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The Failure of Macro Economics - Carry Trades, Money Flows, and The Pricing of Assets

Samir Shah

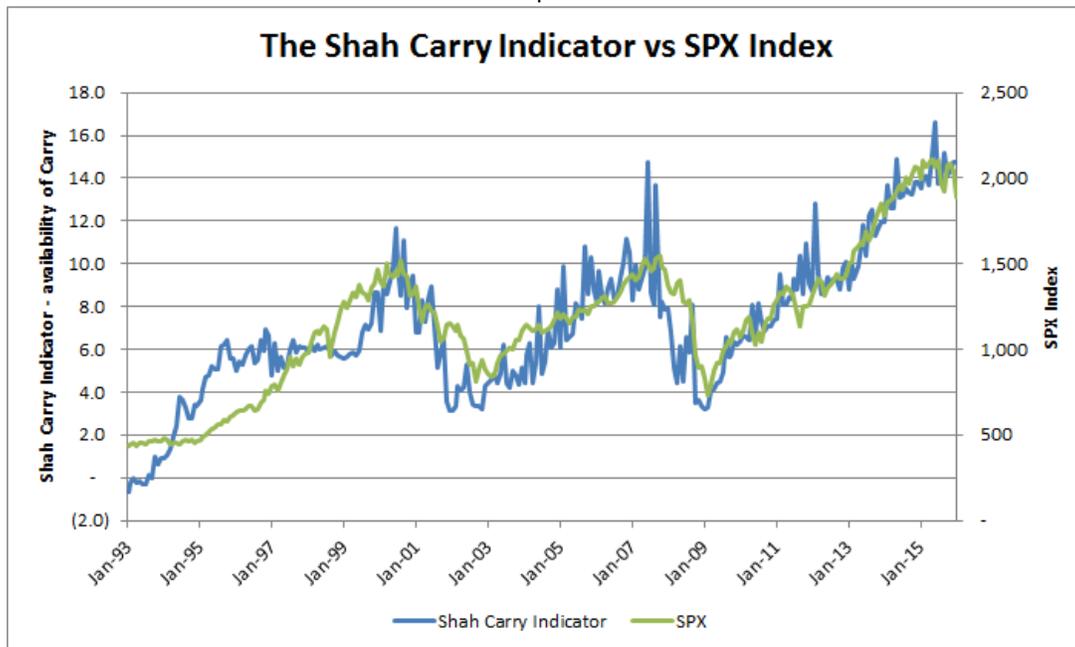
2/24/2016 v1.02

(First run through, hopefully does not need too many corrections. Please keep the feedback and comments coming - they will make the next version even better, thanks - sshah@mbsmantrallc.com)

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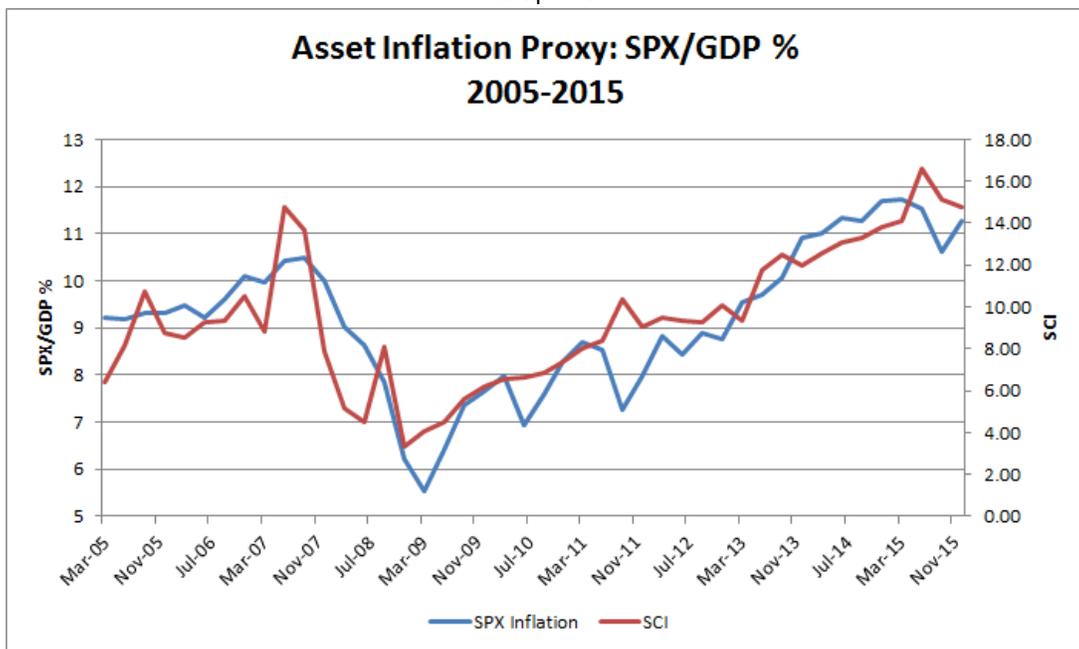
These graphs should whet your appetite to read this document. They display relationships that no one has thought of before, which will change the way you think about Economics, Finance and Asset Valuation. The terms will be defined later in this document; however, prepare to be surprised.

Graph 1a



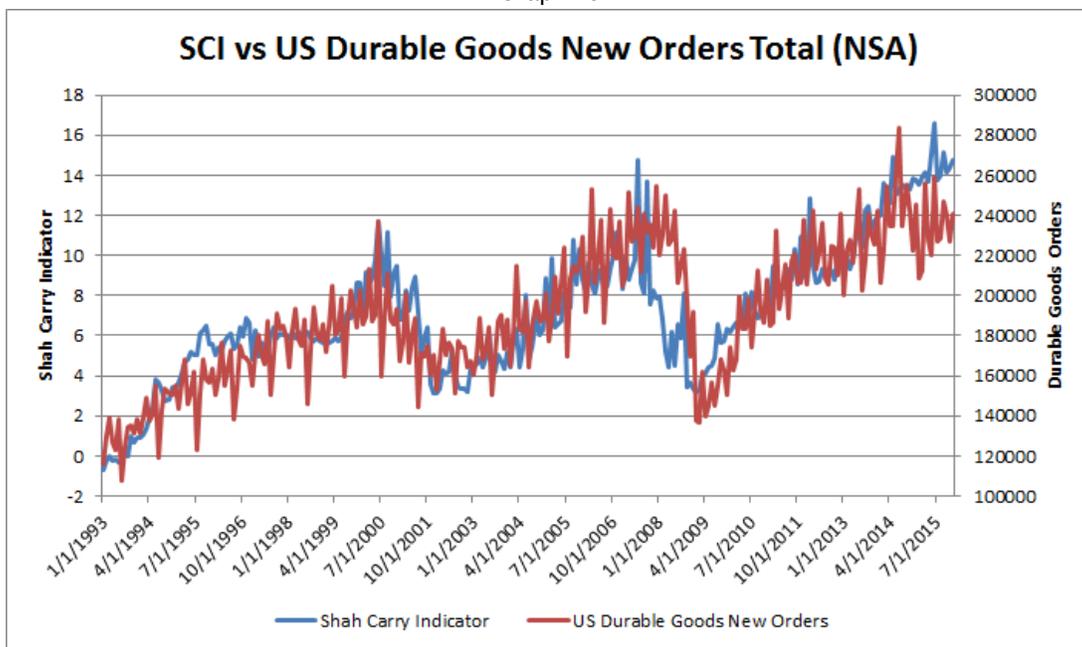
Source: MBS Mantra, LLC, Bloomberg, Federal Reserve Bank, Bank of Japan

Graph 1b



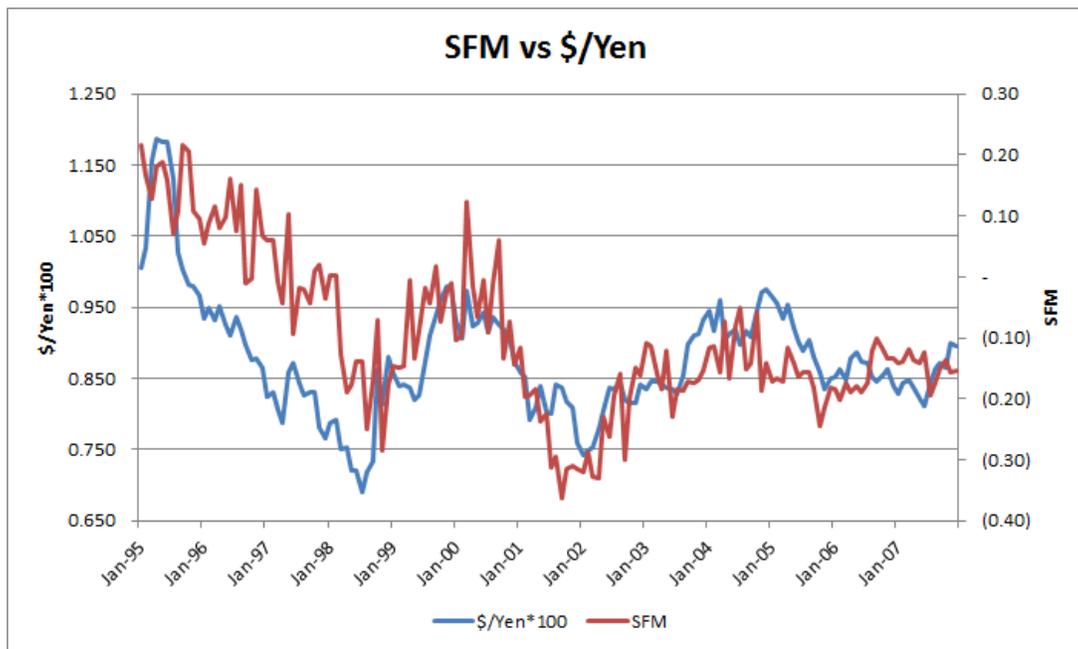
Source: MBS Mantra, LLC, Bloomberg, Federal Reserve Bank, Bank of Japan

Graph 1c



Source: MBS Mantra, LLC, Bloomberg, Federal Reserve Bank, Bank of Japan

Graph 1d



Source: MBS Mantra, LLC, Bloomberg, Federal Reserve Bank, Bank of Japan

Summary and Conclusions

The scope of this analysis is vast, and it covers many topics that are linked.

* At its heart, this is an analysis and discussion of how Macro Economics and Money Supply works in today's world, and it has significant policy implications. It will challenge what you think you know about US and Global Economic History and how Markets work. You will need an open mind to understand the linkages and conclusions.

* I prove that the current practitioners of Macro Economics - Central Banks - have their theory backwards. Macro Economics changed in 1999, and responses to policy have inverted since then.

* I believe that I have proven the hypothesis that [I postulated in 2009](#):

The Shah Theorem: "When One Economy Enters a Liquidity Trap, All Monetary Policy Fails Globally"

* I also connect Macro and Micro Economics through this analysis, at least for the special case of a Liquidity Trapped Economy.

Money Supply and The Failure of Macro Economics

I analyze the Japanese and US Economies. The relationships that follow work well since the links between these two economies are almost completely market based, with almost no regulatory friction between them. Capital flows and currency prices between these countries have no impediments, and demonstrate, with surprising precision, micro- and macro-economics at work.

My analysis shows that:

* Under present Economic conditions, cutting policy interest rates reduces money supply and exacerbates recessions, resulting in stagflation and deflation. This has been the case for Japan for 23 years.

* This is the result of a global market for capital. Under such a market design, local interest rate policies cannot be expected to work, and they do not.

*** The Carry Trade connects micro- and macro-economics: decisions by individuals to maximize their returns by seeking higher returns elsewhere drive capital overseas, altering money supply in both economies.**

*** Under Liquidity Trap conditions, Interest Rate Policy and Management fails in the Trapped Economy, and has the opposite outcome from the one desired by policy makers. Rate Cuts reduce Money Supply due to the Export of Capital and Savings, as investors seek higher returns in other economies. They also export the maximum amount of capital that they can. A significant proportion of extra Money Supply that is created from Quantitative Easing and other Non-Conventional Policy Measures is also exported.**

*** Money Supply and Velocity in a Recipient Economy increases through receipt of capital from the countries that are in Liquidity Traps. Monetary Policy also fails in Economies that are recipients of Carry. They cannot control their money supply, and are subject to Asset Inflation from the import of capital. This is usually seen in Housing and Stock Market Prices. Rising asset prices increase debt issuance and leverage, further accelerating asset price growth. Economies become leveraged through debt issuance.**

*** If a Non-Trapped economy is already in a recession in spite of the receipt of Carry Money Supply, traditional policy measures such as cutting rates will have adverse impacts, as money supply will decline even more due to retraction of Carry, and this will eventually lead to it being Trapped too, in turn exporting its capital to other countries. This can lead to a global negative spiral of Trapped Economies.**

*** In other words, Monetary Policy fails in both Trapped Economies as well as Receiving Economies, and with time, All Economies.**

*** Money Supply Management though Policy Interest Rate changes no longer works, and has the opposite-to-desired result as it fuels Carry Trades. Central Banking Theory has been Inverted as a result of Japan entering its Liquidity Trap. Standard Monetary Policy is now impotent.**

*** Under Liquidity Trap conditions, the only way to increase Money Supply is through Quantitative Easing and increasing the size of Central Bank Balance sheets. This is highly inefficient as much of this will get exported, however, there is a chance some of the money supply thus created might remain resident.**

The Pricing of Assets

*** While it is widely accepted that asset prices are influenced by money supply, what has changed since 1994 is that it is money supply and carry from global sources that determines asset prices, not just local money supply. Asset Pricing in an Economy is determined by the Total Supply of Carry available.**

*** I define the Shah Carry Indicator that captures Global Carry for an economy, and that explains the prices of many asset classes over long periods of time.**

*** Traditional valuation metrics of assets, such as expected returns, or discounted cashflows, are not necessary to explain asset prices and price movements.**

Changes to Economic History - the US response to Policy Rates.

