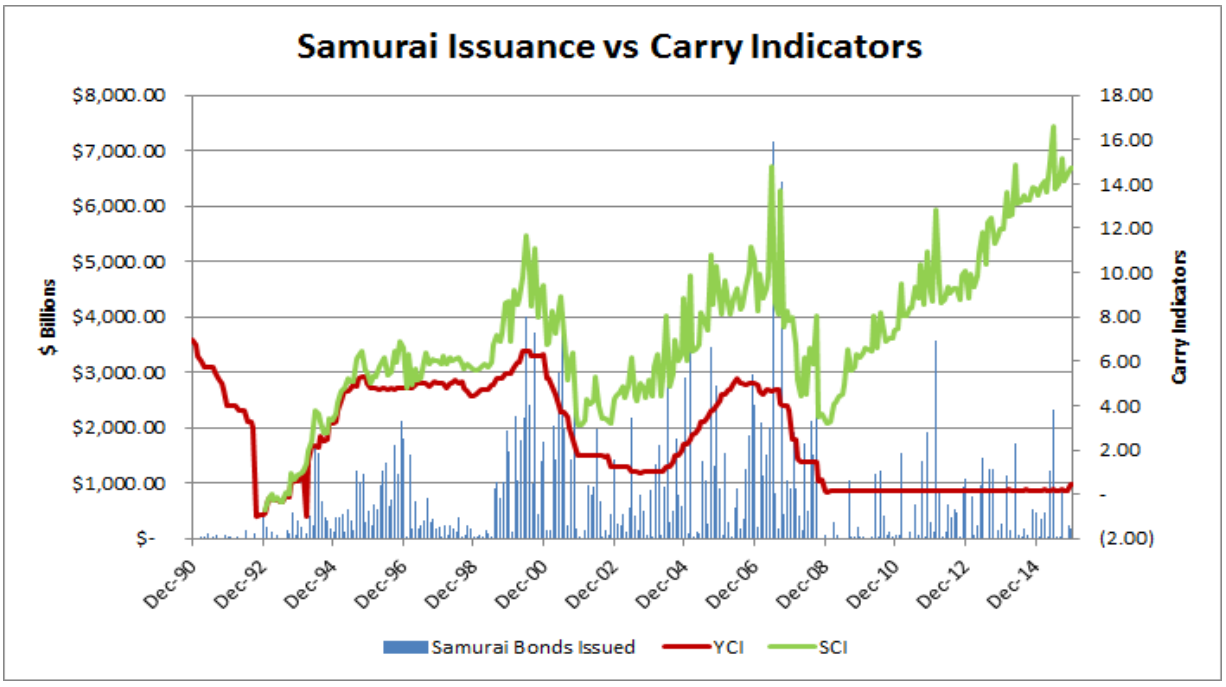
There were other means by which the Japanese injected their money supply into the US – BOJ purchases of USTs (their QE becomes ours), "Mrs. Watanabe" retail investments (believed to be $1T), purchases of MBS, CDOs and CLOs, Uridashi bonds, and more. All such flows turn out to be highly correlated to YCI – Yen Carry Incentive.

Japan's Ministry of Finance (MOF) publishes statistics weekly and monthly showing the flow of funds between Japan and the rest of the world, including Call Money flows. Samurai bond flow data is almost impossible to find, and I created the data by downloading every bond issuance in Yen from Bloomberg. The BOJ tracks and publishes their UST investments – more QE to the US.

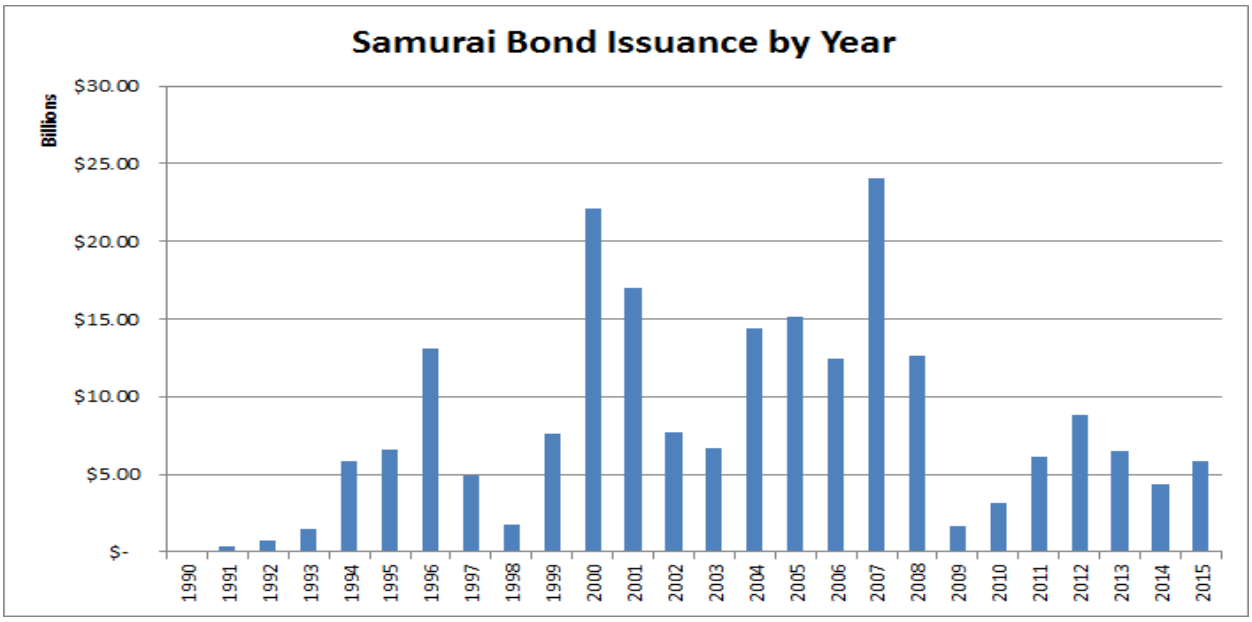
"Call" borrowing from the BOJ Window - highly correlated to the YCI since 1999 - $80B+ at the peaks



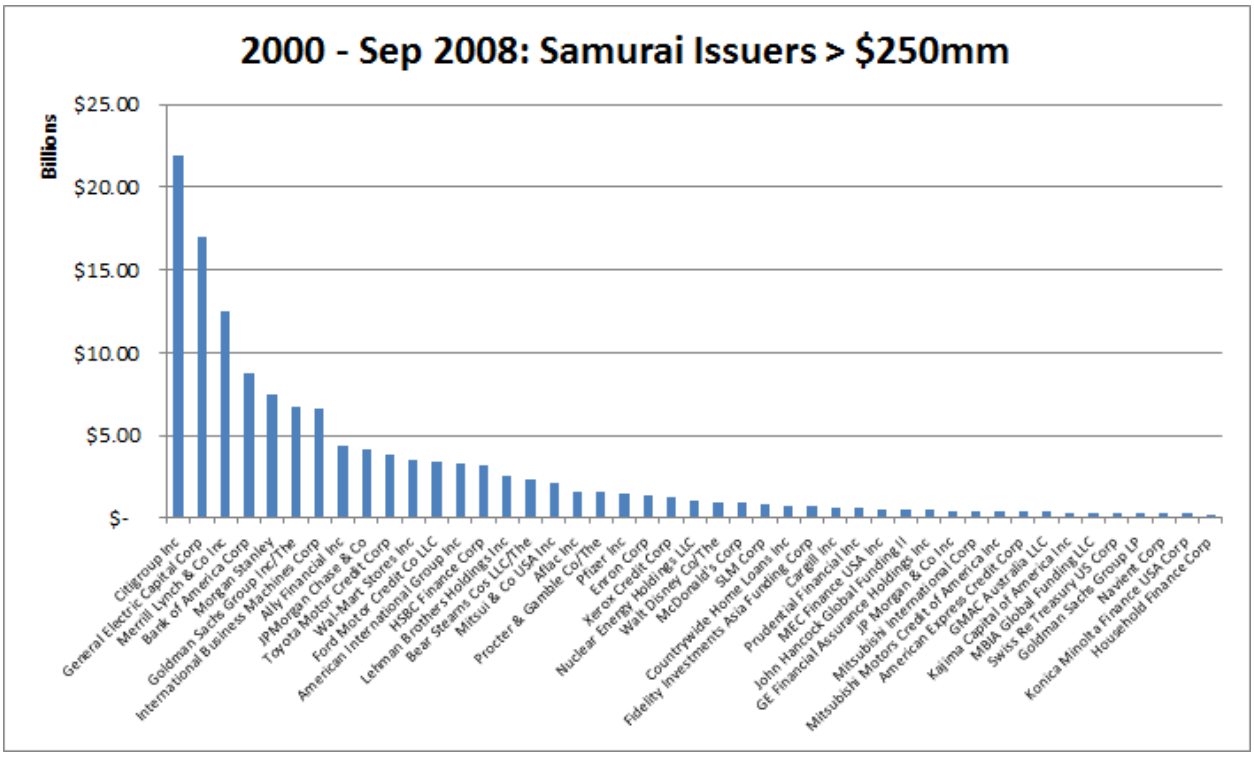
Samurai Bonds – picked up in 1999 after Tiger exposed the Yen Carry trade



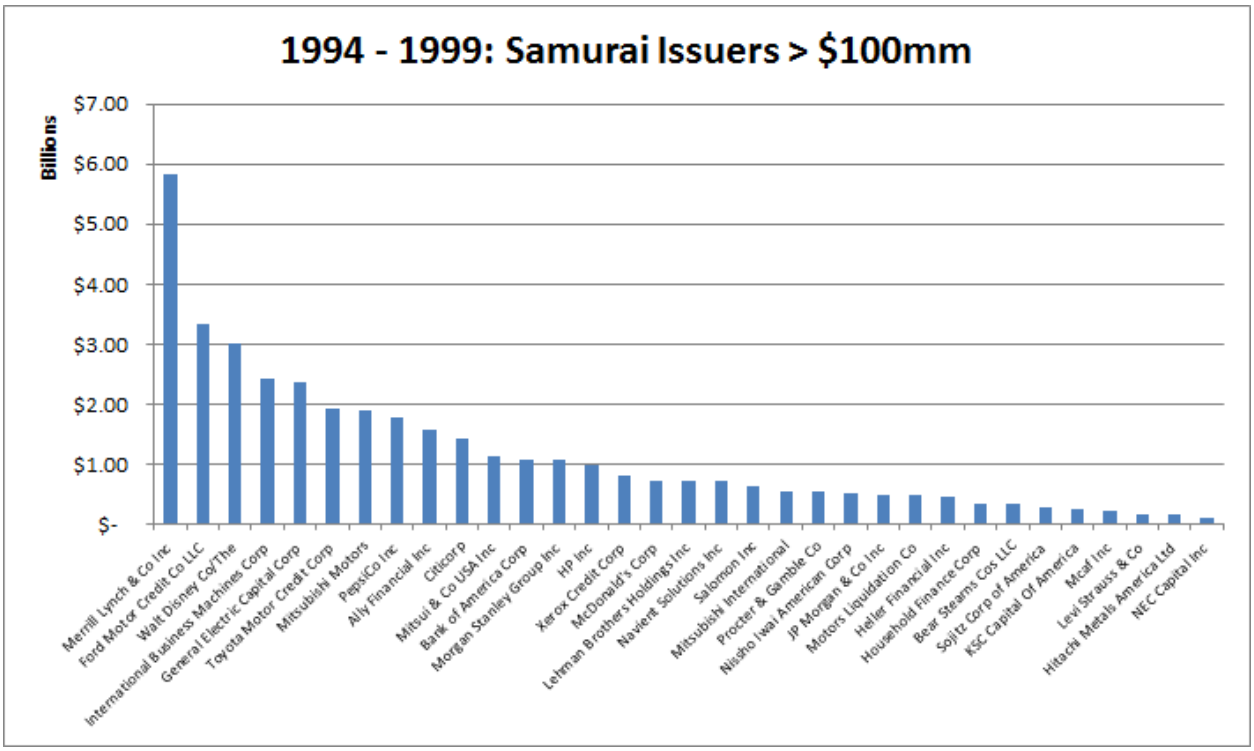
This graph also show SCI (what I had called the Shah Carry Indicator in my '[Failure of Macro Economics](#)' piece), which adds Japanese UST-based QE and US QE to YCI.