I analyze multiple periods between 1985 and 2015, and test the effectiveness of US Monetary Policy in each period. I confirm that, after 1999, when Japan entered into a Liquidity Trap, US Monetary Policy ceased to be effective, and instead had the opposite-to-desired effect on the US Economy.

The conventionally accepted US Economic history since 1999 is incorrect, as it does not take into account all the factors that impacted the US at the time. I correct this by completing the analysis of these periods. I also identify the parties responsible for the Great Financial Crisis.

The Present and Future

This analysis gives you the framework to analyze any period for any economy, and allows you to understand the economic impact of policy decisions. I have focused on developing the framework, and providing enough evidence to prove its validity, in the hope that this analysis can reach professional economists and Central Banks.

I will only briefly discuss some of the current themes and concerns in the market. These might get developed more fully in subsequent papers. After all, this document is already long enough.

Genesis of this Analysis

I have been formulating this analysis of Carry Trades and Assets since 2006, when I first researched Carry Trades to understand the Icelandic economy. The magnitude of the Carry Trade emphasizes its impact on markets and its importance to Macro Economics, which heretofore has not been appreciated. That the Carry Trade has inverted the practice of Macro Economics is not understood by most practitioners.

Many parts of this discussion are derived from my prior Crisis Notes (see the [Archives](#)) - I discuss the Carry Trade in almost every Crisis Note. The analytical framework that I have used since 1988 - that Hedging and Funding Costs and Flows determine Asset Valuation - has led me to research the supply of capital and the resulting impact on the prices of assets that are described herein. This is a very general framework that can be applied to any economy that is the recipient of Carry capital flows from a Funding Country or countries. I have been making the argument for many years that the US is the world's largest recipient of Carry Funding, primarily from Japan, and that the Global Financial Crisis was primarily a Carry Deleveraging event.

In this analysis I am consolidating and augmenting my thoughts, and am attempting a comprehensive, and hopefully definitive, analysis of Carry Trades and Macro Economics: how and why Carry is now the primary determinant of Asset Prices, Money Supply and Asset Inflation, and how it squeezes out the real economy in the process, and renders Monetary Policy impotent.

There are 3 major sections:

1. [Carry Trades](#) - describes the various sources of Carry (from the US perspective)
2. [The Pricing of Assets](#) - graphs showing the responsiveness of various US assets to Carry
3. [The Failure of Macro Economics](#) - I use Carry to understand Money Supply, and how it redefines Economics. I also analyze different periods in US Economic history to see how Macro Economic policy has performed in each period. **I define new tools and indicators to understand flows, currency movements and economic activity.**

The analysis and conclusions that follow are purely my opinion, based on data I have collected and inferences I have made. I have not had access to Central Bankers, policy makers, or officers of banks, to really know how and what decisions they were making. I have also been scouring the internet for knowledge on the subjects discussed, but the available information is sparse. It is quite possible that others have reached these conclusions before me, and might have also published on this topic, but I have not discovered any such sources.

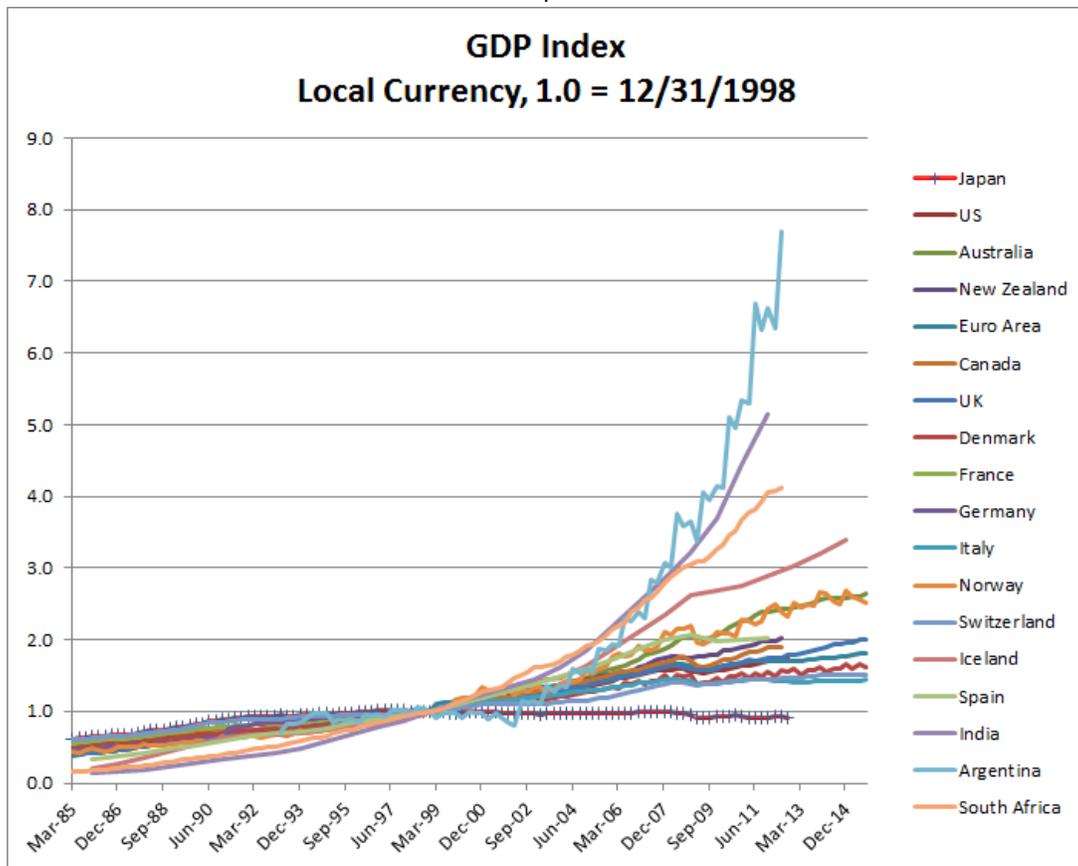
Section 1: Carry Trades

“Carry Trade” is the term given to borrowing money in a low yielding currency (i.e. country), and investing the proceeds in the currency and assets of a higher yielding country, thereby earning a net spread, or carry.

Carry trades should never exist, as the economic concept of [“Interest Rate Parity”](#) should prevent any arbitrages from occurring. **However, they do exist and are the most powerful force in Finance and Economics, as they thwart attempts by Central Banks to conduct monetary policy. The world as we know it today (since the**

early 1990s) has been sculpted by Carry Trades, and almost all asset prices are a result of asset inflation (and deflation) from deployment (and withdrawal) of Carry Leverage.

Graph 2



Sources: IMF, Bloomberg, MBS Mantra, LLC

The graph above outrages me. The Carry Trade has resulted in a massive transfer of wealth and inflation from Japan to the rest of the world. This massive imbalance is now the primary source of risk in the world. The resulting Asset Inflation is also the cause of Income Inequality.

I do not understand why Economists have not modified their theories and macro economic policies to incorporate Carry Trades. My assumption is that, since carry trades should not exist due to no-arbitrage assumptions, economists think that they can be ignored, and thus continue to use their single-economy Keynesian models to manage policy. This is surprising, given the number of practicing economists that join or start Macro hedge funds that implement the carry trade.

In addition, I have even found [discussion papers written for the Bank of Japan \("BOJ"\)](#), and also presented in the US, as recently as 2007, describing the Carry Trade, the export of capital, the funding of Hedge Funds in the US, and the ballooning of Credit in the US. Apparently they have been ignored.

In one of my incomplete [2009 Crisis Notes](#), I identified 'The Shah Theorem' (although it should be called a Hypothesis for now) that has created the Graph shown above:

When One Economy Enters a Liquidity Trap, All Monetary Policy Fails Globally

The primary result of Central Bank Keynesian stimulus policies, as exploited by Carry Trades, is to export capital, preventing desired monetary expansion and desired inflation in the funding country, and instead creating excessive money supply and asset Inflation in capital-reipient countries, effectively exporting inflation. (I proposed a solution to this in one of my old Crisis Notes, but since it is unlikely to happen, I'll save re-discussing it for later.)

In my analysis, and in the "Shah Carry Indicator" that I have created, I define the term "Carry" more broadly than

defined above. In my usage, "**Carry**" is defined as all sources of Money Supply that are NOT a result of conventional monetary policy. It includes money supply imported from Carry Trade deployment, but also incorporates forms of non-conventional financial policy that can increase money supply, such as Quantitative Easing, and foreign purchases of Sovereign bonds, and will include more radical forms of money creation that might come in the future, such as direct injections into bank accounts.

In crime solving, they say, "Follow the Money". This also applies to understanding financial markets. **Without an understanding of the Carry Trade, investors cannot have an understanding of financial markets and risks, and functions such as Risk Management cannot be performed.**

The Yen Carry Trade

The original modern Carry Trade was the Yen Carry trade, made famous and deployed to great effect in 1994 by Julian Robertson of Tiger Management ("Tiger"). It is quite likely that George Soros of Quantum, LTCM, other hedge funds, as well as Wall Street prop desks, were also using this strategy – as many lost money at the same time – but there is very little information available publicly about their specific activities.

The history of the Yen Carry Trade begins in the late 1980s, when, due to unconstrained money creation, Japanese asset prices appreciated greatly, and were part of a "bubble" economy. Subsequent deregulation of the banking system globally, and Samurai bond issuance rules in Japan (which I discuss in the [Samurai bond Crisis Note](#)) also played pivotal roles.

In 1989, The BOJ tightened monetary policy and raised its policy rate, continuing into 1990. In 1990, the bubble burst, and the Nikkei went from 38,915 to a low of 20,221 in 9 months. In 1991 and 1992, asset prices collapsed, resulting in large quantities of Non-Performing Loans ("NPLs") at Japanese Banks, with numerous bank bankruptcies in 1995.

https://en.wikipedia.org/wiki/Japanese_asset_price_bubble

In a textbook Keynesian response to a financial crisis, the BOJ started cutting rates again, to allow banks to earn their way out of the crisis, and resulting in the creation of many 'zombie banks'.

Japan's policy rate crossed the US policy rate at 3% in October 1993, setting the stage for the Yen Carry Trade.

When, in [March 1994, the US began to RAISE rates](#), following a recovery from the 1991 US recession, the Yen Carry trade started in earnest.

This resulted in a weakening of the Yen, an increase in borrowings from the BOJ by Japanese branches of Foreign banks, and a jump in issuance of both non-Yen denominated debt in Japan, as well as Yen denominated debt by Foreign Issuers (Samurai and Euroyen) bond issuance. In addition Japanese retail investors started purchasing foreign currencies, foreign bonds, and trust vehicles denominated in foreign currencies, resulting in a massive export of capital and money supply out of Japan that has not been stemmed since.

The Yen Carry trade has not stopped funding the world's productivity (or excesses) since then. In addition, we have also enjoyed periodic episodes of Dollar Carry Trade, and more recently to a minor extent, Euro Carry Trade, as both the Fed and ECB have effectively cut rates to zero. There are other countries with zero or negative interest rates, but their capital exports are not very scalable, so I won't discuss them at this time.

All three major central banks have also embarked on [Quantitative Easing](#) to further increase money supply, in response to entering [Liquidity Traps](#), providing more fuel for carry trades.

Due to the high leverage involved in Carry Trades, periodic periods of nervousness have led to the withdrawal of Carry Financing, leading to massive selloffs in Global markets: Leveraged Asset Growth comes hand in hand with Leveraged Downside.

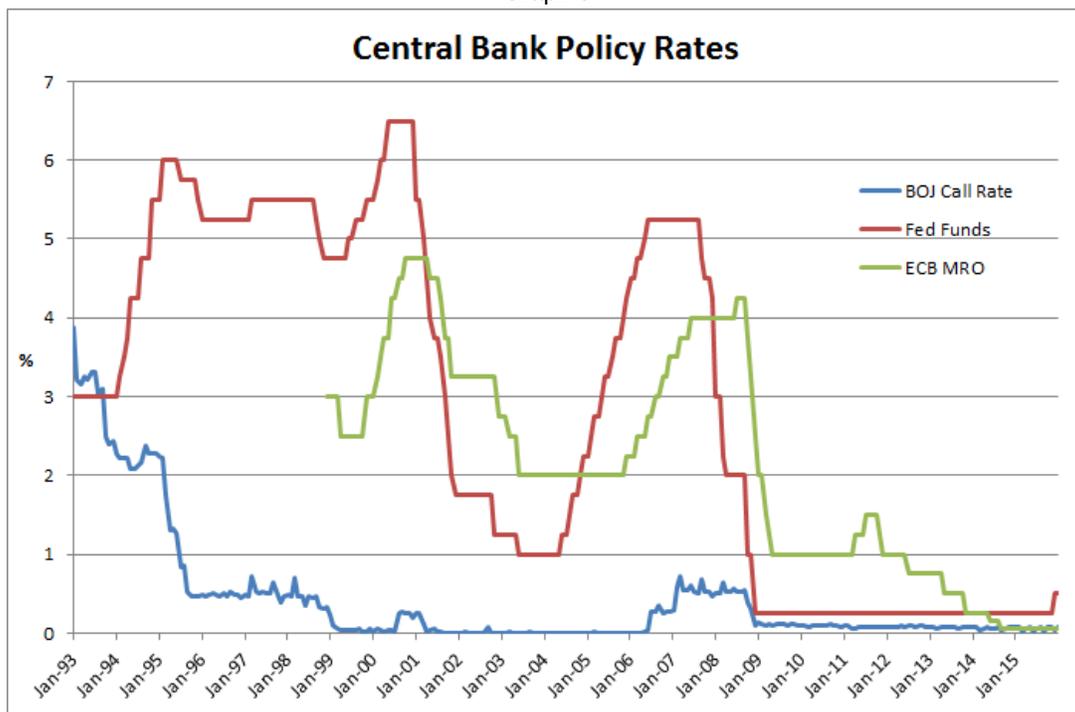
Most periods of apparent de-correlation between Yen and various assets can be explained by changes in US

Central Bank policy changes.

In addition, please keep this in mind: the Yen Carry trade, in the pre-Thai/Russia/Tiger/LTCM period, was not well known, in either Japan or the rest of the world. After Tiger made the news, the subsequent correlations of Yen Carry with financial assets increased, and Yen Carry got more efficient, including in Japan. This becomes relevant as one looks at pre-2000 data for Japan in subsequent sections of this study.

The following chart shows the policy rates of the Bank of Japan (Unsecured Overnight Call Rate), The Federal Reserve Bank ([Fed Funds Rate](#)), and the European Central Bank (MRO – Main Refinancing Operations Rate).

Graph 3



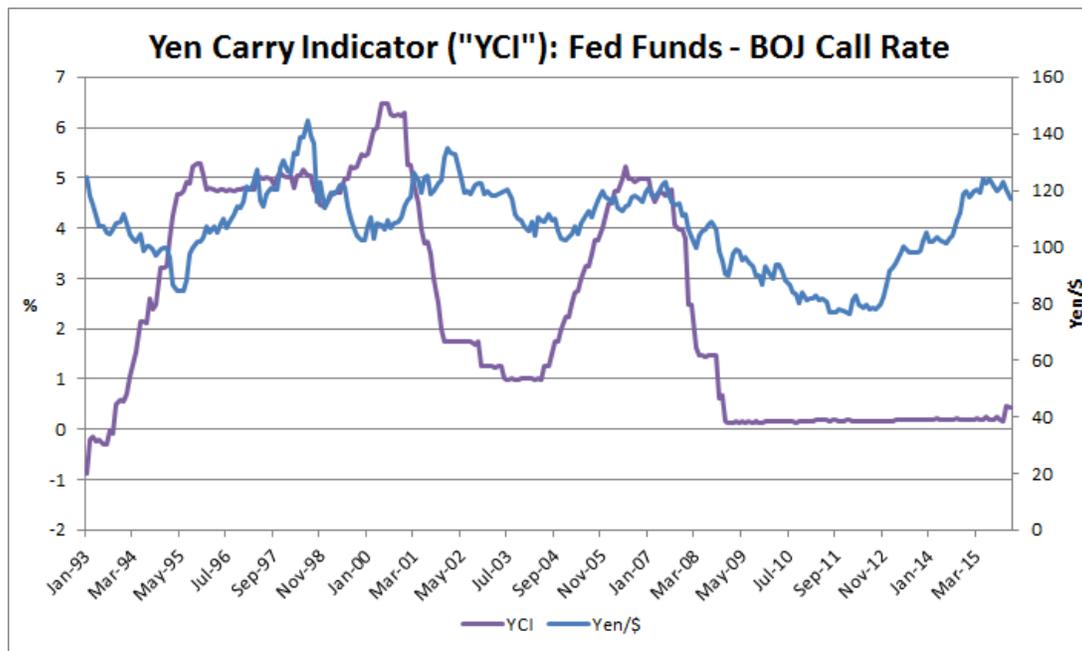
Source: Bloomberg, MBS Mantra, LLC

Note on the BOJ Call rate: I used a Bloomberg data series called 'MUTKCALM' - the actual call rate result. This only goes back to 1992. Prior to that I have used a different series - 'BOJDTR' - the call rate target, that was discontinued in 2013, when the BOJ switched to a targeted monetary base using JGB purchases - Quantitative Easing.

This analysis will focus primarily the policies and impacts of the Japanese and US central banks, and the Japanese and US economies.

I thus define a new Indicator: The **Yen Carry Indicator ("YCI")**, which is the Fed Fund Rate minus the BOJ Call Rate. I later modify this to create the Shah Carry Indicator ("SCI") in order to generalize it and incorporate other sources of Carry, such as unconventional US money creation - primarily QE. (This should really be called the "YCI-US"; the YCI for other countries will be the difference between their policy rates and Japan's).

Graph 4



Source: Bloomberg, MBS Mantra, LLC

Sources of Money Export from Japan

As Japanese rates declined, and economic conditions weakened, Japanese investors sought out higher returns in overseas markets. This export of capital and savings appears to have been conducted by both retail investors as well as institutions, such as insurance companies and the Postal Pension system, and including, inadvertently, the Bank of Japan!

The Japanese retail investor has become famous, and she has been given a name by the press: "Mrs. Watanabe". **In a victory for Micro Economics, rather than succumb to low returns on her savings from a low rate regime, she sought to maximize her returns** and started trading Yen for other higher yielding currencies, as well as purchasing foreign currency denominated bonds and trust vehicles. This is discussed in previous Crisis Notes. I have not managed to fully identify and verify all the data that captures the "Watanabe flows", but they are that are usually quoted by journalists to be over \$1T.

I have identified multiple sources of Money Supply Export from Japan:

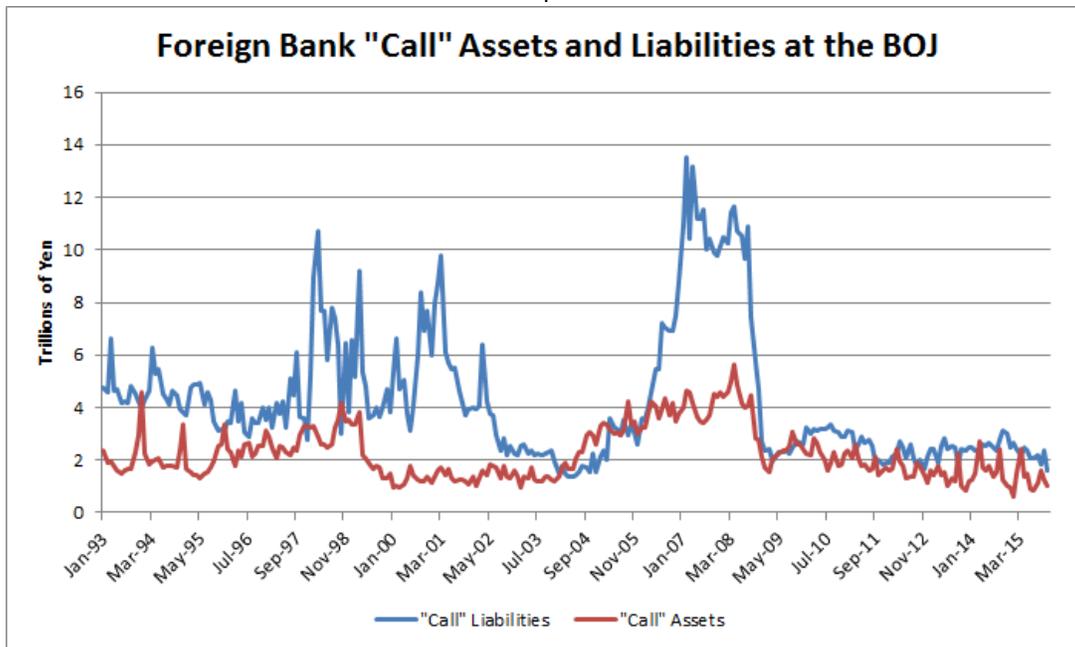
- Foreign currency purchasing, notably Aussie\$ and US\$, but almost every currency in reality
- Trust investments in foreign currencies - such as US Equity funds
- Direct borrowings from the BOJ by Japanese branches of foreign banks, presumably transferred overseas through interbranch accounts
- Direct borrowings from the BOJ by Japanese banks, some of which funded lending overseas by their overseas branches
- Japanese market issues of bonds by Japanese corporations denominated in foreign currencies
- "Uridashi" bonds" - sales in Japan of foreign currency bonds issued outside of Japan
- "Samurai bonds" - issuances in Japan of Yen denominated bond by foreign issuers
- International Bonds issued in Yen
- Issuance of foreign currency or Dual Currency denominated bonds, sold in Japan, by Japanese corporations, and other issuers
- BOJ holdings of US Treasuries - QE operations - that in effect export capital to the US.

I have collected the following data about some of these outflows of capital from a variety of sources.

Borrowing by Foreign Banks from the BOJ

The Bank of Japan Uncollateralized Overnight Call Rate ("Call") is an overnight rate, similar to the US Fed Funds Rate, at which banks can borrow from the BOJ, or lend to the BOJ. Using the BOJ Flow of Fund ("FOF") terminology, "Assets" are money lent to the BOJ, "Liabilities" are money borrowed from the BOJ. I have to thank [this](#) recently found BOJ paper for identifying this data - I had been looking for it for years! This data does not break out US Banks, so it is not as direct as one would like. (I discovered this data on 2/2/2016, after I had created the SCI and written most of this document - it is not directly incorporated into SCI, although it is implied by the YCI.)

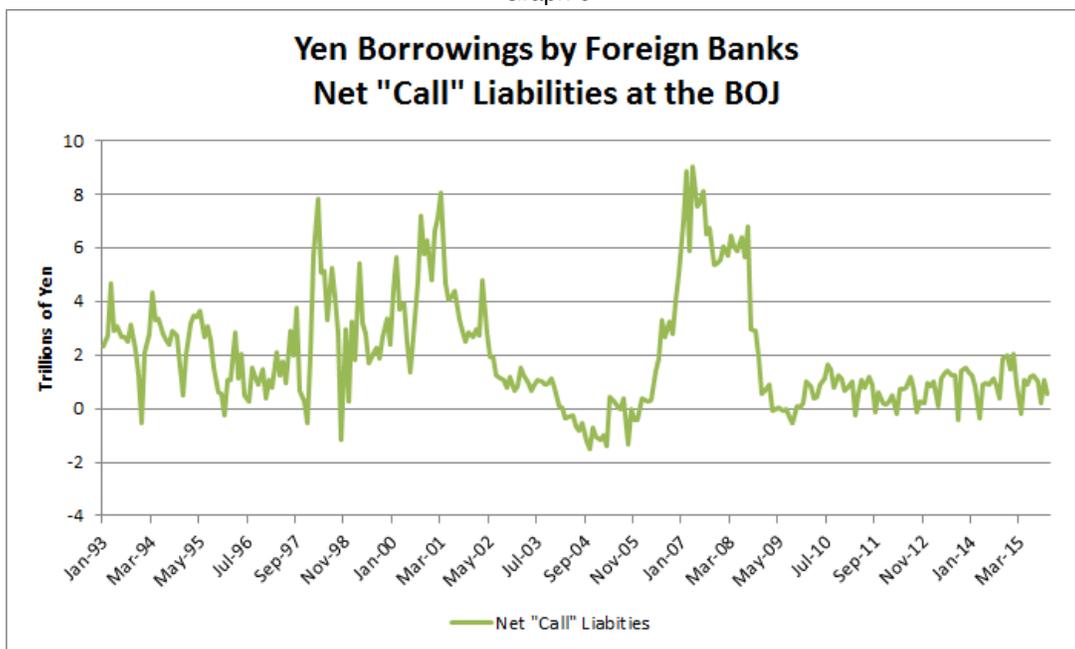
Graph 5



Source: Bank of Japan, MBS Mantra, LLC

Net "Call" Liabilities are an indication of Capital Export to the parent Foreign bank via Interbank accounts. Unfortunately, this does not capture lending by US branches of Japanese banks.

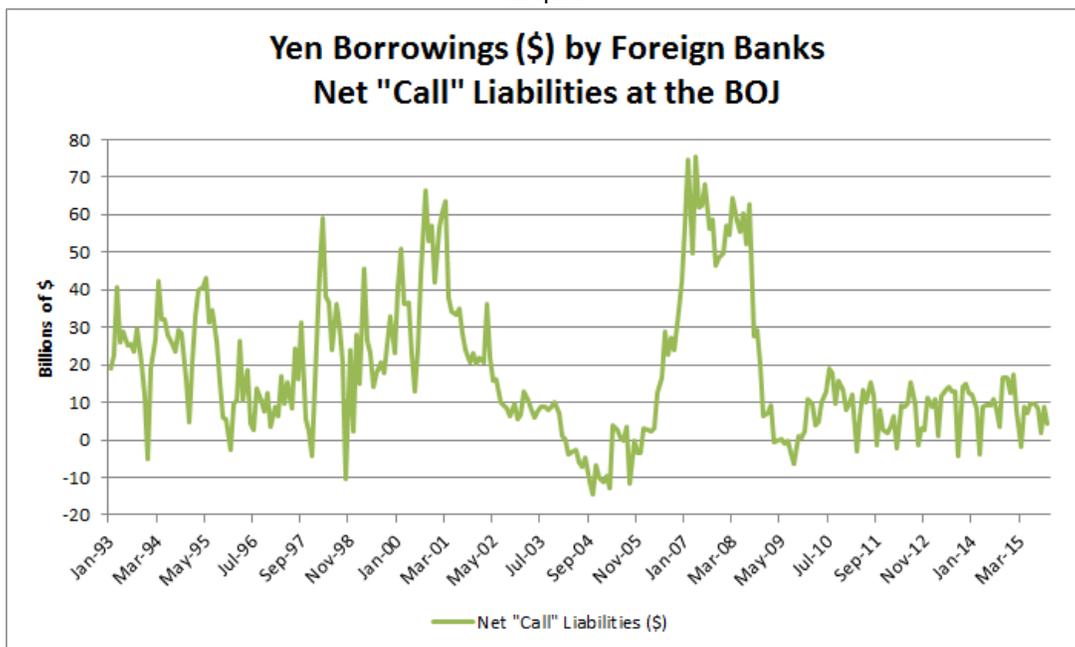
Graph 6



Source: Bank of Japan, MBS Mantra, LLC

This becomes more interesting when converted to US Dollars. Do you see the build up to the Financial Crisis, and the resulting deleveraging? This graph was the Canary in the Coalmine.