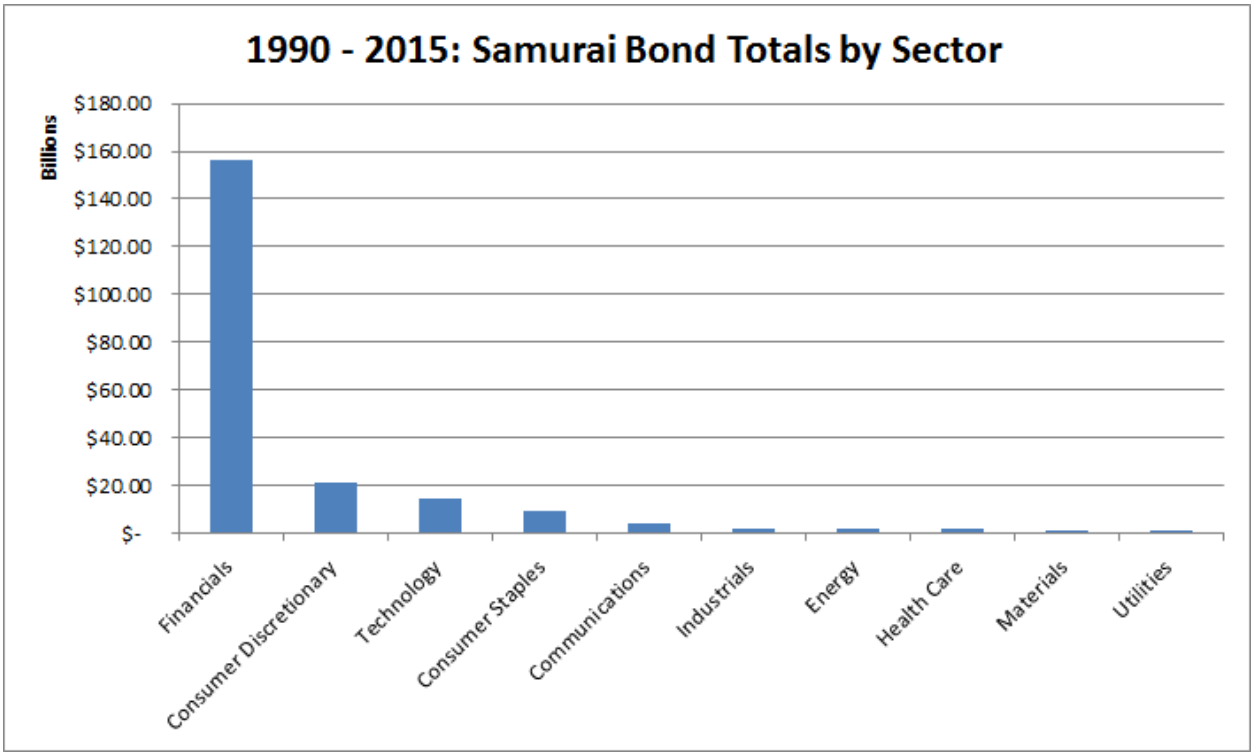
Lots of issuers – Citibank joined the party in a big way



Barely any Samurai bonds pre-Tiger

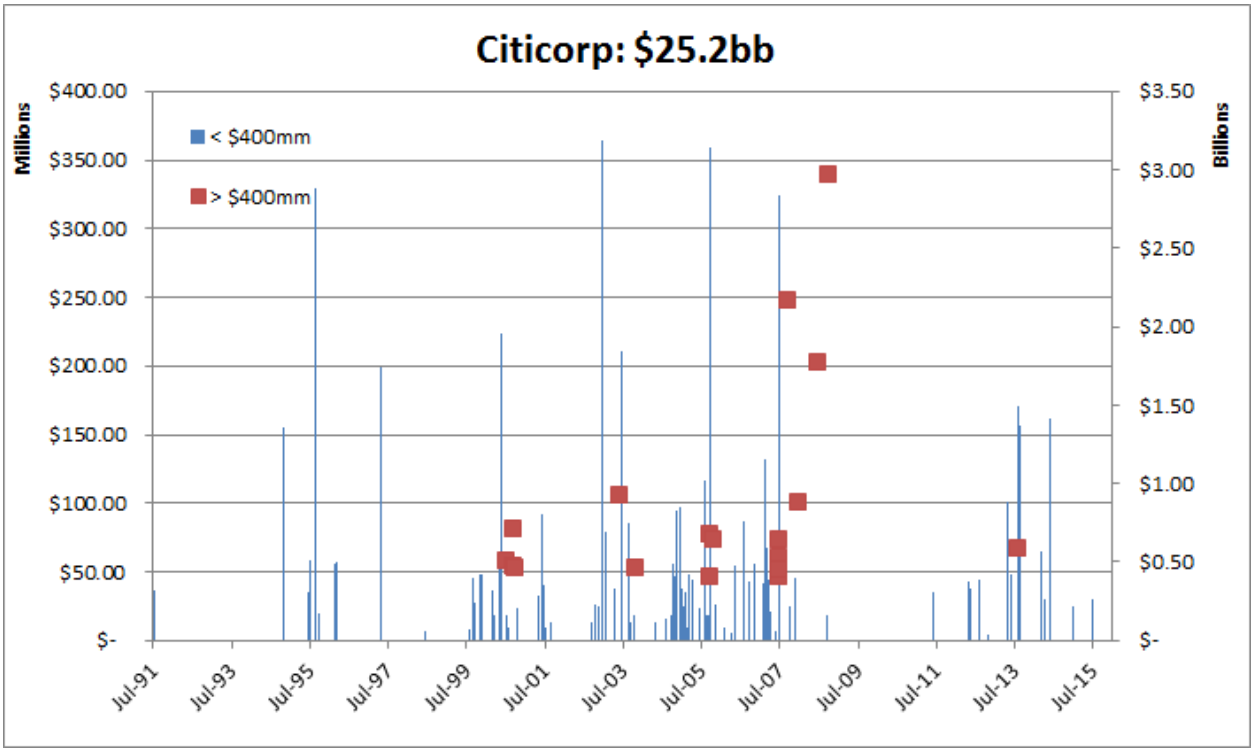


Financials have always been the largest borrowers



Lots of Super-Sized Samurai issuances between 2000 to 2007

Using Citi as an example.



Citi's 2006 Tier 2 capital was $32B, of which was Debt of $21.8B; $10B was allowance for Credit Losses;

2007 Tier 2 capital was $45B; Debt of $26.7

1998 Tier 2 capital was $13B; Debt of $7.3B

I suspect the majority was of their Tier 2 capital in the 2000s was Samurai Bonds.

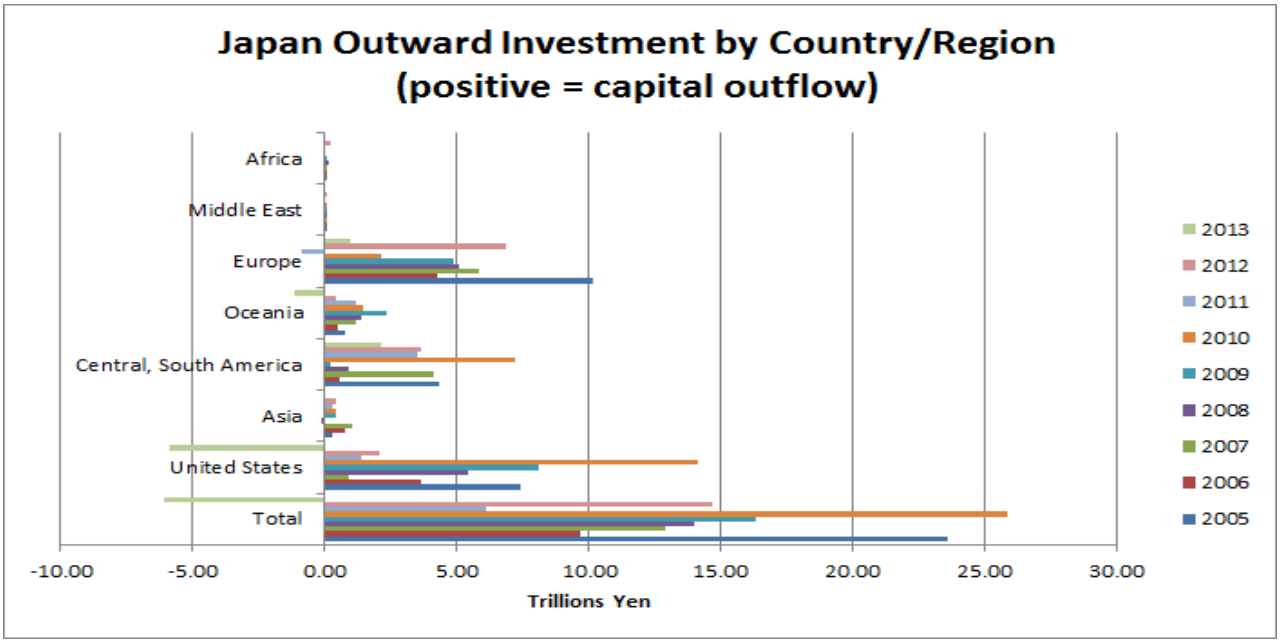
Citi's Balance sheet size in 2007 was $2.7T. In 1999, it was $669B.

That is a 4x growth in Balance sheet size, which would not have been possible without the Yen Carry Trade.

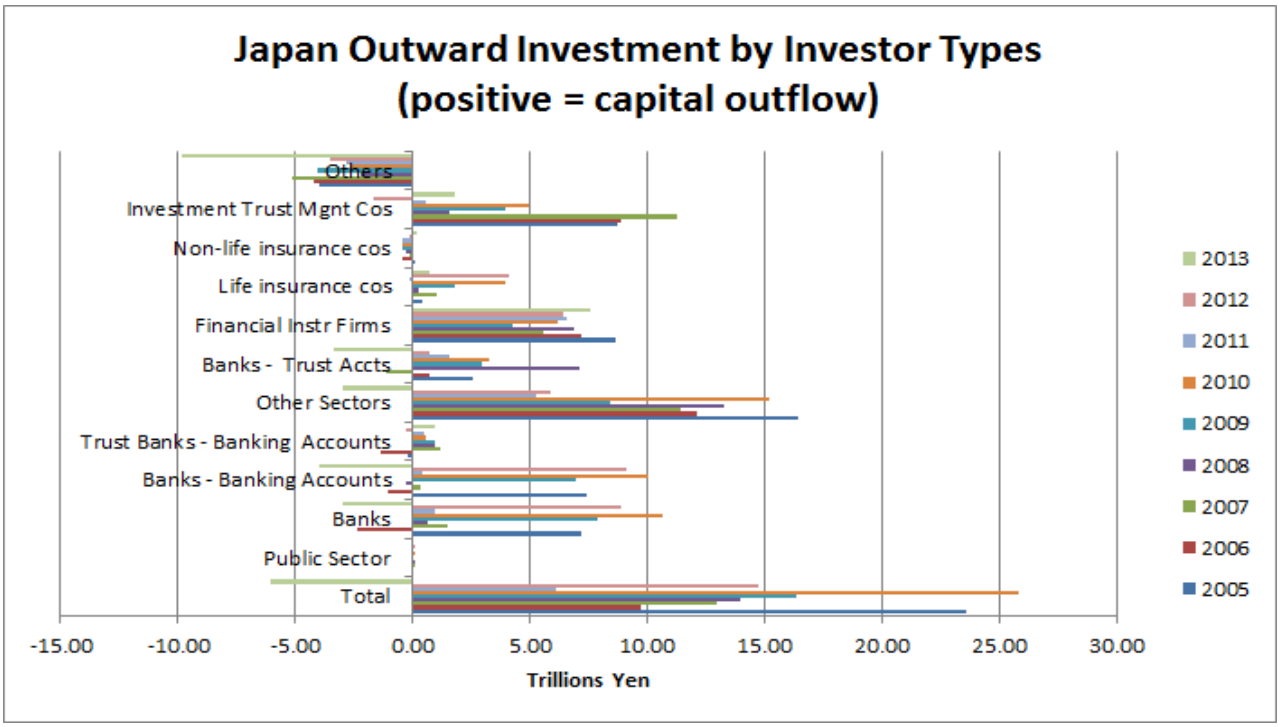
More unintended consequences of his actions that Paul Volcker did not even imagine.