Graph 7

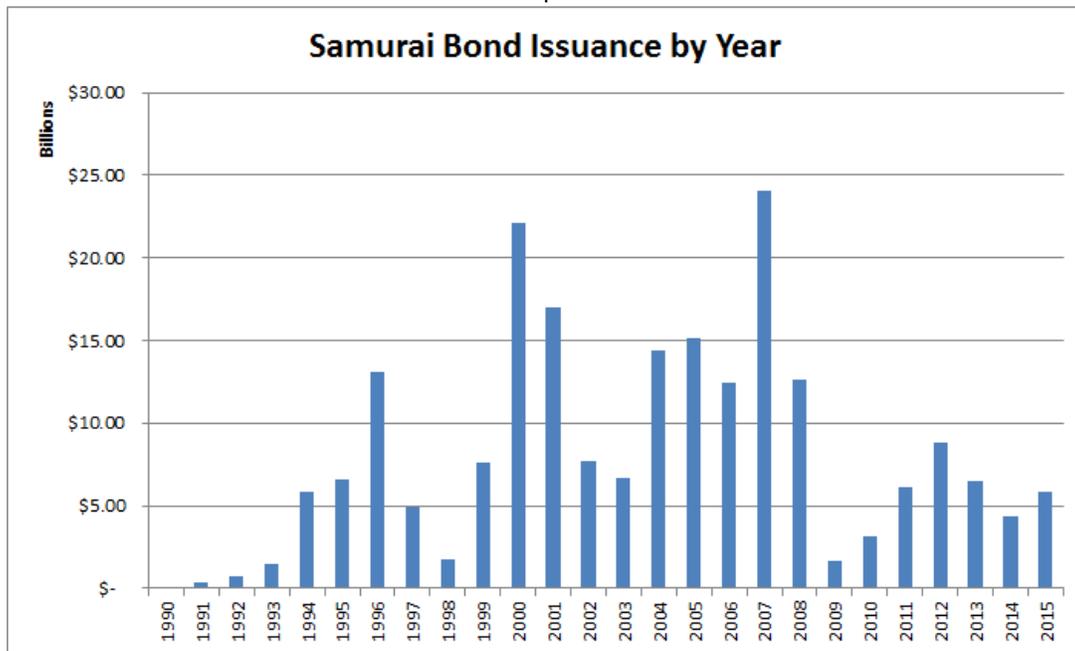


Source: Bank of Japan, MBS Mantra, LLC

Samurai Bonds

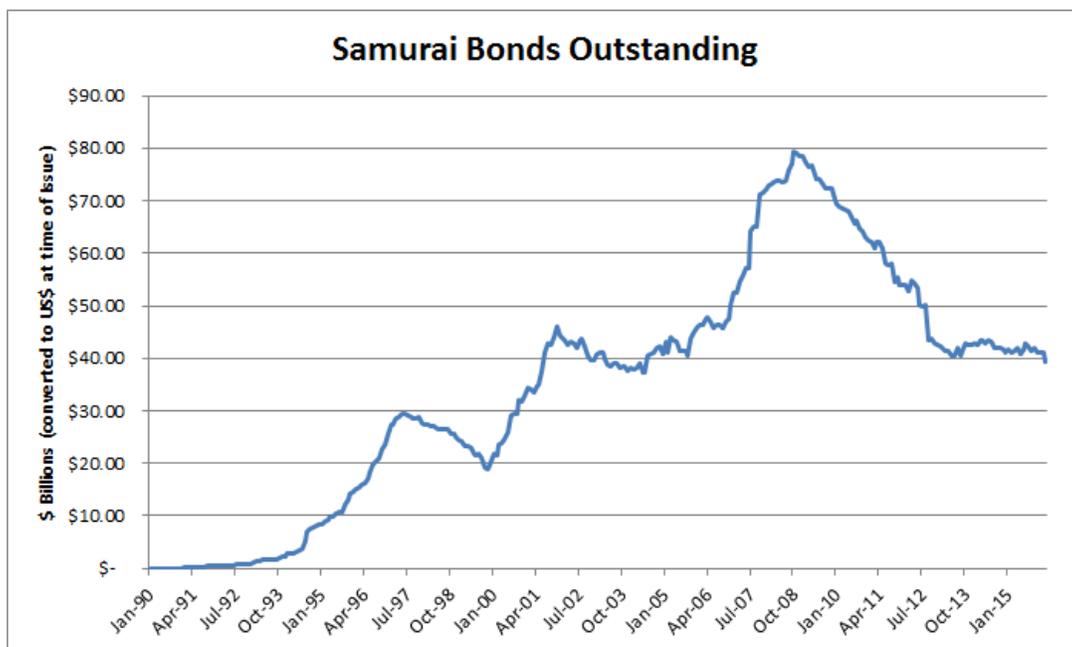
Samurai bonds refer to debt instruments sold in Japan by foreign issuers, and are denominated in Yen. Typically, they are issued by US corporations, but they are also issued by Japanese institutions that might have operations in the US, such as Banks, and financing arms of Automobile Manufacturers. Sovereign nations also sometimes issue Samurai bonds.

Graph 8



Source: Bloomberg, MBS Mantra, LLC

Graph 9



Source: Bloomberg, MBS Mantra, LLC

The [Samurai Bond Market](#) document under Commentary gives extensive details about this market. I was alerted to the Samurai bond market when Lehman failed in 2008.

Over \$210 Billion of Samurai bonds have been issued since 1990 (converted to USD at the time of issue).

Since the majority of the issuers were US financials, many of their bond liabilities could count as capital, allowing these issues to greatly increase bank balance sheets, thus flowing through into US money supply in a leveraged manner, through margin and commercial lending.

Prior to October 1993, Samurai issuance was sporadic. However, starting in October 1993, Samurai issuance increased dramatically, with \$471mm being issued in that month. From January 1994 to January 2002, there was no month without Samurai issuance, with many months with greater than \$1.5bb being issued. Supply in this first wave from 1994 to 1997 peaked in 1996, as word of this strategy spread to more participants, I presume. Issuance slowed as the Asian financial crisis was triggered in 1997. When the Fed cut rates in late 1998, after LTCM and the Russian Crisis, Samurai issuance slowed drastically. Large scale Samurai issuance resumed in 1999 after the Fed raised rates, while the BOJ cut rates once more to 0.1% , and also embarked on Quantitative Easing ("QE"), which I describe below. This persisted till 2007!

The euroyen market is also another source of borrowing for issuers, but starting in the 1990s, the samurai market began dominating the euroyen market.

In addition, a Hedge Fund's prime broker could easily borrow in Yen from Japanese banks or Japanese branches of US Banks, as Japanese money supply had expanded while Japanese C&I lending had not, resulting in excess non-earning deposits. I have not yet figured out how to fully identify and measure the size of this more direct Yen Carry funding.

Uridashi Bonds

I might write a separate article on this, similar to the Samurai Bond Market article, since I have the data for this market. For now, here is a summary.

Information on this market is sparse, and I only learned of the term and the existence of this market less than two weeks ago, in February 2016. Here are some articles I have found on the internet.

https://en.wikipedia.org/wiki/Uridashi_bonds

<http://www.financialsense.com/contributors/john-needham/uridashi-the-bubble-buster>

<http://www.bloomberg.com/bw/articles/2013-01-24/japans-bond-investors-like-to-buy-foreign>

From wikipedia:

An Uridashi bond is a secondary offering of bonds outside Japan. They can be denominated in Yen or issued in a foreign currency. These bonds are sold to Japanese household investors. An Uridashi bond is normally issued in high-yielding currencies such as New Zealand Dollars or Australian Dollars in order to give the investor a higher return than the historically low domestic interest rate in Japan.

During the 2008 financial crisis the carry trade and foreign currency bonds in general came under criticism in Japan for contributing to the crisis.

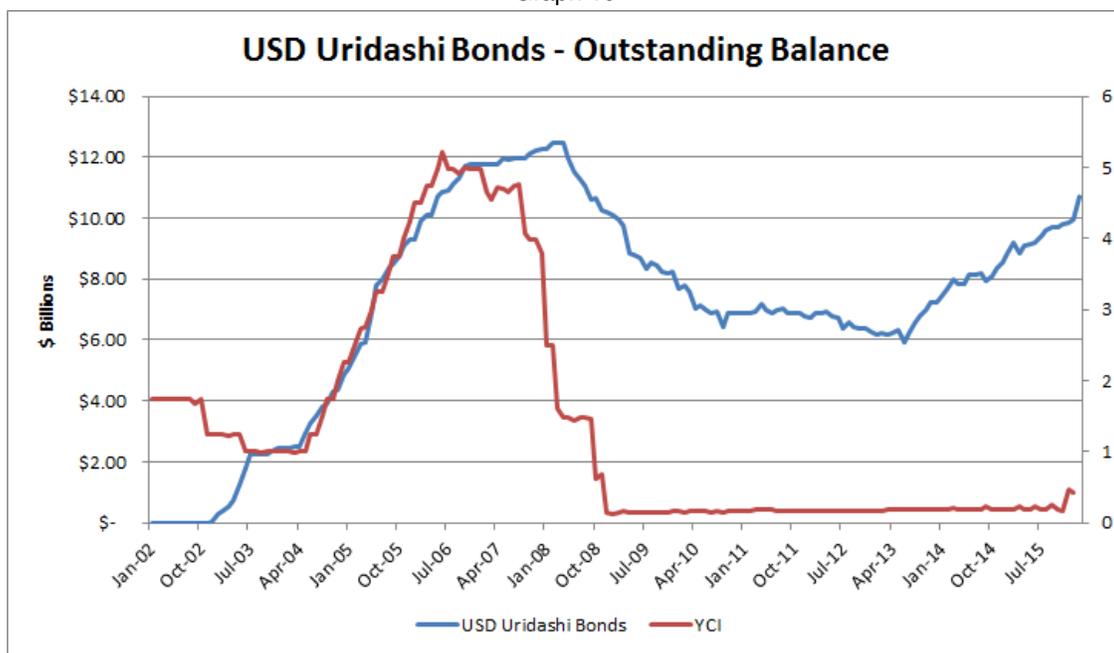
On the 1st of November, 2015 the size of the Uridashi Bond Market was USD 33.2bn equivalent in 15 different currencies.

These bonds have been creating housing and stock market inflation in New Zealand and Australia, and apparently the NZ Central Bank has been complaining about them to Japan, to no avail.

This graph shows the balance of Uridashi bonds denominated in USD (excluding dual currency USD bonds). About one-third of all Uridashi bonds currently are in USD. The average maturity is 5.2 yrs, with the minimum maturity of 1 yr, and max of 30 yrs.

The responsiveness of Uridashi issuance to the incentive from the rate differential measured by the YCI is almost perfect! This is microeconomics in action!

Graph 10



Source: Bloomberg, MBS Mantra, LLC

To me, it appears that this issuance was a direct result of Japan's QE (details in next section) - as the BOJ bought JGBs for its balance sheet, Japanese investors must have reinvested into higher yielding US denominated bonds, instead of spending the money in the local economy.

This link gives more details on the current status of the Uridashi market.

<http://mindonthemarkets.com/2015/07/06/uridashi-issuance-in-2015-h1-update/>

Quantitative Easing (QE) and Central Bank Balance Sheets

Quantitative Easing is considered an 'unconventional' monetary policy, and is used to increase money supply when conventional tools have become ineffective (i.e. rates are at zero), in other words when an Economy is in a Liquidity Trap.

Wikipedia has a good definition for QE, so I will use it:

***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.*

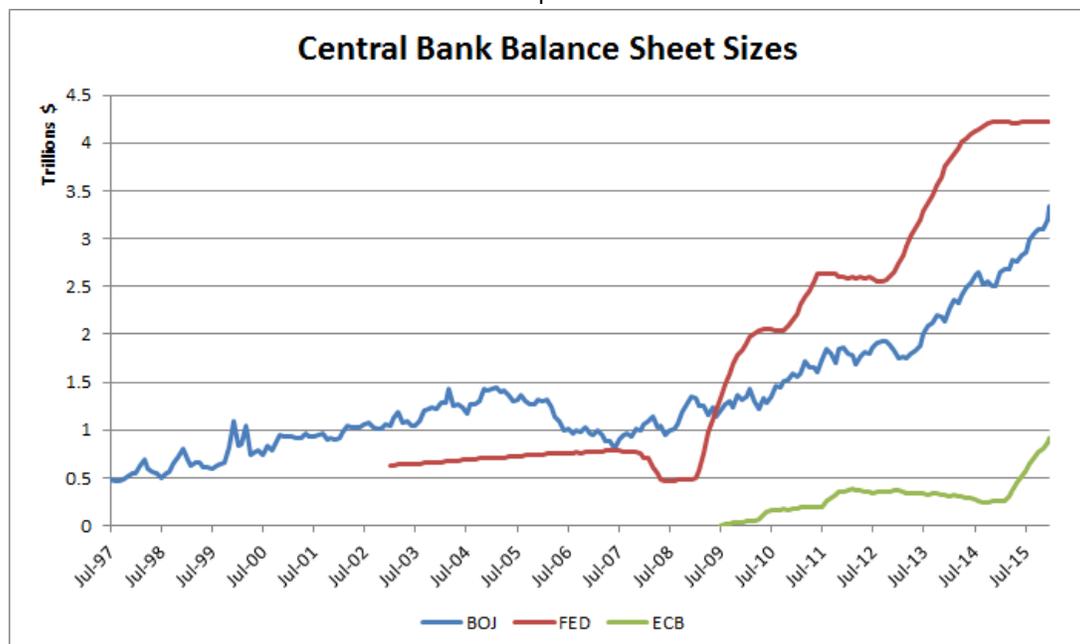
All three major central banks have resorted to QE, at different points in time, after entering Liquidity Traps. The extent of QE that they have implemented can be measured by the size of their (ballooning) balance sheets. The following chart shows the magnitude of their balance sheets (in USD). Combined, they currently total \$8.5T, of which approximately \$7.5T is as a result of QE.

Japan was the first country to enter a Liquidity Trap, 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. While these investments were meant to deploy its Balance of Payments Surplus, **the BOJ inadvertently supplied QE to the US, increasing US money supply.** This was fortituous, as the YCI had declined during this period due to the Fed cutting rates - this QE from the BOJ, more than made up for the decline in Samurai, Net Call, and other forms of Japanese Carry.

I believe this to have been an important factor in the 2003 recovery in the US, resulting in a long rates rally, and playing a part in 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.

Without the contribution of this QE in the 2001-2004 period, the YCI projected a lower SPX index and thus lower GDP. The SCI incorporates this Japanese QE, and as a result tracks the SPX! This is discussed in detail later.

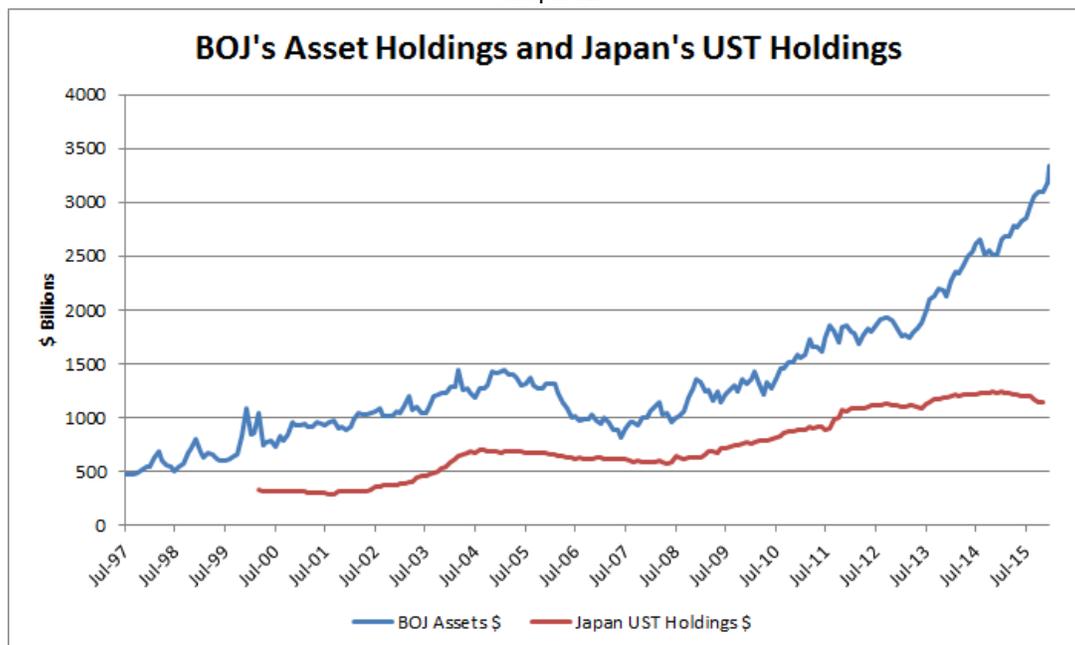
Graph 11



Source: Bloomberg, MBS Mantra, LLC

For those interested, the Bloomberg indices were SOMHTOTL, EBSSECM, and BJACTOTL, in USD

Graph 12



Source: US Treasury, Bank of Japan (BOJ), Bloomberg, MBS Mantra, LLC

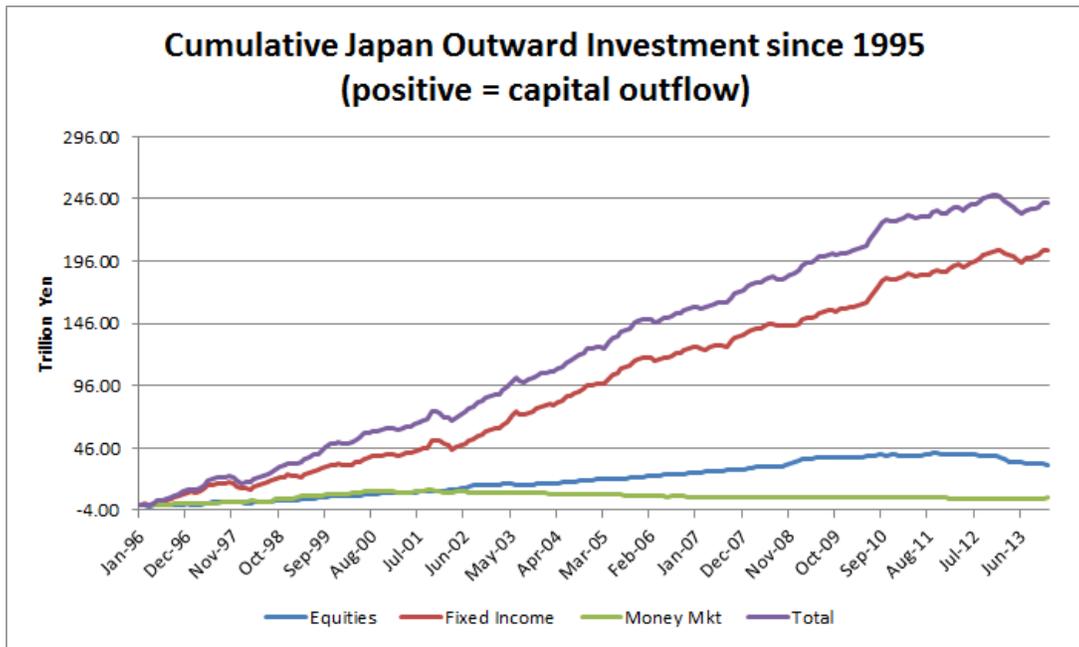
When US QE was implemented, I had discussed my opinion as to why QE cannot work to recover asset prices, in the section called 'Bonds are not Assets' in the 2009 Crisis Note '[Excess Assets, Keynes, etc](#)'. However, I missed that QE can directly increase the money supply by the amount of bonds purchased. The risk to QE is that much of the money supply created will get exported overseas, which also happened in the US in 2008 (and was discussed in [another Crisis Note](#)). What has surprised me has been the amount of QE the Fed has implemented - its Balance Sheet has increased by \$4T!

While the ECB's activities have not been very relevant to US asset pricing to date, Mr. Draghi's recent comments to 'do what it takes' might change the ECB's contribution to Carry Trades and US asset pricing. ECB data is being shown for that reason, although it has not been incorporated into the Shah Carry Indicator as yet.

Outward Investment Flows

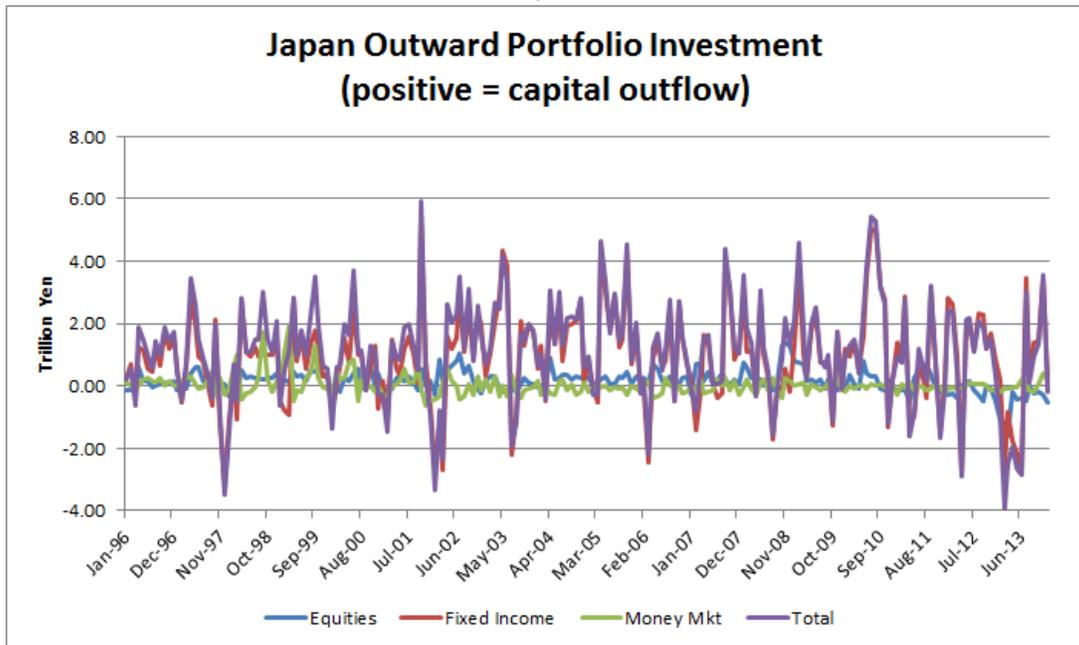
The following data from the MOF gives a lot of interesting information about the quantity of capital outflows by Japan, its recipients, and some indications of the investors involved - there are a lot more types than the ones discussed above! Also, the data confirms that the US has been the primary recipient of Carry Flows from Japan.

Graph 13



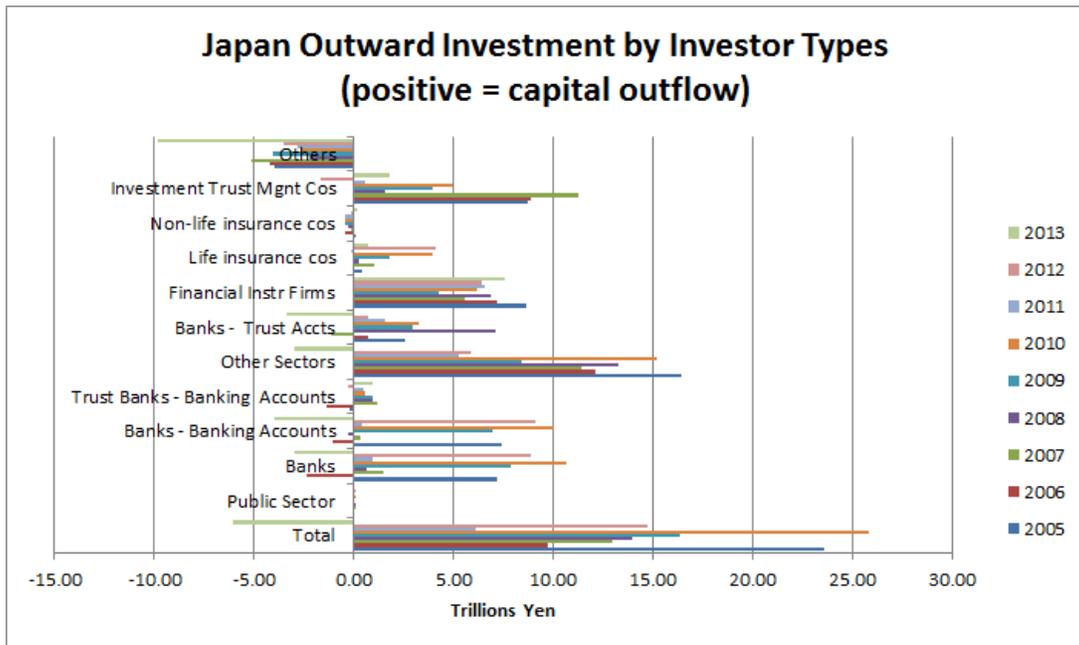
Source: Japan's Ministry of Finance (MOF), MBS Mantra, LLC