The Yen Carry trade was not limited to the US

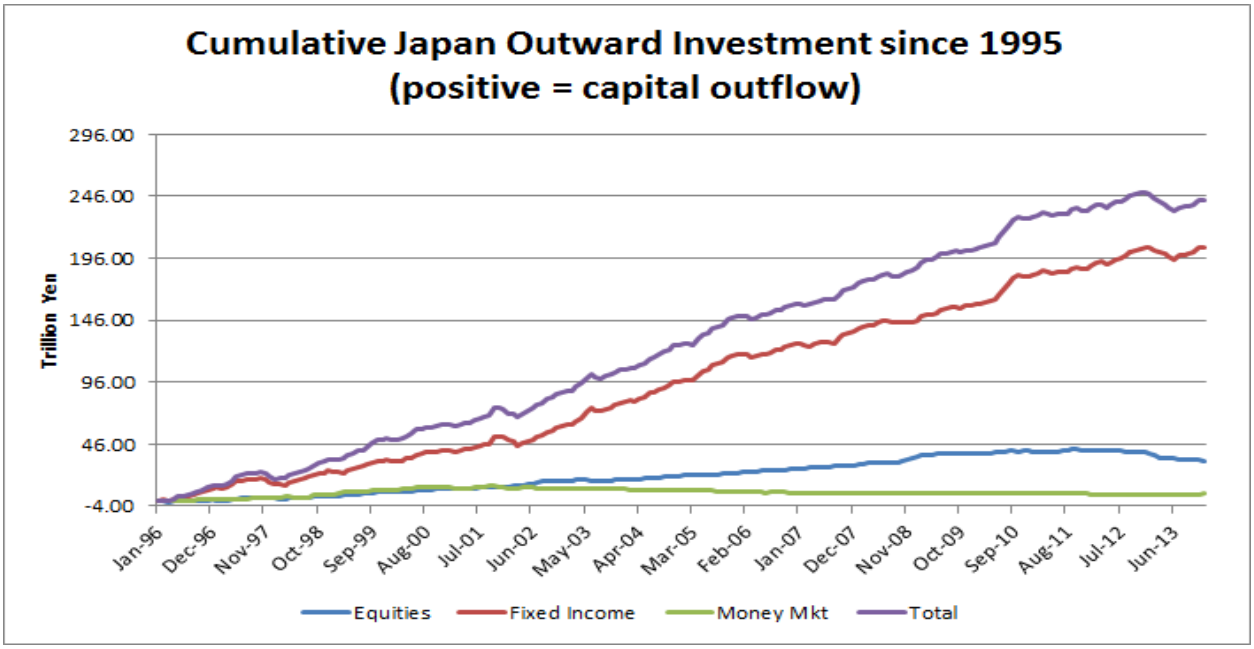
Japan exported its savings to every country, boosting their GDP at the expense of their own. However, the US was the largest recipient by far. Australian and New Zealand central bankers vociferously complained about the carry trade as it was driving up real estate drives in their countries. In the US, Greenspan decided to pat himself on the back instead. New Economy indeed.



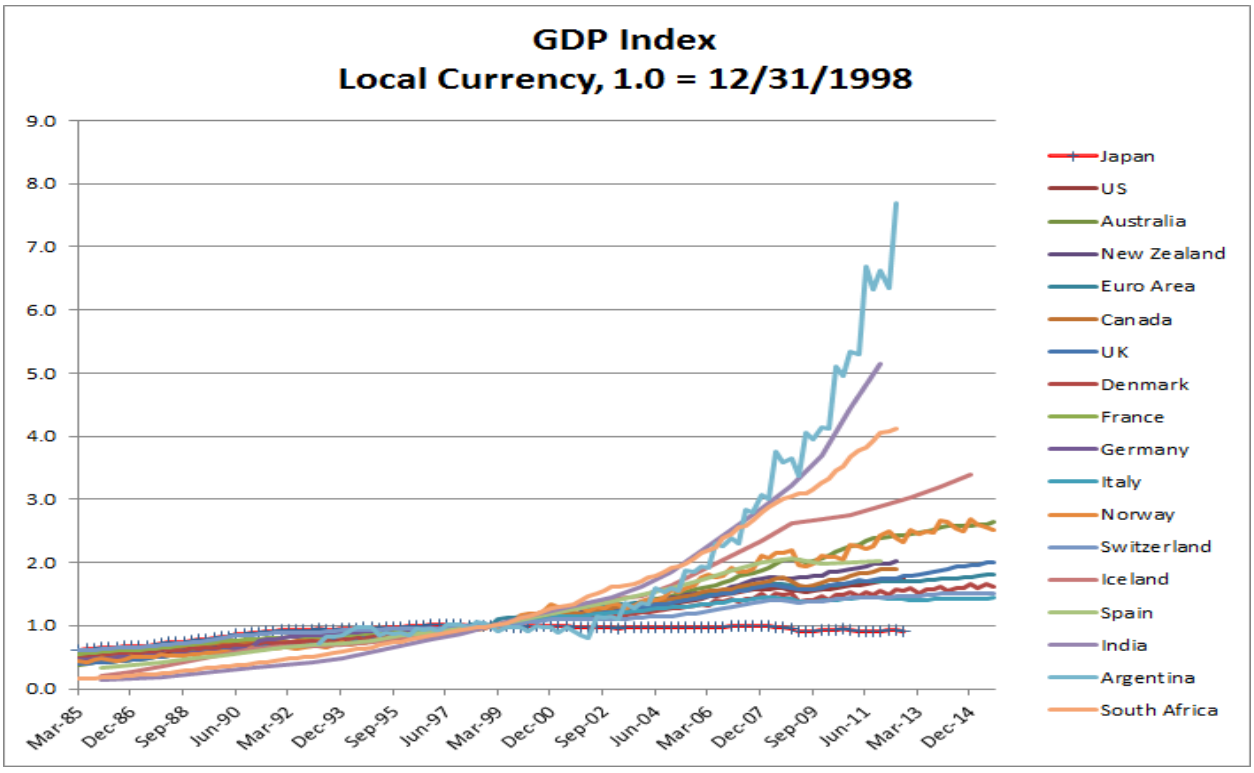
All Japanese institutions participated in exporting capital in their search for yield



Using an average Y100 for an exchange rate, by 2008, Japan had exported $2T of capital, most of it in Fixed Income instruments.



The result of this money supply and capital export has not been good for Japan. Japan has funded growth everywhere except in Japan, with its GDP flatlining. It needs to change its Economists and get rid of the Keynesians. Fundamentally, it needs to raise its rates and eliminate the Carry Trade. (This will not be good for the rest of the world though, and remains the #1 risk in the world).



If, as we have all heard for decades now, that all economies are linked, and a rising tide lifts all boats, etc, this should not have happened to Japan. Unless, of course, Japan is on the opposite side of a monetary fence from the rest of the world, being the supplier of capital and leverage, while everyone else is the taker!

Quantitative Easing – QE

From Wikipedia: Quantitative easing (QE) *is a monetary policy used by central banks to stimulate the economy when standard monetary policy has become ineffective. A central bank implements quantitative easing by buying financial assets from commercial banks and other financial institutions, thus raising the prices of those financial assets and lowering their yield, while simultaneously increasing the money supply.*

The economics research thinks the following – (Levy Institute: 'Japan's Liquidity Trap'). *Paul Krugman (1998a, b) and Ben Bernanke (2000; 2002) identify low inflation and deflation risks as the cause of a liquidity trap.*

This is nonsense. The reason for Japan's liquidity trap is that all its money supply creation and savings were being exported as the BOJ cut rates, creating (asset) inflation everywhere else, while Keynesians were lowering Japan's rates with counter-theory results. **Low inflation and deflation risks are the result of capital- and money- supply export, as should be expected with a tight monetary policy in a world with easy cross border capital pipelines**.

The theory posits that lowering rates should increase Velocity and increase Money Supply. **However capital exports stymie that, as savers, being rational, will not be oppressed into taking risk domestically when higher returns exist elsewhere.**

Micro Economics trumps Macro Economics. Micro continues to work, macro no longer does.

In other words, macro economic policy works in reverse to the standard Keynes/Hicks models that all Central Bankers seem to use (with some word changes - aggregate demand vs IS/LM), as a result of the changes in banking brought about in response to Paul Volcker's actions in the 1980s. **Volcker changed Macro. "Easing" by cutting rates is really a tightening – it reduces domestic money supply. I describe this as macro having changed from a 1-box/country model to a 2-box/country model, with the 2 boxes joined by an escape pipeline for capital/money supply to travel along.**

QE is a desperate action by Central Banks, and is the only tool left after a Liquidity Trap, when rate cuts have stopped working to generate Velocity of Money. It is a way to directly inject and increase money supply since other tools have failed.

QE is a response to an existential threat to Central banks – once a liquidity trap has been hit, should central banks exist?

To the extent that Volcker's actions changed macro and made "easing" via rate cuts impotent, you could attribute the genesis and broad spread usage of QE today to Volcker, as another unintended consequence.

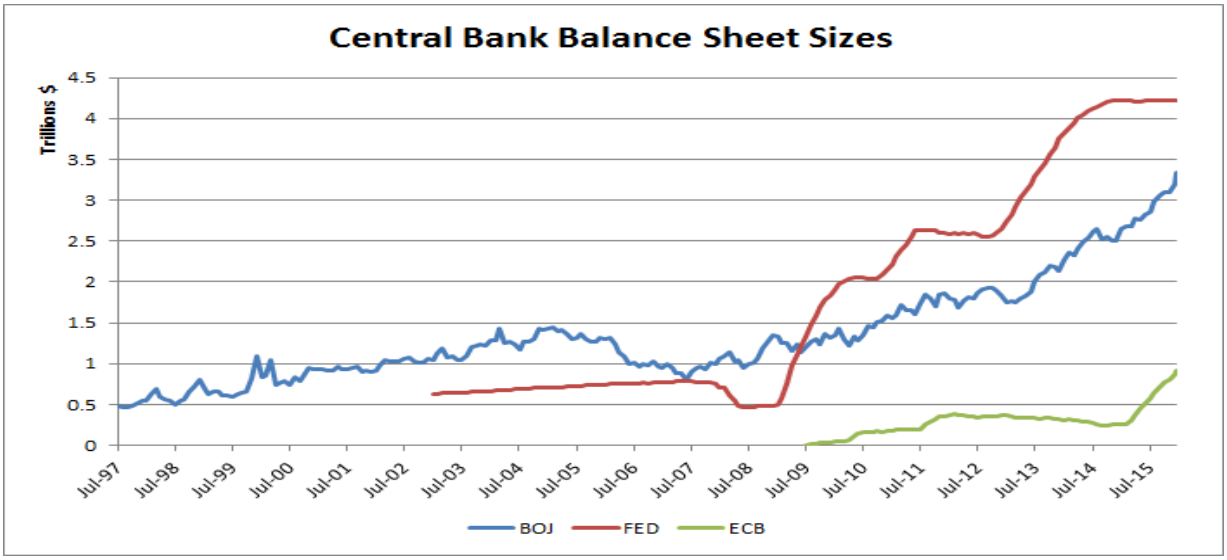
A theory I proposed in 2010: When one economy enters a liquidity trap, all monetary policy fails globally.

QE is all that remains. I'll discuss the consequences of QE usage later.

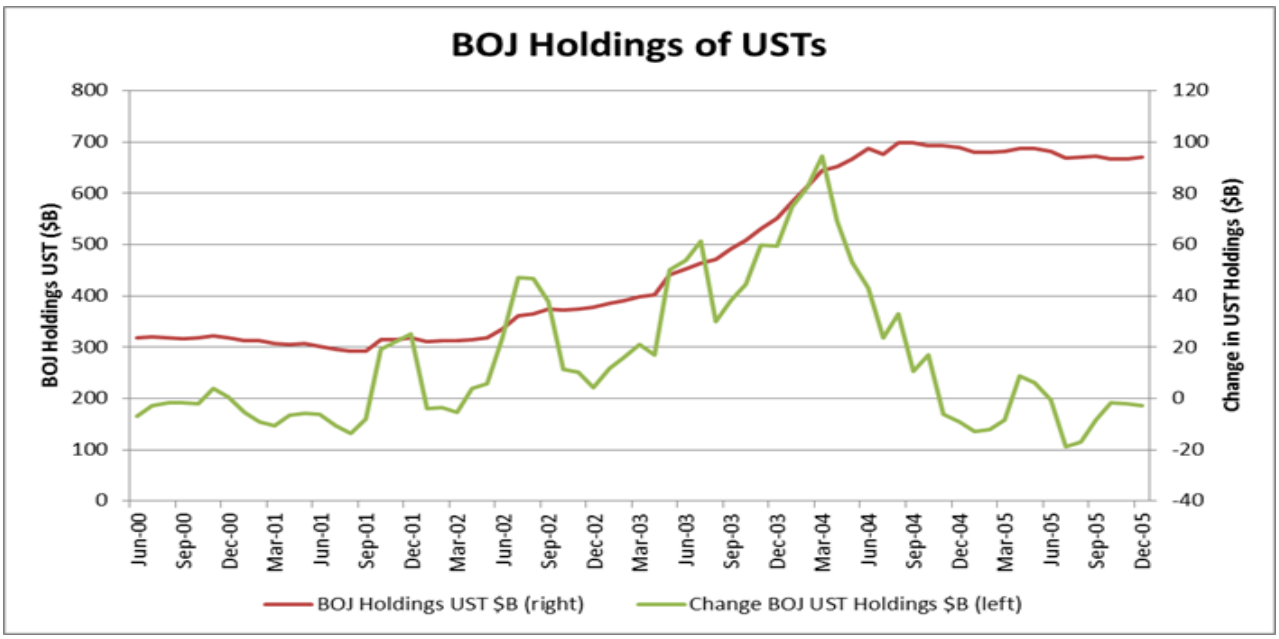
Quoting the WSJ Nobel piece linked above: *In response, Mr. Bernanke introduced and refined "quantitative easing," or large scale bond purchases.*

WSJ, do some basic research. Bernanke did not invent QE, not introduce it for the first time.