Graph 14



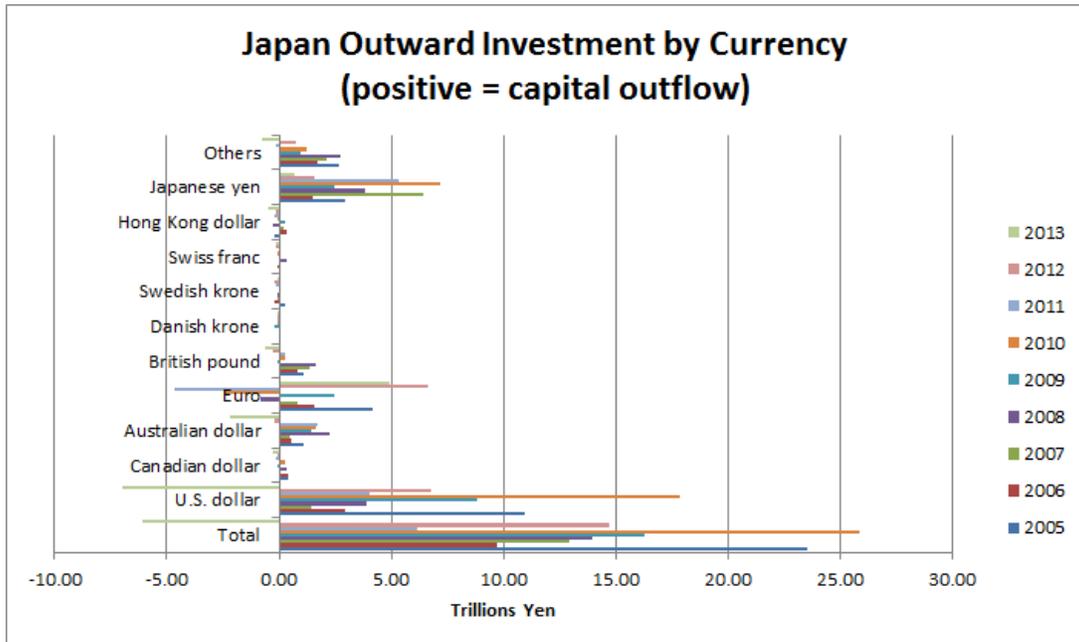
Source: Japan's Ministry of Finance (MOF), MBS Mantra, LLC

Graph 15



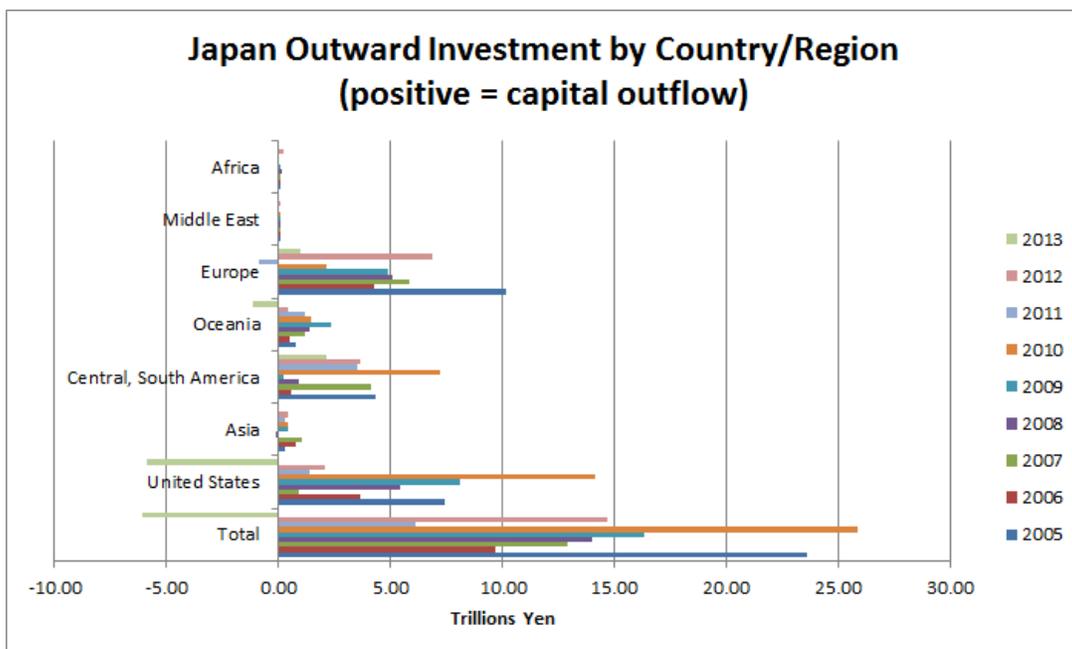
Source: Japan's Ministry of Finance (MOF), MBS Mantra, LLC

Graph 16



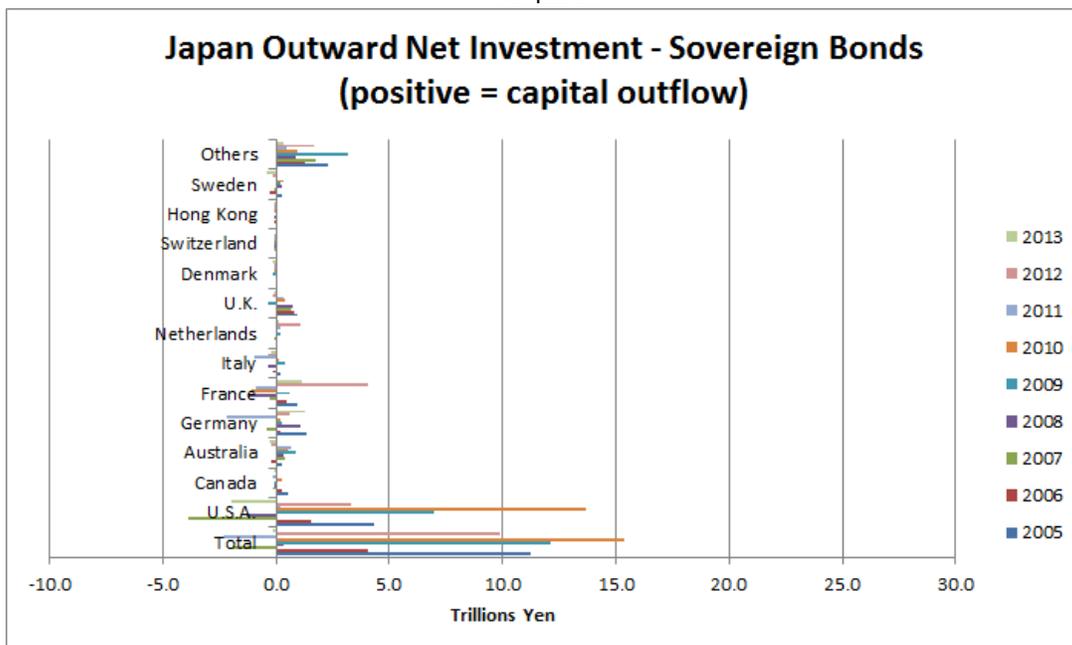
Source: Japan's Ministry of Finance (MOF), MBS Mantra, LLC

Graph 17



Source: Japan's Ministry of Finance (MOF), MBS Mantra, LLC

Graph 18



Source: Japan's Ministry of Finance (MOF), MBS Mantra, LLC

1993-1998: The Yen Carry Trade

This was the period that made the Yen Carry Trade both famous and infamous.

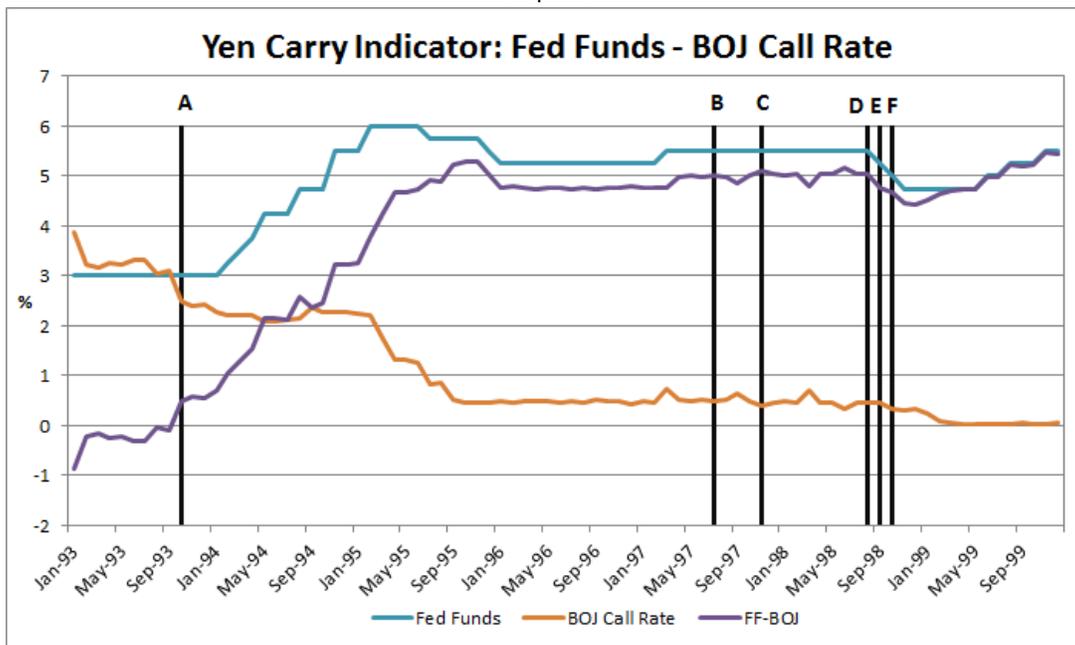
This trade is considered to be the most profitable trade in the history of hedge funds - by borrowing money in Yen at very low interest rates, and investing it in other countries, initially and sizable in the US, but soon in many other market as well, such as Russian, Thailand, New Zealand, Australia, Iceland, etc. they were able to leverage their capital many times over at close to zero financing rates.

In the US, this resulted in a jump in margin borrowing, and a change in trajectory of the S&P Index in November 1994 (a “hockey stick”), starting a rally in US markets that continues even today, with interruptions in 2000 and 2007.

A number of important trigger events occurred in this period, and are represented on the charts that follow as vertical lines with the following legends:

- A: October 1993 - Yen Policy Rate Crosses US Policy Rate, signalling the availability of Carry Trades
- B: July 1997 - Asian Crisis starts, with the failure of Thai markets
- C: November 1997 - LTCM Peaks and begins failing
- D: August 1998 - Russian Crisis Starts
- E: September 1998 - 9/23 - LTCM is bailed out; 9/28 - Fed Funds are Cut
- F: October 1998 - 10/7 to 10/8 - Tiger Management loses \$2BB in one day; \$5BB since 9/28

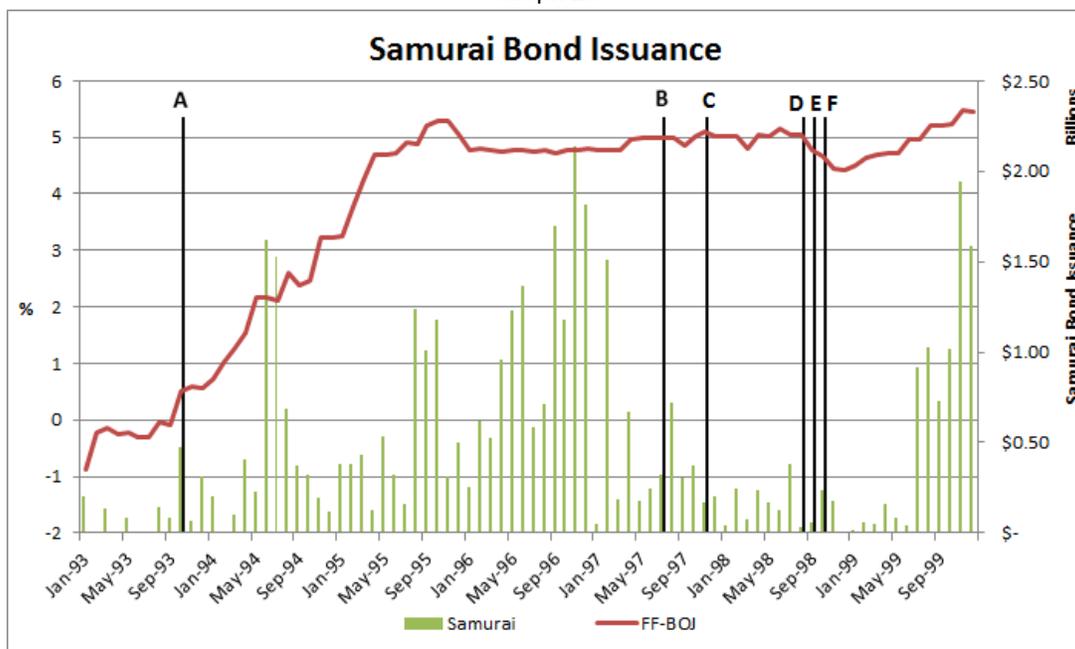
Graph 19



Source: Bloomberg, MBS Mantra, LLC

The only direct carry-related data I have found so far for this period has been from the issuance of Samurai Bonds.

Graph 20



Source: Bloomberg, MBS Mantra, LLC

Prior to October 1993, Samurai issuance was sporadic. However, starting in October 1993, Samurai issuance increased dramatically, with \$471mm being issued in that month. From January 1994 to January 2002, there was no month without Samurai issuance, with many months with greater than \$1.5bb being issued. Supply in this first wave from 1994 to 1997 peaked in 1996, as word of this strategy spread to more participants, I presume. Issuance slowed as the Asian financial crisis was triggered in 1997. When the Fed cut rates in late 1998, after LTCM and the Russian Crisis (D), Samurai issuance slowed drastically. Large scale Samurai issuance resumed in 1999 after the Fed raised rates, while the BOJ cut rates once more to 0.1% , and also embarked on Quantitative Easing (“QE”), which I describe below.

The Role of Tiger Management (and other "Macro" Funds)

It had been known that Julian Robertson of Tiger was using the Yen Carry trade, and was the largest Macro Hedge Fund at the time, 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 Tiger, has never been quantified.