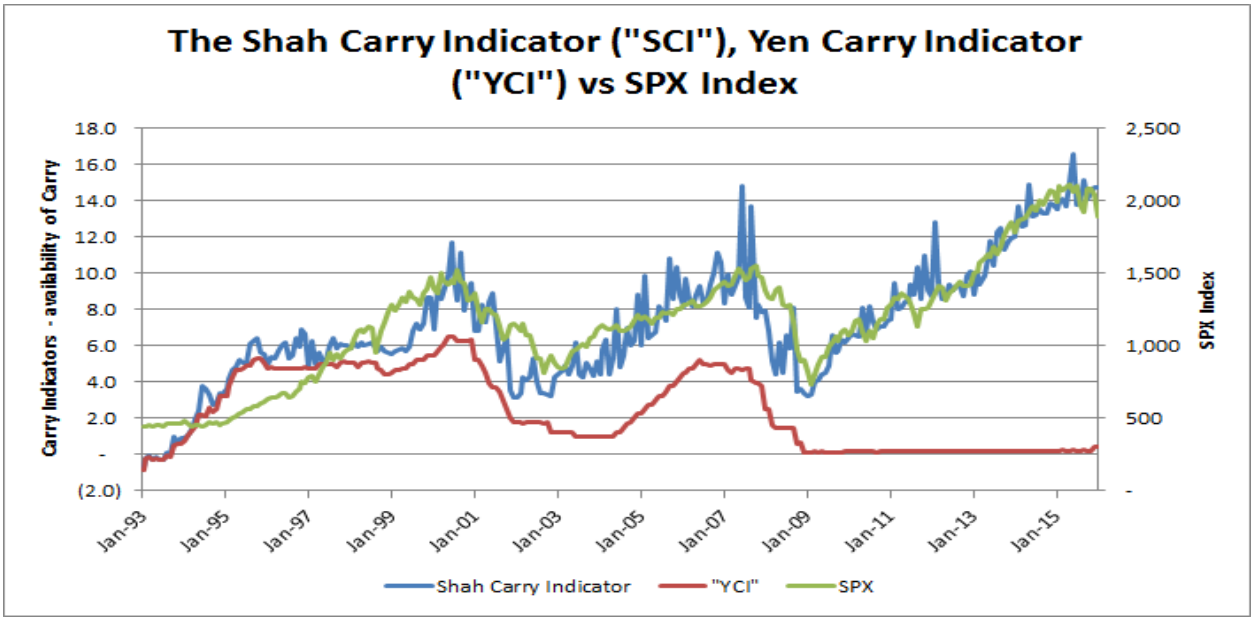
Japan was the first country to enter a Liquidity Trap, in 1998, and to implement QE. However, in addition to purchasing Japanese assets on its Balance Sheet, the BOJ also purchased a significant amount of USTs - $400B between 2001 and 2004. T**he BOJ inadvertently directly supplied QE to the US by buying USTs, increasing US money supply.** Japanese non-UST QE also ended up in the US through the other channels described previously. In general, all money created globally ends up roosting in the US, as it is the only scalable market, also explaining the current state of the Euro zone.

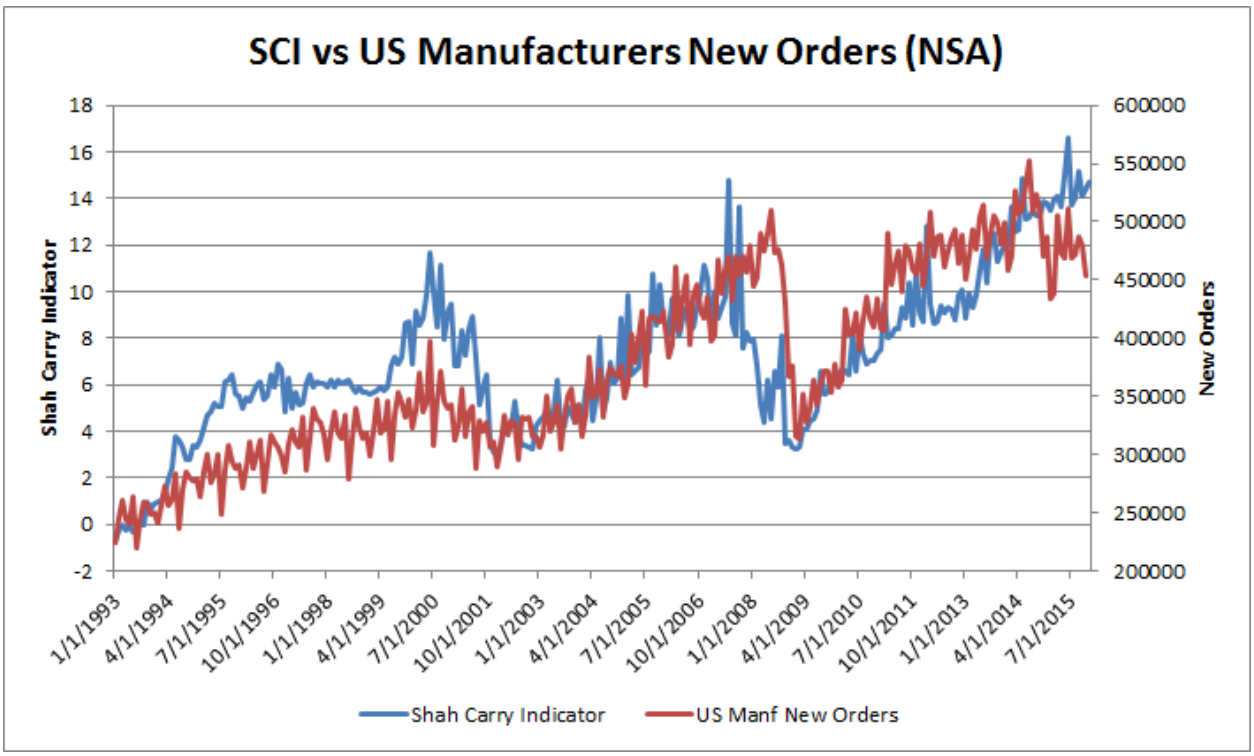


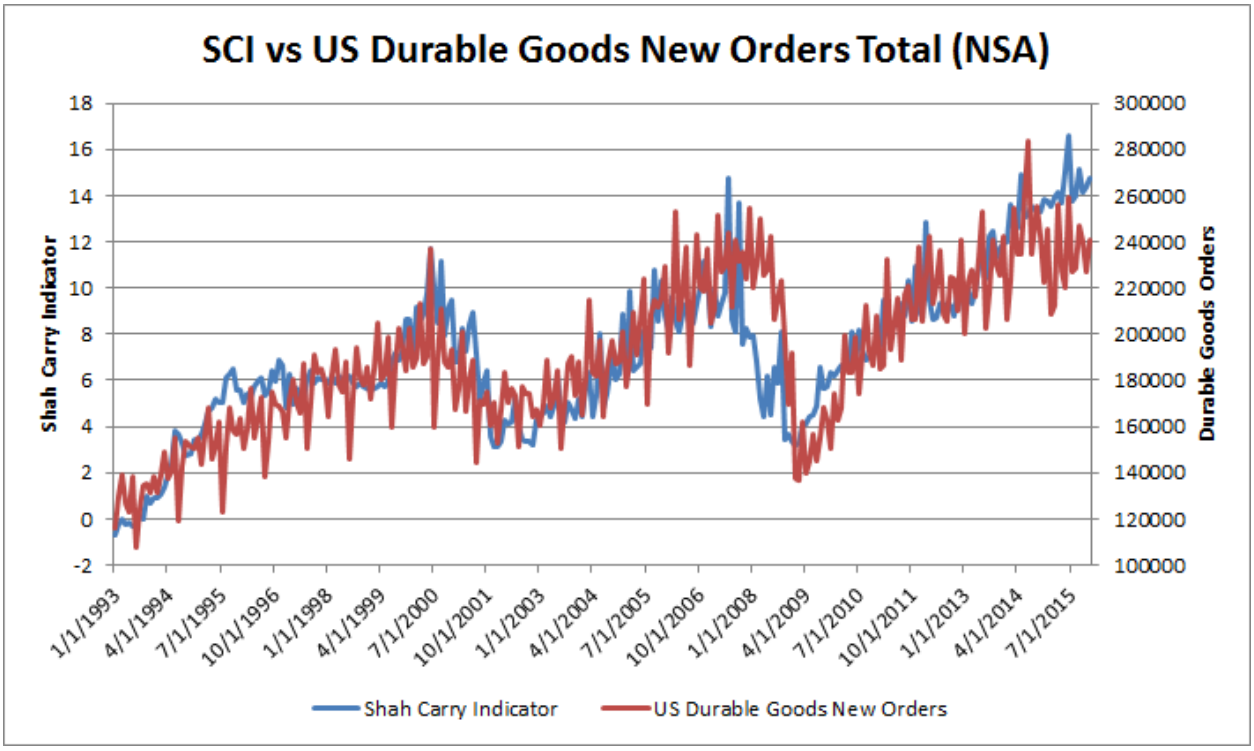
This Japanese QE was fortuitous, as the YCI had declined during this period due to the Fed cutting rates after 9/11, causing a selloff in equities. This QE from the BOJ, in the 2001-2004 period, more than made up for the decline in Samurai, Net Call, and other forms of Japanese Carry.



Adding both Japanese and US QE to the YCI model – SCI – tracks US asset prices, and fundamental economic factors almost precisely! I found this pretty shocking when I first discovered this.






SCI vs US Durable Goods New Orders Total (NSA)
Shah Carry Indicator
Durable Goods Orders
18
16
14
12
10
8
6
4
2
0
-2
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
1/1/1993
4/1/1994
7/1/1995
10/1/1996
1/1/1998
4/1/1999
7/1/2000
10/1/2001
1/1/2003
4/1/2004
7/1/2005
10/1/2006
1/1/2008
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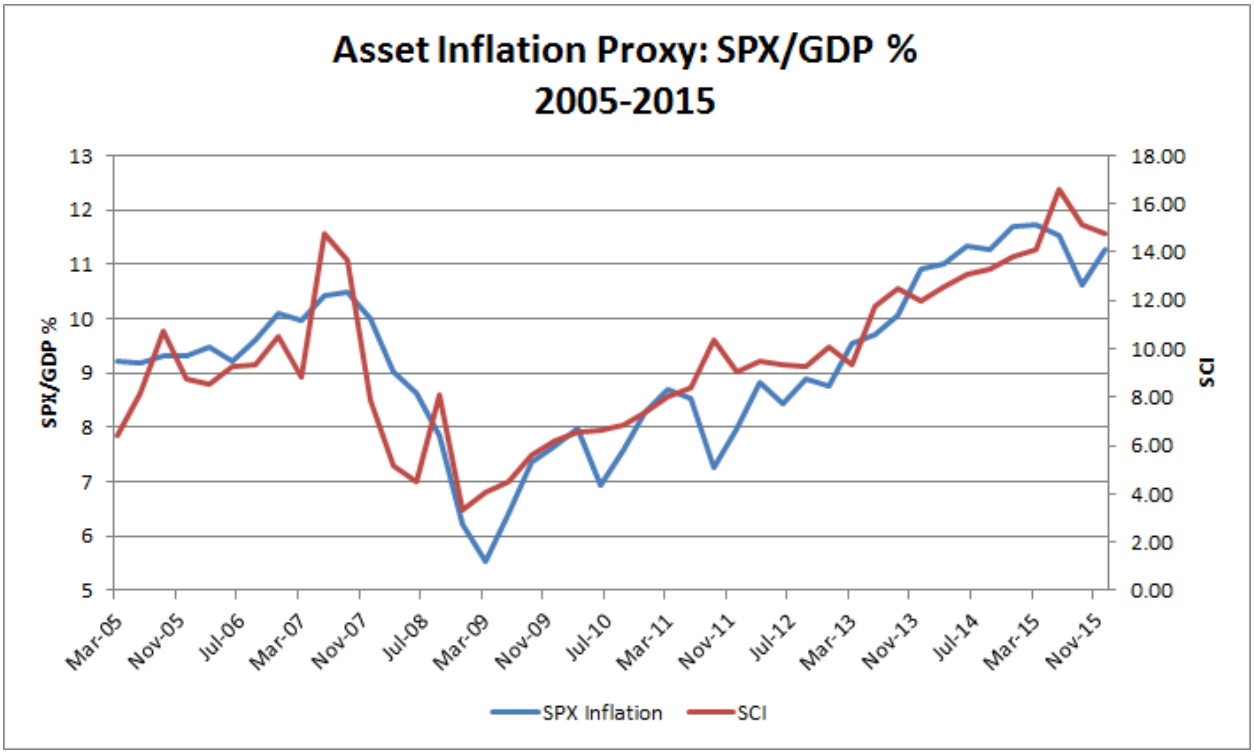
1/1/2013
4/1/2014
7/1/2015
Shah Carry Indicator
US Durable Goods New Orders


Asset Inflation Proxy: SPX/GDP %
2005-2015
SPX/GDP %
SCI
13
12
11
10
9
8
7
6
5
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Mar-05
Nov-05
Jul-06
Mar-07
Nov-07
Jul-08
Mar-09
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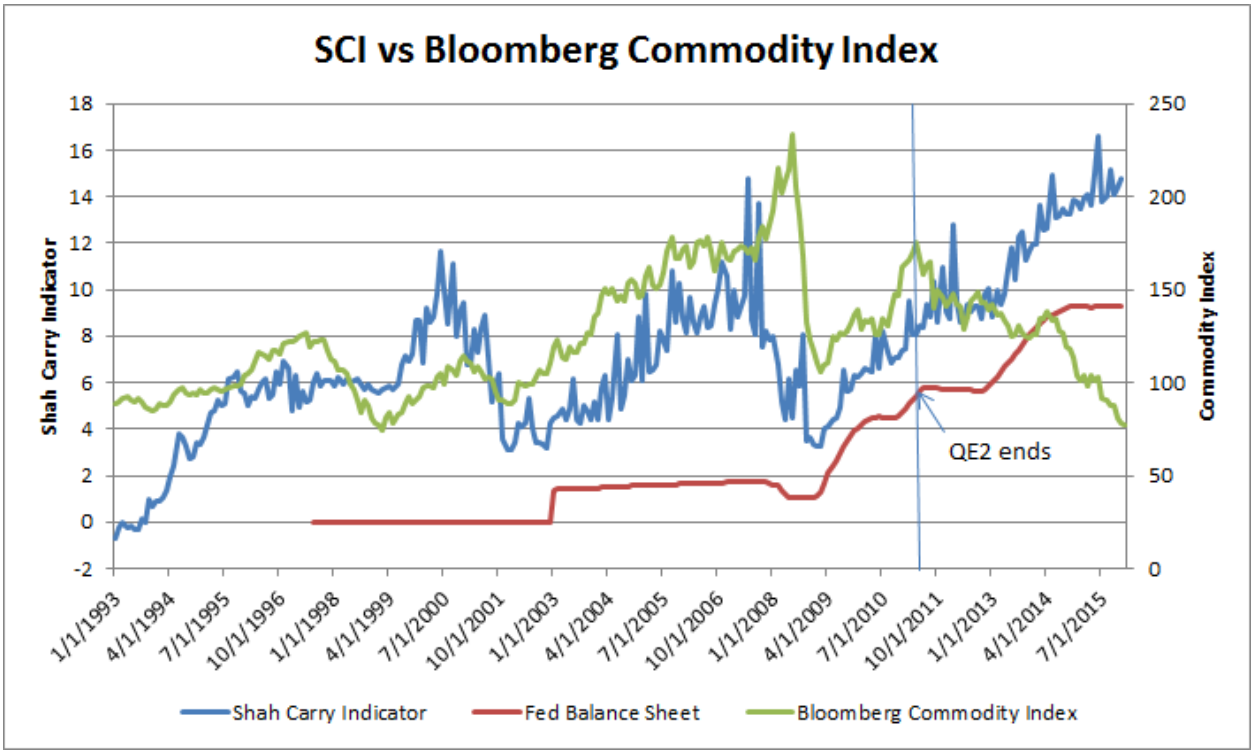
Nov-13
Jul-14
Mar-15
Nov-15
SPX Inflation
SCI

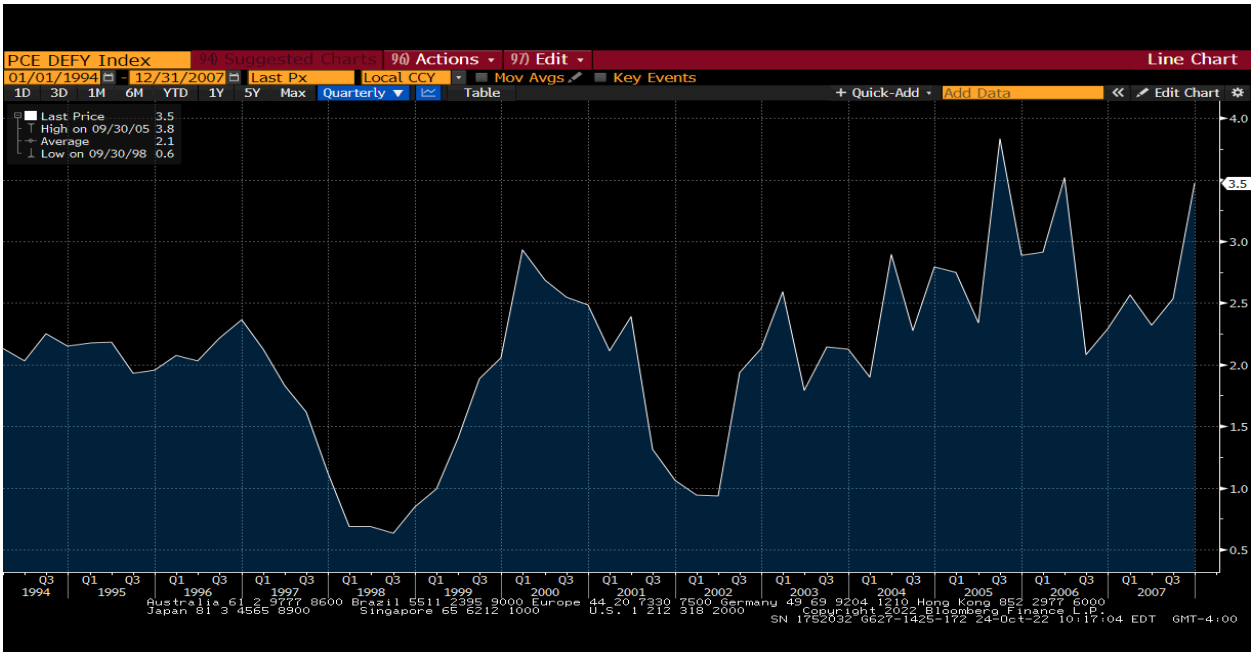


I believe the purchases of USTs by Japan to have been an important factor in the 2003 recovery in the US, (which is variously attributed to Greenspan, magic, or both) resulting in a rates rally, a steep yield curve, and the mortgage refinancing boom that occurred, as well as not only limiting the decline in the US stock market, but also helping it turn around and rally. This is discussed in detail in Interest Rates Swaps as a Benchmark. I did not figure out this 2001-2004 QE till 2016 when I was writing the Swaps piece – during the Crisis Note years, I thought this was a US-Carry trade, which it might have been for other countries.

Mortgage Refinancing Index

By 2004, we had satiated the demand of the economy for "stuff" (commercial buildings, shopping malls, cars, larger homes had been filled with furniture and TVs, etc), but since the availability of cheap capital kept producing houses, and Basel II kept demanding 'AAA' MBS, the banks lent money to Subprime borrowers, creating a new asset class and a new class of borrowers, leading to the 2005 spike in PCE shown below.

In spite of continued growth of M2 and M3, by 2005 nominal PCE had peaked and was declining, giving Bernanke a justification to cut rates in 2007.



<u>The Great Deleveraging…er...Financial Crisis – August 2007</u>

Until 2005, I had been oblivious to the Yen Carry Trade. I had first published the concept of using Swaps as a benchmark and to hedge MBS in 1990, and I had been tracking supply of hedges (UST and Agency bonds) to value MBS and fixed income bonds since then. This was a great model for the pricing of debt assets ("LIBOR OAS" is now THE benchmark for bonds), and whose ignoring had existential implications for LTCM. However, in spite of working at Nomura when the Yen Carry trade started in 1994, I had not made the connection of the Yen to US GDP and the stock markets, and like everyone else, had not been aware of the Japanese QE after 2001 that so dramatically impacted US markets and banking.

In 2005, I had embarked on a hunt for capital to start a client-centric MBS broker-dealer, and had been introduced to Kaupthing Bank, an Icelandic bank that at the time was the 5th fastest growing bank in the world. They were looking to start a platform to distribute Icelandic bonds. When I asked why anyone might care for Icelandic bonds, they said the words 'Carry Trade'. This perked up my ears.

Carry trades should not exist due to Interest Rate Parity - I had learned this in an International Economics class - as Interest Rate differentials should be offset by currency appreciation rates, neutralizing hedged trades. Unhedged carry trades are then just speculation on the currency risk.

This led me to research the Yen Carry Trade, and around 2006, I discovered the financing of equity trading and banks using the Yen Carry trade. By 2006, I was seeing signs of the risk of unravelling of the Yen Carry Trade and excesses in MBS trading by levered investors, and I started warning my clients about this. Like in 1996, they thought I was crazy – I was an MBS guy trading with MBS investors. I started posting my messages to clients as Crisis Notes in 2007 on a public blog site, so non-MBS people could find them and be alerted, which are now also on MBS Mantra's website. I also unsuccessfully tried to raise capital to take advantage of this, and in 2007 ended up creating an MBS desk at Man Financial (aka MF Global) to guide clients, and to provide liquidity to my clients during the Crisis.

The first formal Crisis Note of 8/10/2007 was prescient, even if I say it myself. Here is the bulk of that message.

> *It is my opinion that the "market" & the talking heads are WRONG. This is NOT a Subprime or MBS/ABS problem. The creation of Subprime was just a SYMPTOM of what was wrong with the system, and the subprime failure was the first of the Jenga pieces to come out. The fundamental problem is that the bull market in both debt and equity has been driven by global leverage, and I strongly believe this is going to mostly unwind. I've been talking about this since early this summer with some of my (skeptical) clients, but much of it is starting to happen, and I believe it will continue. And, unlike many clients, I don't think the Fed and other central banks will be able to contain it. What we're seeing is just the preview of the Global unwind. The following are the sources of leverage that created the bull market of the past 5 years:*
>
> 1. *Repo & ABS CP (hedge funds, SIVs, SPVs)*
> 2. *Levered Loans and bridge loans (private equity - stock markets @ premium)*
> 3. *Yen Carry Trade (invested in stocks and bonds, euro, USD, NZ, Aus, Iceland)*
> 4. *CDOs & CLOS helped re-leverage a lot of this leverage. Blame Basel.*
>
> *Many financial products and real assets were created to feed this frenzy of cheap money: homes in Orange County and Florida, subprime mortgages to get people into these loans, levered loans, covenant light loans, highly levered private equity deals, equity bridge loans, etc. Instead of money being raised to invest in cheap assets, assets were created to fulfill the supply of cheap money. And as more money came in, they rose in value, pulling up the prices of everything else.*
>
> *There is no "real" equity to support this, and not much growth in real assets to support this. Much of the growth in asset values came from rising prices. When the leverage leaves, the price and value of all assets will decline till they stabilize at the value of the true 'equity' in the global balance sheet. Overvalued and unnecessary assets obviously decline the most, if not evaporate in value.*
>
> *…..*
>
> *4. Yen Carry trade - this is the $1 trillion question mark - how much and how rapidly will this unravel?*
>
> ** Anecdotal evidence suggests that Japanese housewifes have supported this heavily with retail savings (so called "Mrs Watanabes") everytime the dollar has strengthened, selling more Yen and buying $ and USTs. Will they come to the rescue? Or with USTs rallying, and rates rising in Japan, will they give up and buy back the Yen?*
>
> ** I STRONGLY BELIEVE THAT THE YEN CARRY TRADE IS THE REASON THE FED CANNOT CUT RATES.*

** The system may not be able to handle an additional 1 trillion of deleveraging. The graph below shows an incredible correlation between the S&P and the Yen. I have heard many anecdotal stories about how the US stock markets are dominated by program trading, and I suspect that the programs are funding or hedging their purchases and sales with Yen.*

I think Big Ben's position is that he is also not going to bail out bad investment decisions made by investors – that's what markets are meant to fix, and teach. I think they will only intervene seriously if the system is threatened. That means some investment banks and banks will be allowed to fail. They might engineer some mergers. The Warren Buffet option?