Quoting from the [Paul Krugman link](#) earlier in this post,

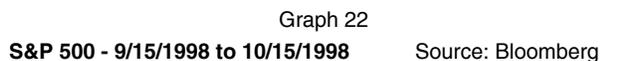
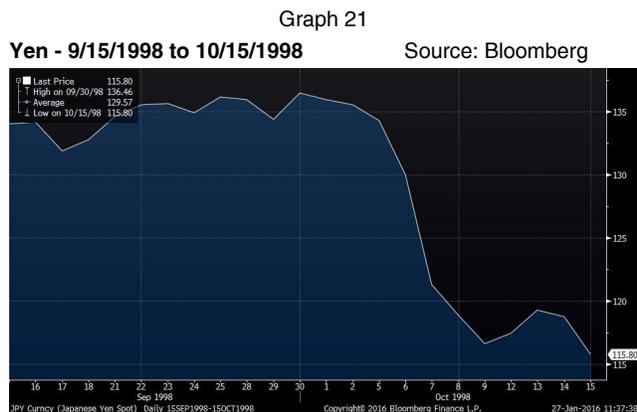
...Tiger Management, until recently the largest such fund in the world. In its heyday in the summer of 1998, Tiger had more than \$20 billion under management, considerably more than George Soros' Quantum Fund, and was reputed to be even more aggressive than Quantum in making plays against troubled economies. 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.

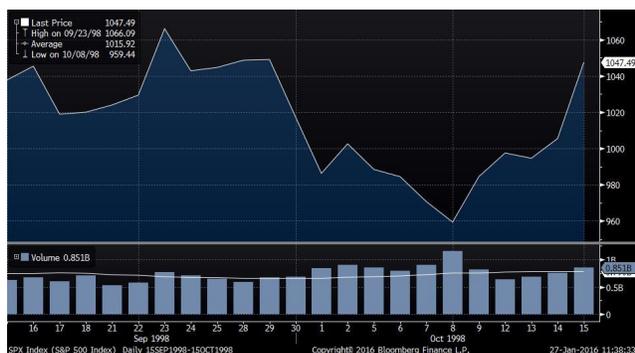
<http://money.cnn.com/1998/11/02/companies/tiger/>

From the link 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

I use this information to understand the importance of Tiger to the US stock market. Here is what happened:





From the data, we know that the single day \$2B loss probably occurred on 10/7 to 10/8, when the Yen/\$ moved from Y130.03 to Y121.3, a strengthening of Y8.73 (-6.71%), while the SPX went from 970.68 to 959.44 and lost 11.24 (-1.1%).

Looking at the 9/23/98 to 10/7/98 period, Yen/\$ went from Y135.63 to Y130.03, strengthening by Y5.6 (-4.13%), apparently losing \$2.1B for Tiger. In this period the SPX was also selling off, losing 95.41 (8.95%), from 1066.09 to 970.68.

We do not know specifically that Tiger was invested in the S&P - the SPX is a proxy for US assets.

Solving these simultaneous equations, we deduce that Tiger's position in Yen was approximately \$27.98 billion, and the position in S&P was approximately \$10.55 billion! This does not make any assumptions about leverage or changes in leverage, we are just trying to estimate the sizes of the risks involved.

S&P volume was typically around 600mm in the periods prior to this volatility. From 9/23 to 9/30, SPX volume increased to around 700mm, and from 10/1 to 10/7 was between 700mm to 800mm. On 10/8/98, SPX volume spiked to 1.159B shares.

Between 10/7 and 10/8, 250,800 extra shares of the SPX traded over the prior days, with an 11.24 point decline for the day. Those shares had \$2.818B realized loss on the SPX, on an invested amount of \$243BB.

The jumps in volume suggest that Tiger and other similar funds were responsible for a significant percentage of the volume in the stock market in that period. This period also revealed other "Macro" funds that were playing in this trade, when their losses came to light.

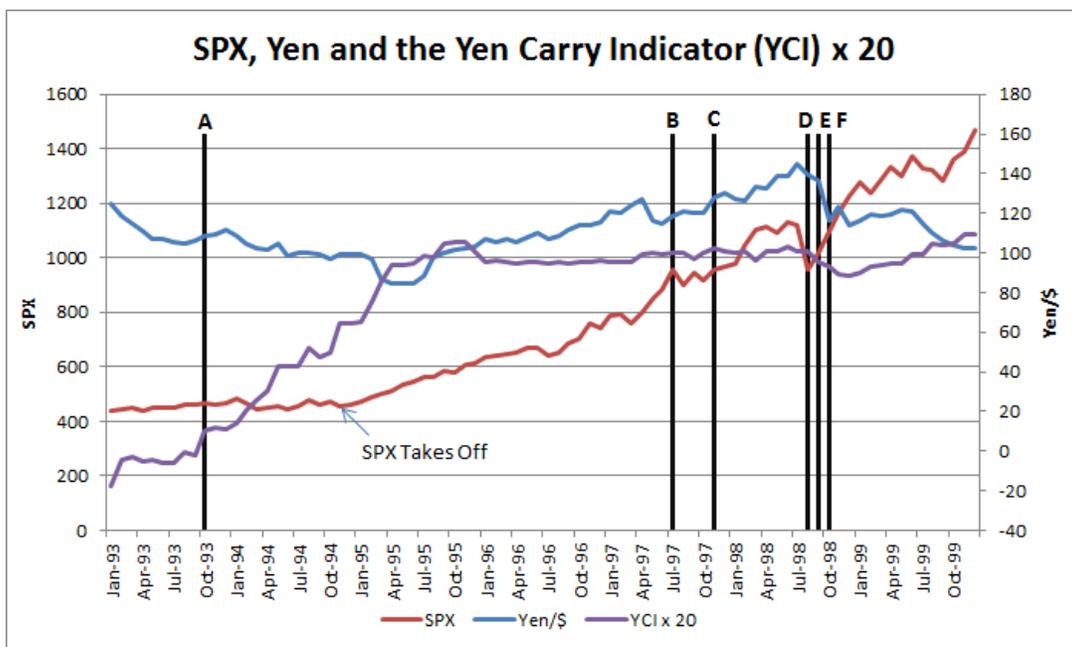
<http://money.cnn.com/1998/10/27/companies/soros/>

Given that there were many other large "Macro" funds also investing in this period, 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 a "[New Economy](#)".

And all economists that proclaimed that "[the state of macro is good](#)" or that "[the central problem of depression-prevention has been solved](#)" were dead wrong, as were [their critics](#); in fact, **Macro Economics had failed**, and the [problem was really simpler](#) than one can imagine.

Yen Carry and the Stock Market

Graph 23

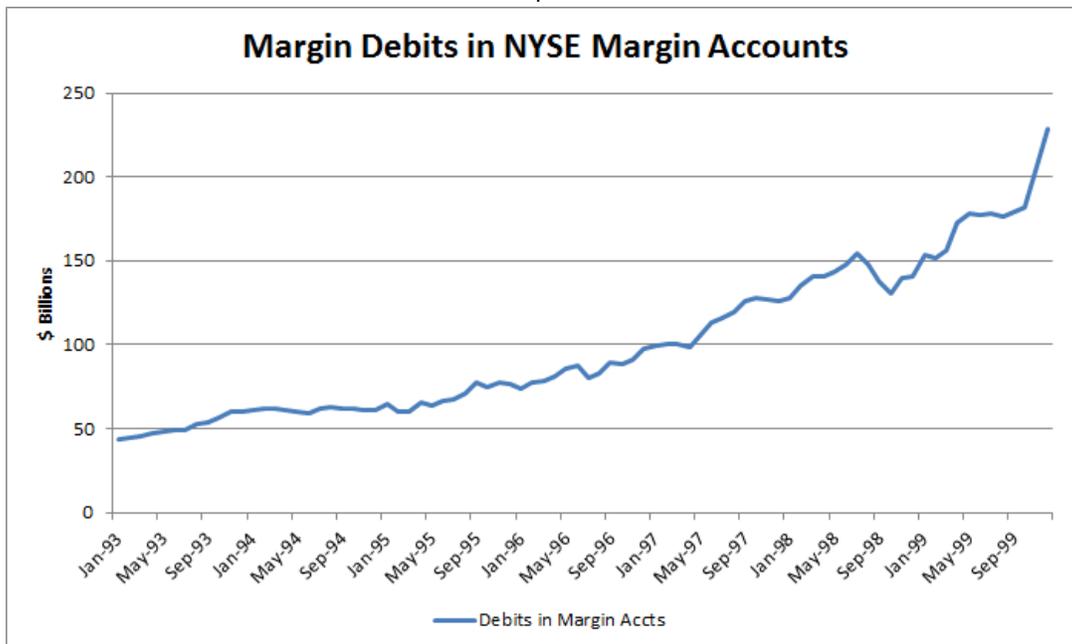


Source: Bloomberg, MBS Mantra, LLC

From the Samurai market graphs above, it is clear to see that, post 1994, as the Yen weakened, along with Samurai Bond issuance, the SPX rallied. The Yen strengthening after the Russian Crisis should have normally been a negative for Samurai issuance. Instead Samurai Bond Issuance picked up, since the Yen strength was offset by an increase in the Fed Funds rate, as well as the start of QE in Japan - this subtlety is captured by the YCI. As a result, the SPX resumed its rally in 1999.

Margin Debit balances in Margin accounts also increased.

Graph 24



Source: NYSE, MBS Mantra, LLC

1999 to the Present: The Yen and Dollar Carry Trades

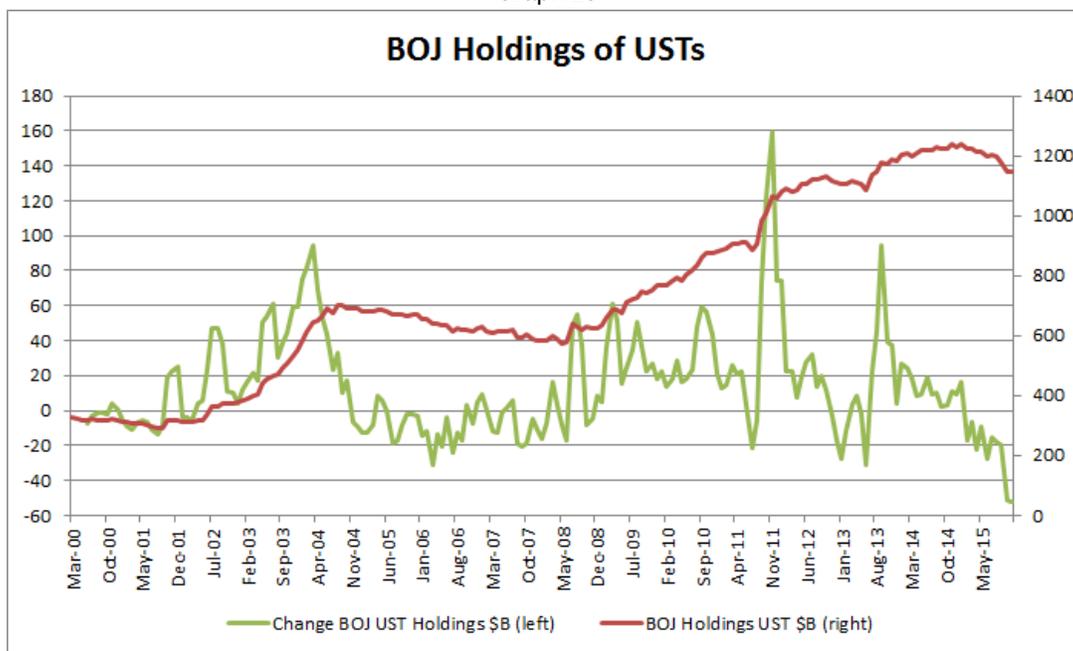
Starting in 1999, BOJ's Call rate was close to zero, starting a decade of Zero Interest Rate Policy or "ZIRP".

Japanese institutions, like Insurance companies and the Postal Pension system, also started investing in overseas assets.

In addition, "Mrs. Watanabe", the legendary Japanese housewife, (i.e. Japanese retail investors) also started trading Yen for other currencies, notably Aussie\$ and US\$, for yet more Carry Trades. This is discussed in previous Crisis Notes; the 'Watanabe flows' that are usually quoted by journalists to be over \$1T.

The BOJ also started deploying QE, adding more potential capital that could be exported, and this had a significant impact on US Economic activity from 2003 to 2005. This is discussed in the Interest Rate Swaps article, and will also be discussed in more detail below.