Again, I don't think they have the option to cut rates, at least not till the Yen has already rallied. So, maybe 105 or 110 in YEN may signal that they cannot cause further damage by cutting rates. –

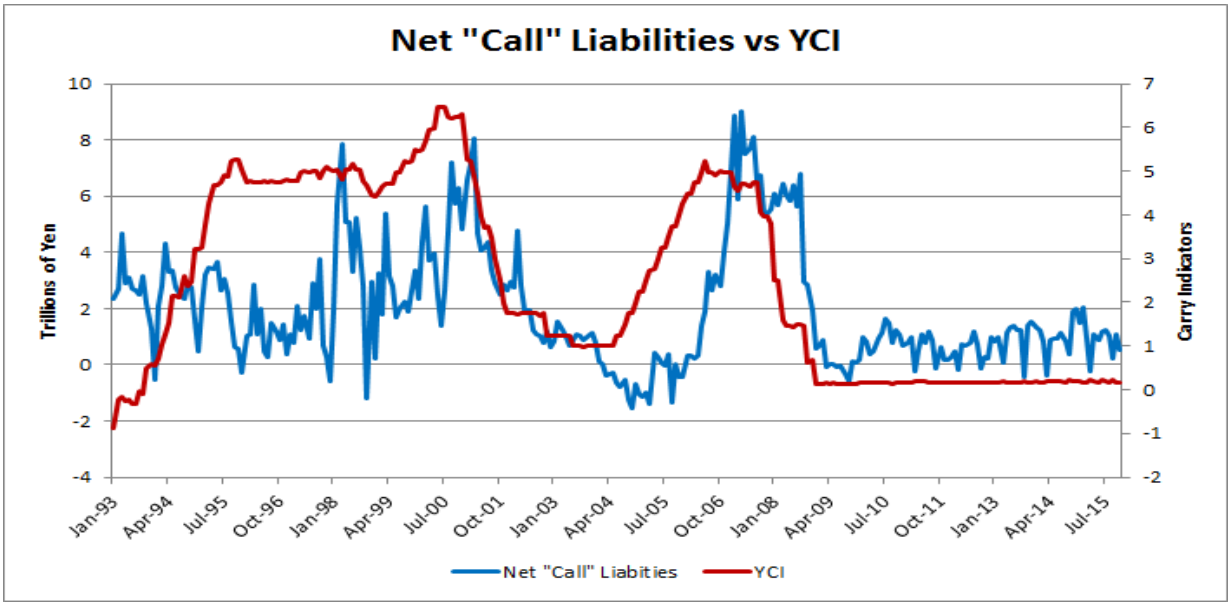
The only solutions to dampen the effects of this deleveraging will be:

- *System repo to provide daily liquidity.*
- *Raising limits for conforming loans so that high quality home owners in the US that meet agency credit criteria are not penalised by the lack of financing in the jumbo markets.*
- *Reducing margin requirements.*

I don't see how the global unwind can be stopped. While most of these assets are money good, it's going to be hard to find enough balance sheet for them. That means prices will need to cheapen.

I was wrong and my hopes were dashed. Bernanke was not listening. On 8/27/2007, he cut rates.

YCI went to almost zero, and the Yen Carry trade unraveled in September 2007 as Japan withdrew its short duration capital, in spite of attempts by banks to borrow more at the BOJ window and via Samurai bonds – the Net Call Liability graph is repeated below.



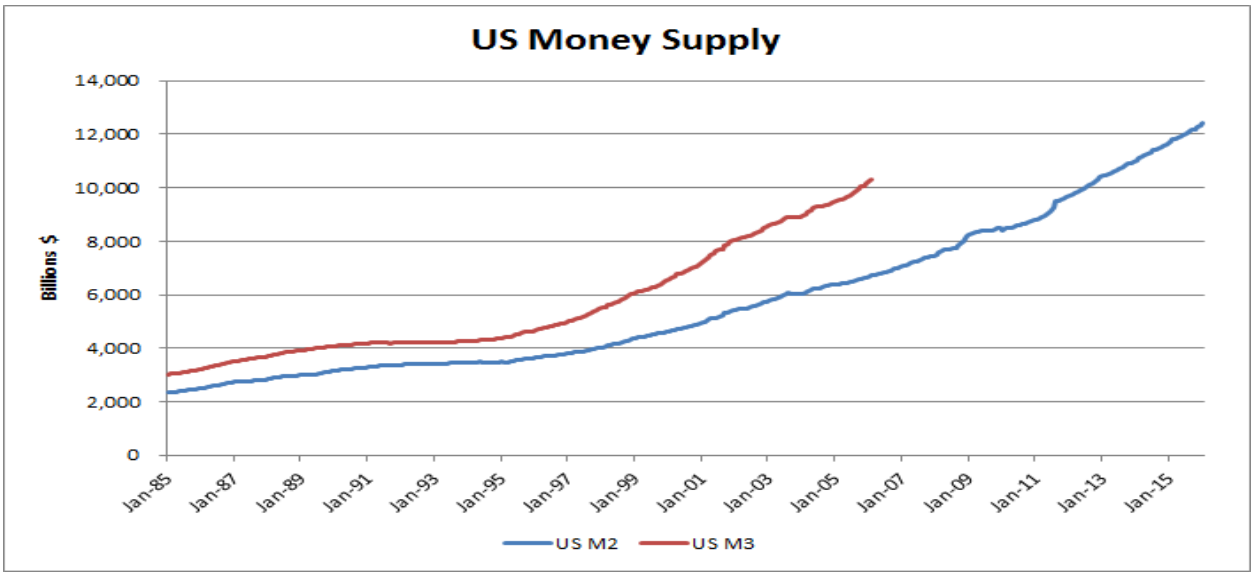
While we cannot see bank liabilities unravel in real time, we saw this deleveraging occur in the price of the Yen.

We certainly read and heard stories about the difficulties banks and dealers were having in financing their balance sheets, and I personally witnessed some very bad behavior by banks at the expense of repo clients – margin calls at 4pm, involuntary liquidations at bad marks, not allowing clients to post more capital, etc – in order to conserve capital. SIVs were funded by CP, and could not roll them. This Crisis Note from Nov 2007 is still a good read.

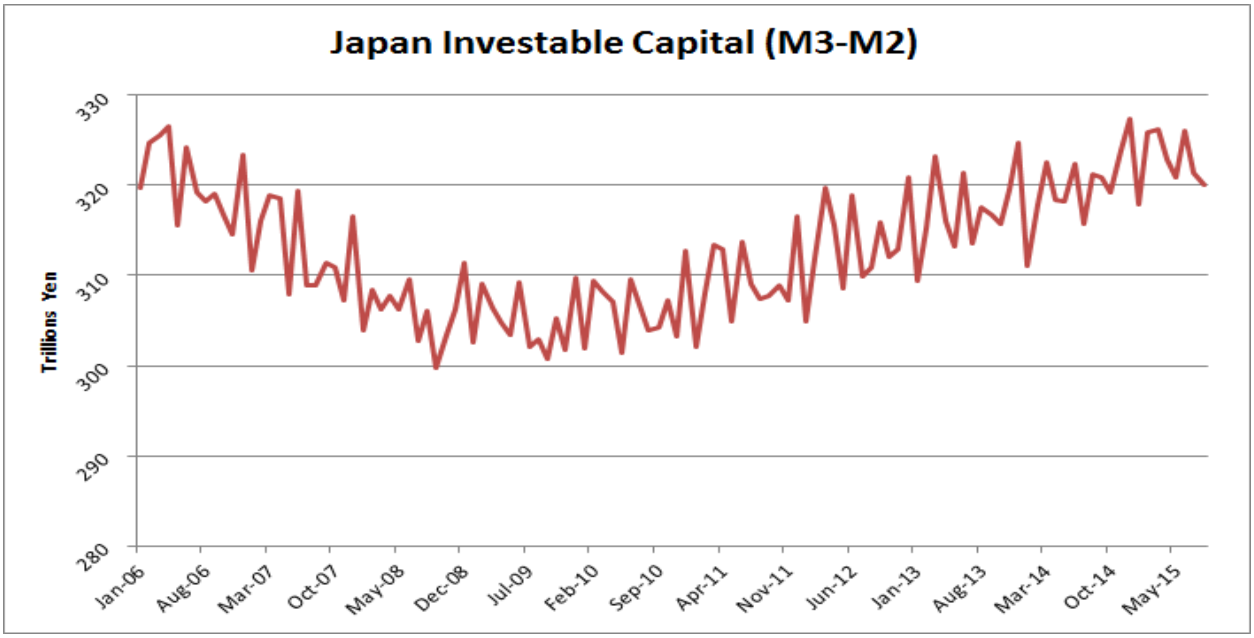
We know what happened to banks and investment banks – many were all caught holding MBS and CDOs in their prop books and could not raise sufficient new capital to cover their losses. But, in general, they had too many assets on their balance sheet using leverage, not just in MBS, and could no longer fund them, forcing them to sell whatever they could. This eventually resulted in capital raises, bailouts, and forced bank conversions so that they could borrow from the Fed. Even Goldman needed a bailout in spite of being short CDS, as it was an AIG counterparty.

In the Failure of Macro, I define a term called Investible Capital (IC), which is M3 – M2, both money supply measures that Powell finds worthless today. Marginal investment actions (buying or selling of assets) impact M3 through balances at brokerage firms. If someone sells assets, (or repatriates capital in Japan's case), IC will go up. If Japan invest overseas, Japan's IC will go down.

In the US we stopped measuring M3 in 2006, which I have been complaining about for 15+ years, including in last month's newsletter. However, below we can clearly see that US M3 was growing faster than US M2 once the Yen Carry started in 1994, along with BOJ UST-QE in the 2000s. (Not understanding this M3 growth is probably what led Greenspan/Bernanke to eliminate it.) We should have seen US-IC collapse once Bernanke cut rates in 2007.

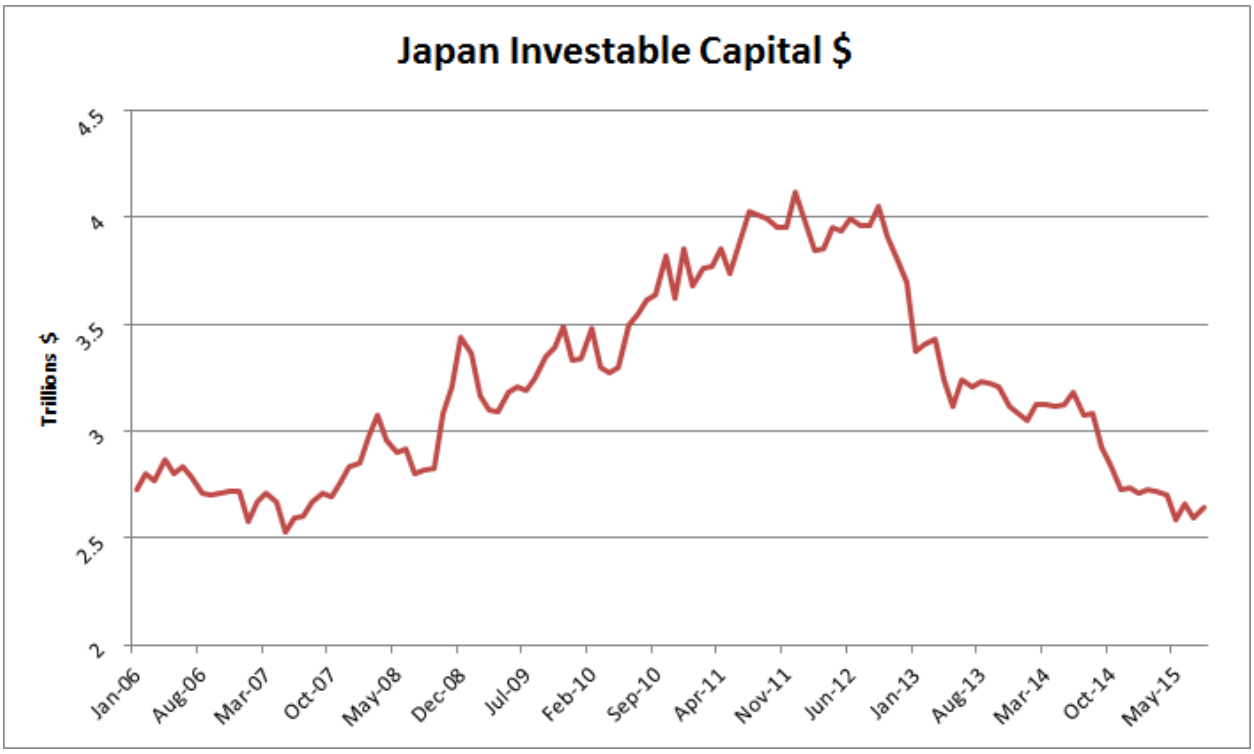


We can however see the mirror image in Japan's IC. When Bernanke cut rates, Japanese IC went up as capital returned (~25T yen), on top of an ever increasing Japanese M2, and Yen went from 120 to 75.

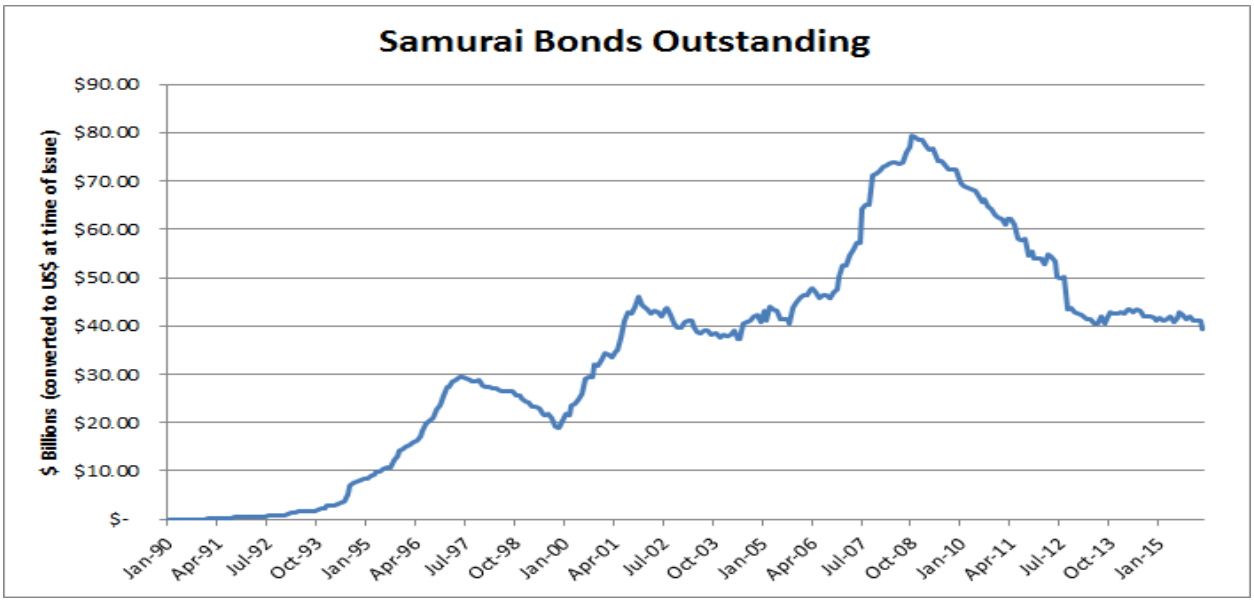


Converting to $, Japan's IC went up by $1.5T, from 2007 to 2011, reflecting the US deleveraging that occurred.

In the absence of the US IC data and graph for the period, this graph, 2007 to 2011, is the GFC.



Japan even stopped buying Samurai bonds by 2008.



When initial rate cuts caused the problem, Bernanke did not understand this and cut rates further exacerbating the crisis, until the US too was soon in a Liquidity Trap. Once Japan was trapped in 1998, this was inevitable.

Bernanke and Paulson did one thing correctly in the GFC days – they recognized the excess asset problem in the bond markets, and, like in the RTC days, created versions of "bad banks" to house these assets, providing the

balance sheet to fund them with public/private partnerships to replace the lost leverage of banks and SIVs. So PPIP, Maiden Lane, MLEC, CPFF, AMLF, TALF, and others were all created to house assets that had lost their balance sheet. The FOMC purchased Agency MBS that came out of REITs and other investors. I view the initial Agency MBS purchases by the Fed, not as QE, but bad bank substitutes.

Eventually, the Fed resorted to QE to inject money supply, via UST purchases that were created out of thin air by the Treasury, doing QE1, QE2 and QE3, an activity that became the Fed's reason to exist, and continues to this day.

#Pandora's Box

QE is a Pandora's Box. It cannot be closed without significant economic 'pain', as the levered growth movie that QE has funded has to be run in reverse. We saw a preview with Bernanke's Taper Tantrum. There is a 'trick' to pull this off without pain, which Powell seems to be using, probably unintentionally.

To recap: **Volcker Plaza Accord ➔ Japan Carry Trades ➔ Japan Liquidity Traps ➔Japan QE ➔Overleveraging and accelerated growth of Banks ➔Deleveraging and GFC ➔ US and Euro liquidity Trap ➔US and Euro QE.**

Most of this could have been cut short and prevented had Greenspan recognized the change in how Macro worked, instead of thinking that he had solved financial crises.

QE (as well as carry trade flows) primarily achieves three things:

- **asset inflation** – the money created has no marginal use once consumers have been satiated, so the money goes into financial assets and share buybacks, leading to PE expansion and rising prices
- **income inequality** – only those with assets benefit from growth of asset prices
- **usage of leverage** - asset return expectations of investors such as pension plans can only be met through usage of leverage for example – explaining the current Gilt crisis and the deleveraging of March 2020, and the explosion in private equity that use levered loans for their acquisitions (PE = levered small/mid caps). Levered loans are the new Samurai bonds, as Japan is the largest purchaser of CLOs (yes, it's more QE).

We have had an after-tax debt hurdle rate of < 1% for the past decade. Yet, with an almost 0% hurdle rate, there has not been a business case to use debt for productive uses, where the expected return of an investment project can exceed the cost of debt. Instead, corporations that issued debt purchased back their stock! (I discussed this in Predictions 2017.) We need people that understand Corporate Finance and more MBAs in the Fed, instead of PhD's in Economics. Central banks continue to push on the money supply rope, with low and negative rates and more QE than ever, just to tread water on employment and inflation, with barely any C&I lending growth.

The combined result of these is that risk has gotten magnified, as should be expected with the usage of leverage. Every crash since LTCM has been the result of deleveraging. Financial returns can be greater, but the crashes are larger too, as assets inflate, resulting in even more QE being used for the subsequent turn in the stimulus cycle.

There are many indirect effects – for example, asset wealth growth leads to larger homes, and thus more energy consumption. Expensive cars and trucks manufactured and demanded instead of cheap fuel-efficient cars. Luxury and disposable consumption creating environmental issues? Wage levels that are too high that prevent competitive manufacturing relative to other countries? Excess assets? Crypto and VC gambling? SPACs? An economy that is 78% "services"?

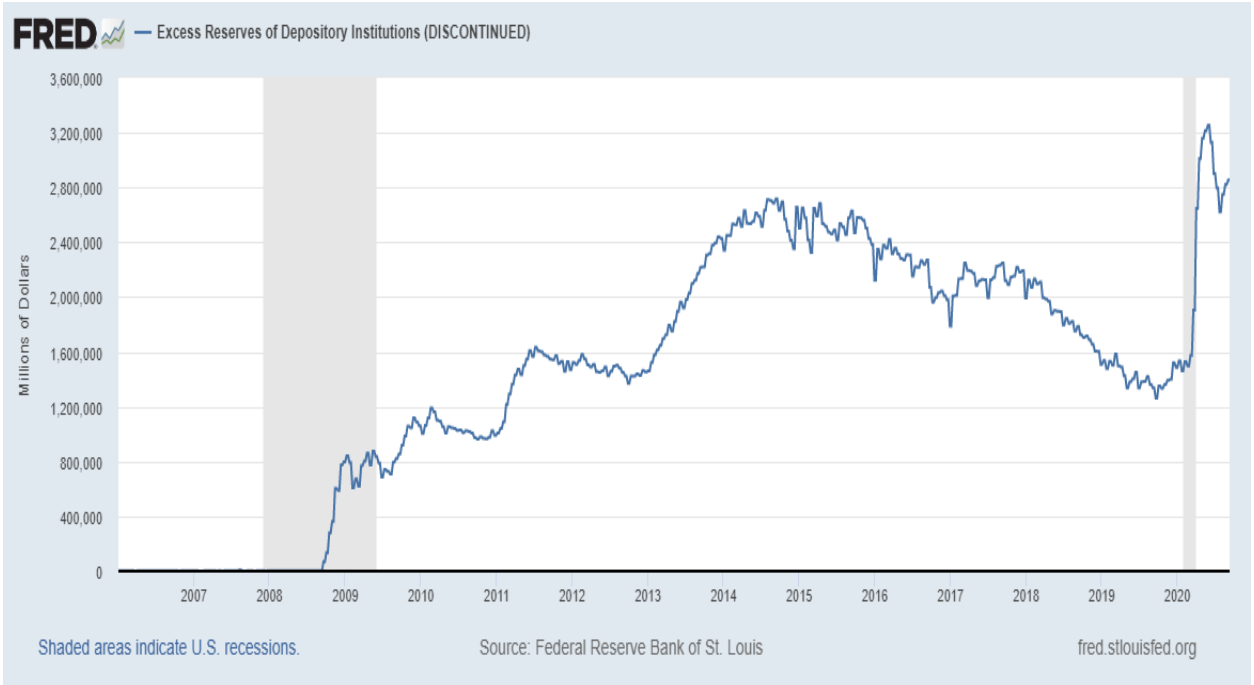
The whole point of the interest rate policy of central banks with a fractional banking system is the Velocity of Money. **The failure of QE and other Fed actions over the past 1.5 decades to achieve growth in velocity of money**

is quite telling. This lack of velocity, giving us asset inflation instead, is also visible in the Manufacturing % of GDP that is also shown below.

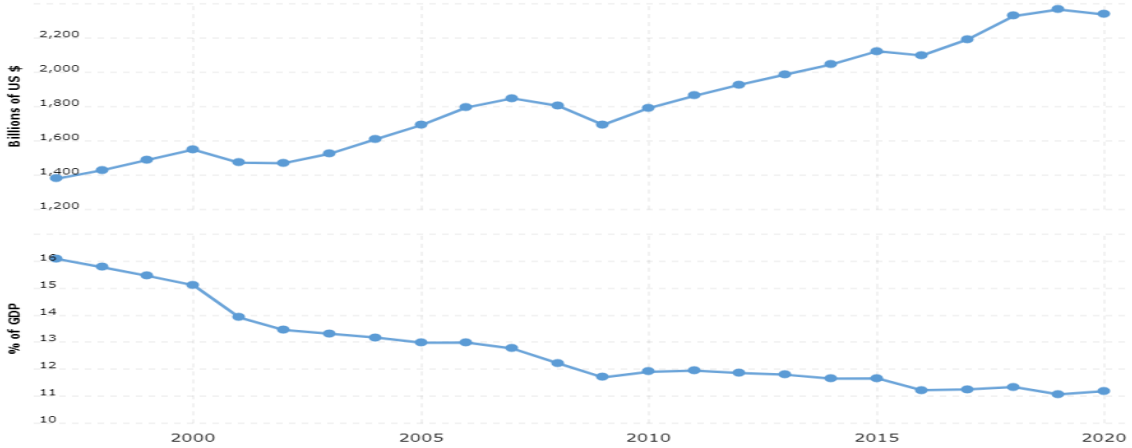
Velocity of M2 money supply

The lack of Velocity is indicative of the pointlessness of increasing the size of banks through QE and of the injection of reserves into the banking system.

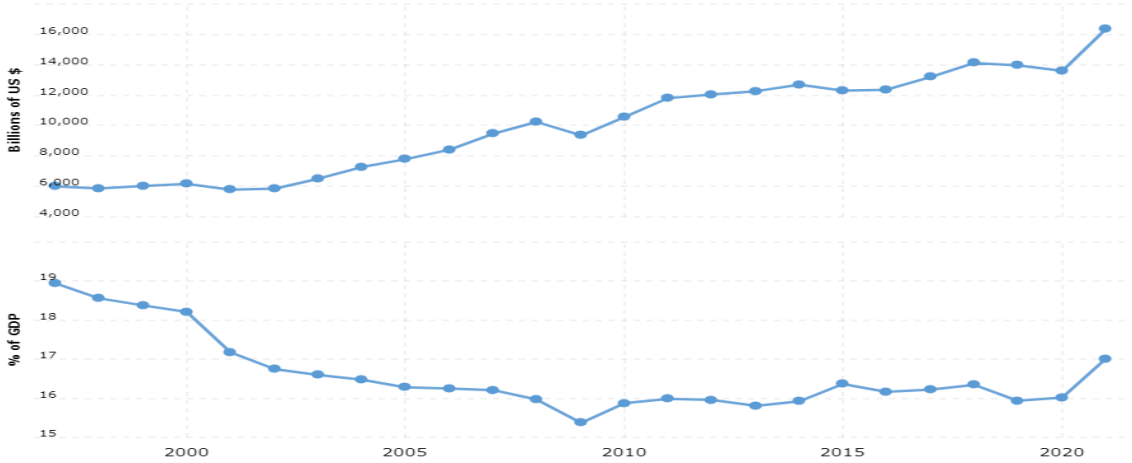
Excess Reserves of Depository Institutions – discontinued, of course, as it could lead to Fed supervision



US manufacturing output as a % of GDP has continued to decline – our GDP growth has come from Asset inflation.



Compare this to Global Manufacturing:



https://www.macrotrends.net/countries/USA/united-states/manufacturing-output
https://www.macrotrends.net/countries/WLD/world/manufacturing-output
Source: World Bank.

We are now dependent on a global supply chain, and are no longer independently self-sufficient.

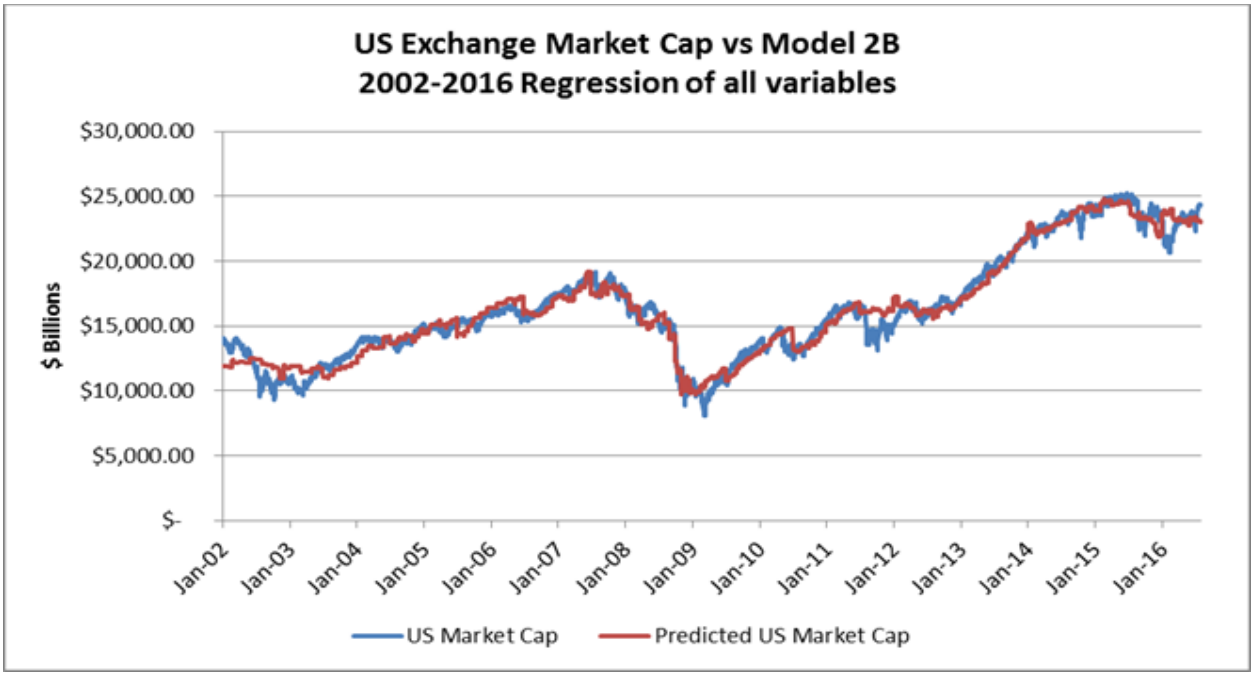
Putting this all together – Injected Capital

In 2016, I combined the concepts described above into a unified model (that I called Injected Capital), and regressed them against the US Stock Market Capitalization, in a piece called Understanding Beta – Determinants of the US Stock Market. (Follow the link for the variables and the various models that were tested).

The result is a 96% Adjusted R-squared model for the US stock market from 2002 onwards (the market cap data starts in 2002, but it should work going back to 1994, as shown in some of the charts above).

Injected Capital Model: Statistics 2002-2016	
Multiple R	**0.98**
R Squared	**0.96**
Adjusted R Squared	**0.96**
Standard Error	838.78
Observations	3804

It is important to point out that this is not an over-fitted macro model based on iterations with hundreds of variables, as is typical of most 'Quant' strategies. **The theory behind this model was created and described in real time, as the GFC unfolded, from 2006 to 2012, in my Crisis Notes between 2006 and 2012.** The data to test the theory was gathered in 2016, in 'The Failure of Macro Economics', and finally tested in 'Understanding Beta'.

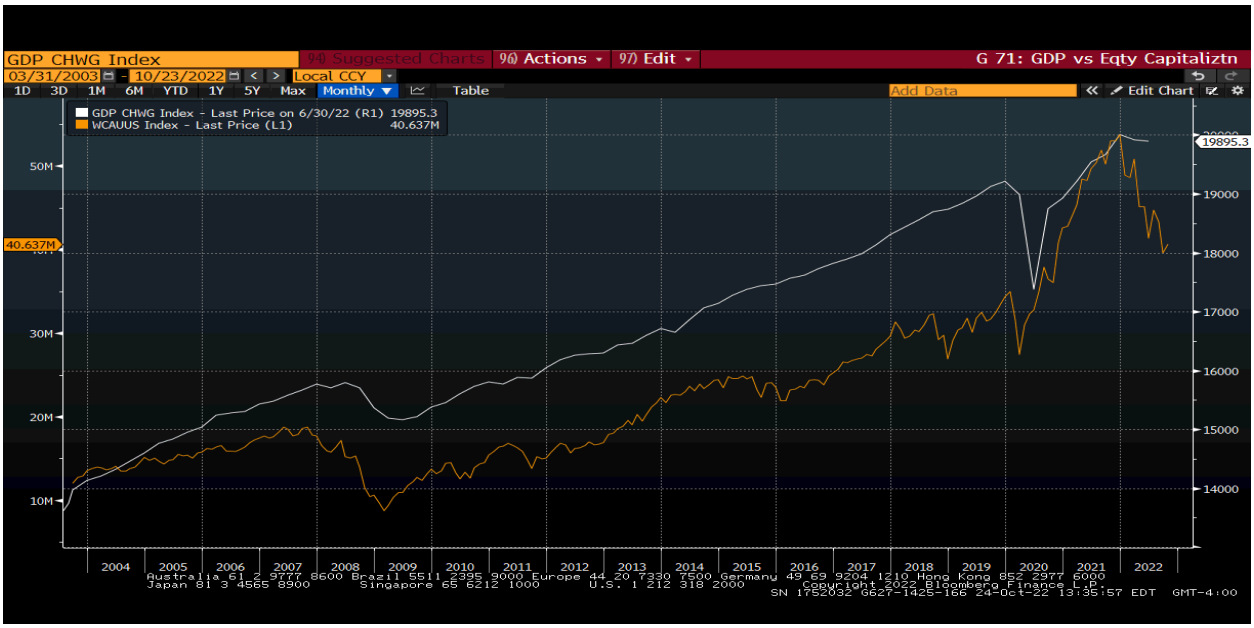


This graph tells us that the GFC was not a Black Swan event. It was the inevitable reaction to the simultaneous macro policies and activities of the BOJ and the FED. It was visible to anyone that looked, as I did, starting with the first Crisis Note.

Is this proof that markets are efficient? I think so, extremely efficient, to the extent of being Pavlovian. Leveraging and deleveraging are rational micro-economic incentive driven decisions to changes in Central Bank money supply.

Macro analysis of Injected Capital produces the best models for asset pricing and risk management. But note that stuff taught in business schools, information discounting and the like, are not part of this. It's also totally different than the 'Fed Model' using rates and dividends. DCF will probably still work for relative value between assets.

Since US GDP is largely driven by wealth growth (leading to services growth and not manufacturing), the Stock Market is a direct window into GDP, so the model can also easily be applied to US GDP. (WCAUUS is the total US Stock Market capitalization.)



Don't forget, we are here today because of Paul Volcker, and not the so-called "Black Swan" events of the past!

Yellen and Powell

In 2016, when I published 'Understanding Beta', Janet Yellen was in a similar position to Jerome Powell today. At the time, I wrote the following:

> *"Currently, the Fed is looking to raise rates and withdraw QE, while Europe and Japan are simultaneously looking to lower rates into deeper negative territory. In this treacherous period, understanding the importance and workings of the Carry Incentives and Foreign QE should gain in importance in determining US investment valuations.*
>
> *In today's world, a US rate hike (with an increase in the Yen Carry Incentive) will likely lead to increasing US Money Supply from Japan and Europe, and subsequent investment inflation.*
>
> *The greatest investment risk today comes from the Fed: were it to reduce QE, and sell its SOMA assets, there is a high likelihood that markets could crash again."*

As I have discussed in the past, QE/QT vs rate-cuts/rate-hikes is a balancing act. If understood and managed correctly, it should be possible for a US central banker to maintain stable asset values and GDP (the "trick" I mentioned earlier). Yellen's rate hikes only helped to increase asset values, with asset demand coming from Japanese and European asset managers (as reflected in the price of the USD in Yen and Euro).

Market participants, including economists and journalists, as a whole do not understand the implications of this, and will whipsaw the market while rates are being hiked and when QT finally takes place. The Fed has not shared any sign of understanding this either, and if they are aware of it, maybe they don't want to signal their dependence on foreign capital. In any event, unless the Fed makes an attempt to update economics and educate the markets, one has to be prepared for volatility, even if the balancing act is inadvertently pulled off.

Yellen did not complete the task, and cut rates again in 2019 as global growth began to slow, with US inflation low in any case. Our low inflation for most of the past few decades, I believe, can be blamed on the lack of manufacturing growth and the migration to an asset-inflation-driven services economy.

It is only the recent post-COVID move to just-in-case manufacturing, and the need to reduce reliance on global supply chains, resulting in on-shoring of manufacturing and production, that has finally created wage inflation and labor shortages due to a shortage of manufacturing skills, with job openings at a high and the labor participation rate barely budging upwards.

In Understanding the US Economy, a Crisis Note from 2009, I suggested that living horizontally along the highway system creates a wage hurdle rate to accept a job, driven by the energy costs of going to work. Commuting distances and high energy costs post-COVID probably have played a role in the high jobs openings rates.

Most of the inflation is supply-side anyway, and it's unlikely Powell will contain it unless he can cause demand destruction (discussed in Jan 2022 newsletter), which I have doubts about due to the Carry Trade Incentive he has created. Personally, I would let this inflation run until another generation of skilled workers is created and manufacturing and housing is created in low wage regions with cheap real estate and cheap energy. (I've said this often: I believe that real estate prices are an arbitrage mechanism to normalize savings rates between regions). Detroit? Ohio? West Virginia? Canada should jump all over this, since we don't seem to want their cheap and clean hydro-Quebec power in New England.

Powell would like to be Paul Volcker reincarnated, the next legendary inflation fighter. Central bankers have yet to acknowledge asset price inflation as a form of inflation, making the link between their actions and market reactions volatile. I have not thought through the various unintended consequences Powell's policies will generate, but I have no doubt there will be some, and there will be other tools created to quell inflation if it does not subside on its own, if that continues to be his primary focus. Unlike Yellen, who cut rates for global concerns, Powell seems be focused entirely on domestic inflation and employment, damn the rest of the world.

I've keep getting multiple requests to discuss the Yen from some of my former Crisis-Note reading clients. Maybe in future newsletters.

Updating the Injected Capital Model

My 2016 economics output, much of it linked above, took many months of 18-hour days crunching data, begging Bloomberg to forgive my violations of data limits, creating models, and writing. However, it was the result of my curing myself in 2016 of a medical condition that occurred in 2013. The medical condition created a gap between 2013 to 2016 where I was not writing about economics. The output in 2016 was the opposite of a writer's block – a writer's spew if you will – the computations and relationships that I had subconsciously been thinking about came pouring out, and I had to record them on paper.

The Crisis Notes between 2007 and 2012 were done while I was at Cantor Fitzgerald and MF Global, and helped cement my brand as an independent thinker as well as creating the brand of the desk I was building, and certainly helped protect my clients who had supported my career in MBS and finance.

Gathering the data to update the Injected Capital model and to make it easily updatable is going to be very time consuming. However, I've been following most of the variables, and I'm certain that it continues to work, with QE dominating the post-Yellen environment.

Today, I am not even sure how many people are reading this stuff. If you have gotten to this point, please send me an email. Try clicking here.

Without more assets to manage and more fee income, so I can justify the time and resources needed to redo the IC model as risk management for my clients, I probably will not be able to update it. If there is enough interest, maybe a crowd-funding model, or a consulting assignment can be discussed. Please let me know your thoughts.

Regards, Samir Shah

October 24, 2022

Samir Shah
President and CIO
MBS Mantra, LLC (a CT Registered Investment Advisor)
"Alpha Through Analysis"®

203-388-8356 P
203-273-0360 C
sshah@mbsmantrallc.com
https://www.linkedin.com/in/samir-shah-6a9096a
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