Graph 25



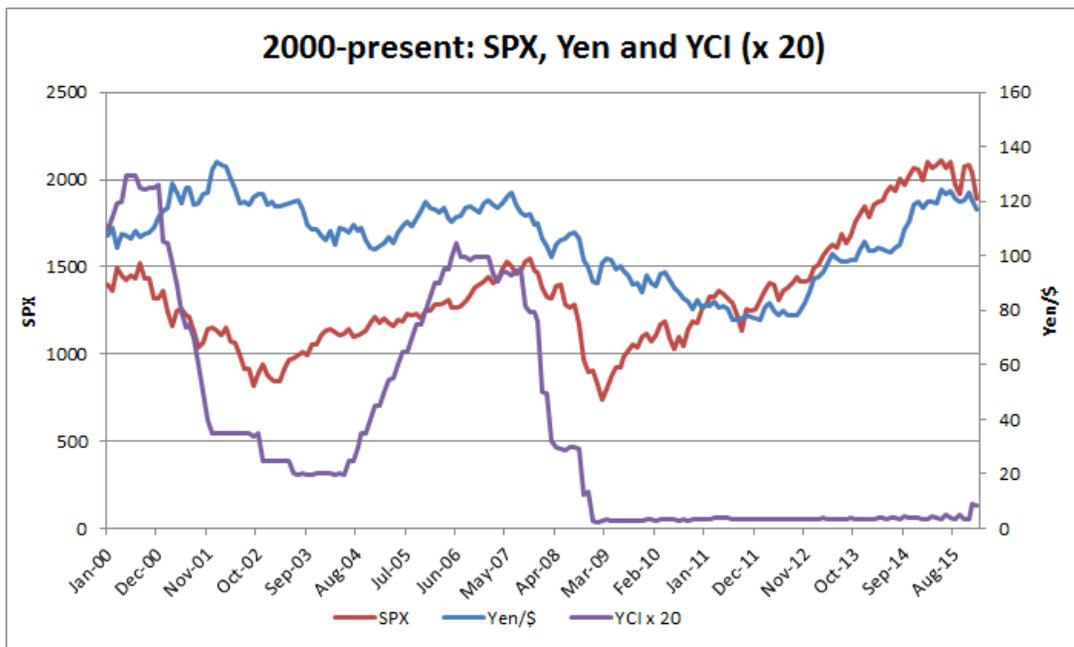
Source: US Treasury, Bank of Japan (BOJ), Bloomberg, MBS Mantra, LLC

Between Yen borrowing by banks, Samurai Bonds, Japanese QE, and Mrs. Watanabe, the Yen Carry Trade continued to fund the world, and especially the US. As Japanese money supply was primed, it searched far and wide for investments that would earn more than Japanese Assets. Thus began the phase that led to the Global Financial Crisis ("GFC") - after the supply of available investments was exhausted, assets were being created (notably Subprime and CDOs) to feed the voracious appetites of Carry Traders, further leveraged by [Basel rules](#).

In addition, the US Dollar Carry trade started in earnest after 9/11/2001, as the Fed cut rates from 2001 to 2004. During this period, the Yen Carry Incentive shrank, and I suspect the US became a source of Capital for other countries. This will be explored in Section 3 below. When the Fed raised rates again in 2004, Japan once again became the dominant supplier of capital to the US.

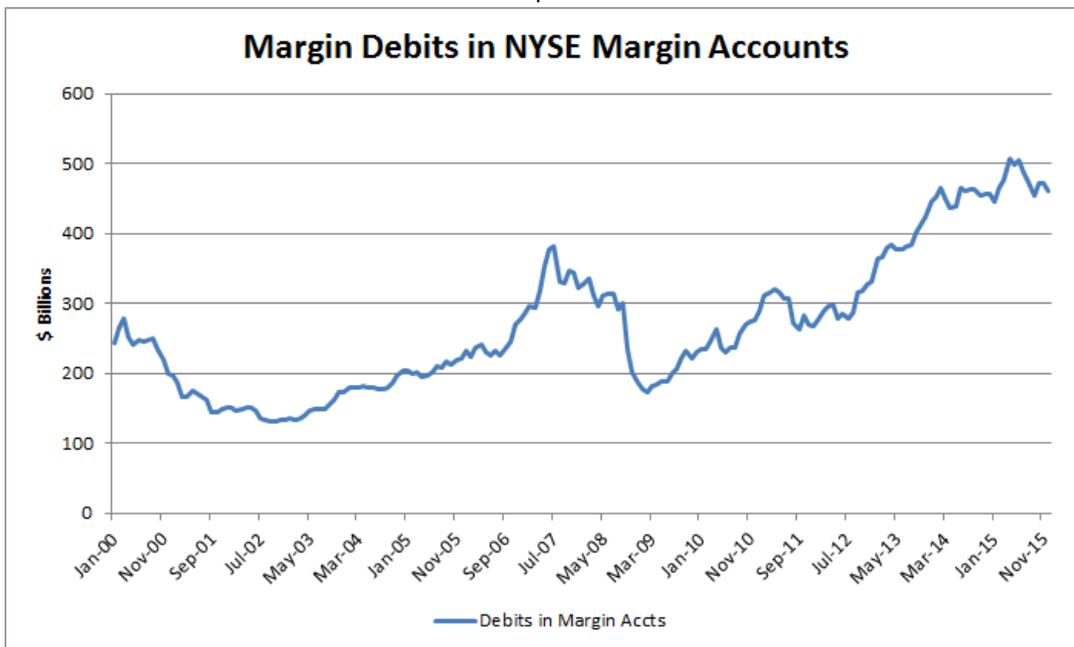
As described in the analysis of [Interest Rate Swaps](#) article, it was the transfer of the BOJ's QE and increased purchasing of USTs in 2003 that lowered longer US interest rates, including mortgage rates, thus exporting Japanese Money Supply to the US, and leading to the Mortgage refinancing boom and changes in US Swap Spreads during this period. This in turn also enabled the appreciation of other US Assets, including Equities.

Graph 26



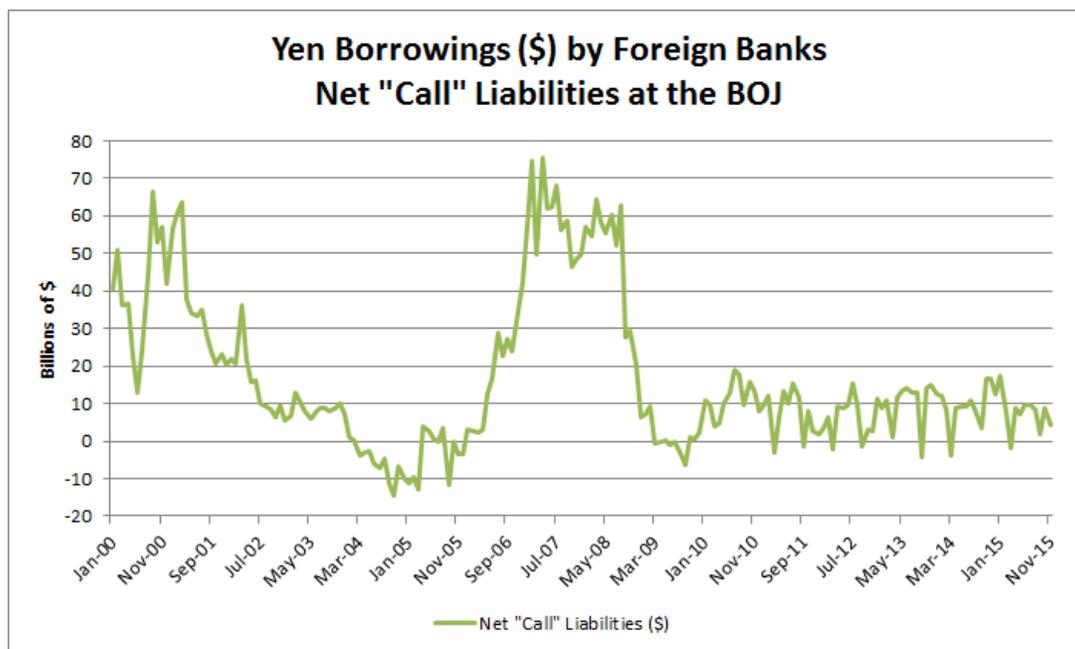
Source: Bloomberg, MBS Mantra, LLC

Graph 27



Source: NYSE, MBS Mantra, LLC

Graph 28



Source: Bank of Japan, Bloomberg, MBS Mantra, LLC

The Yen Carry Trade continued unabated until US Asset prices started collapsing in 2007. You can easily spot the Deleveraging that occurred in 2008! There is more discussion of this in the Money Supply section that follows.

In 2008, the [Fed also started using QE](#), in addition to cutting rates again in 2007, once again triggering Dollar Carry, much of it to the Emerging Markets (discussed in [this Crisis Note](#)).

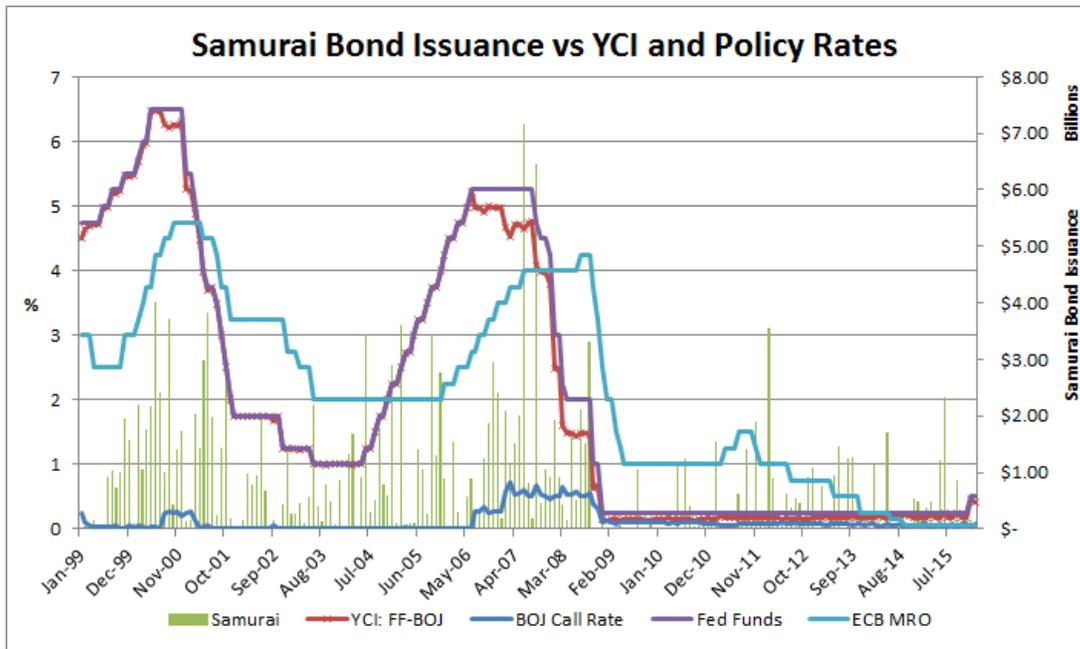
The Yen Carry Trade Indicator (YCI) will be a less effective measure for this period due to the additional sources of Carry, from both Japan and the US, and marginally the ECB. Since Japan has been in ZIRP for a long time, the YCI resembles the Fed Funds Rate. After 2009, when the US cut rates to Zero too, the YCI also went to zero.

There was some Samurai bond issuance after the YCI went to zero. This was primarily from financial institutions that had been bailed out that needed more capital. US markets and investors were still in shock, or wanted to export capital to EM for higher yields, whereas it appears that Japanese investors were still willing to lend to US financials, who borrowed money where they could. (For more details, see the [Samurai Bond Note](#)).

As you can see below, Carry from Samurai bonds alone does not explain the price action of the US Stock market, although there is a link.

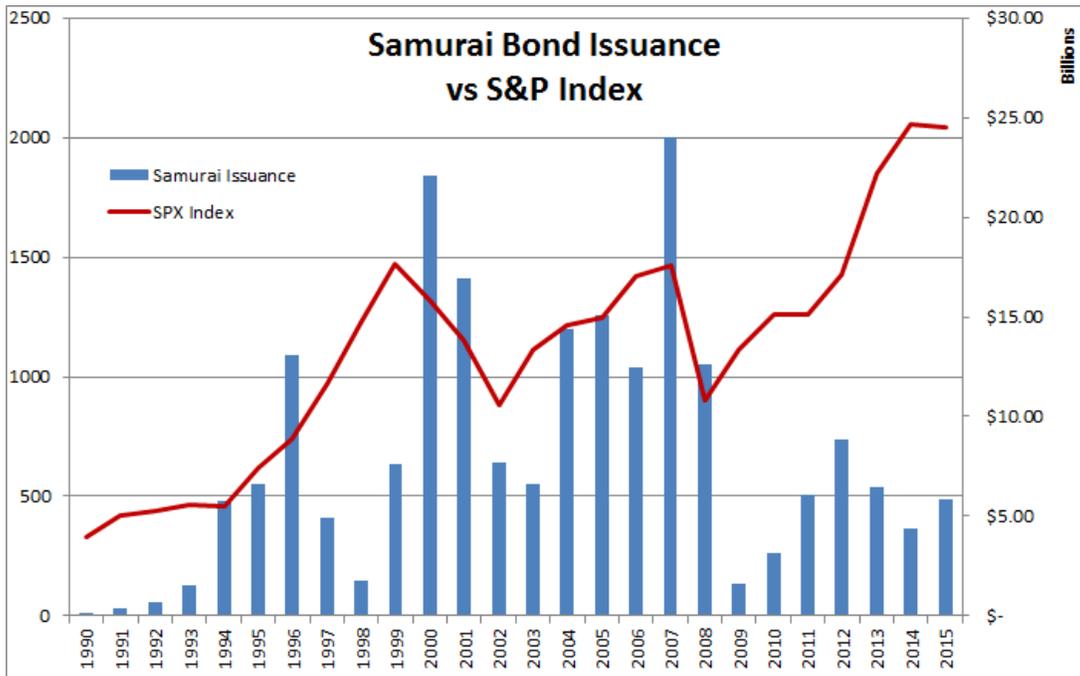
I therefore created the "Shah Carry Indicator" described below to incorporate other forms of Carry.

Graph 29



Source: Bloomberg, MBS Mantra, LLC

Graph 30



Source: Bloomberg, MBS Mantra, LLC

Transmission of Carry Trades: Merrill Lynch - a Proxy for US Brokerage Firms/Banks

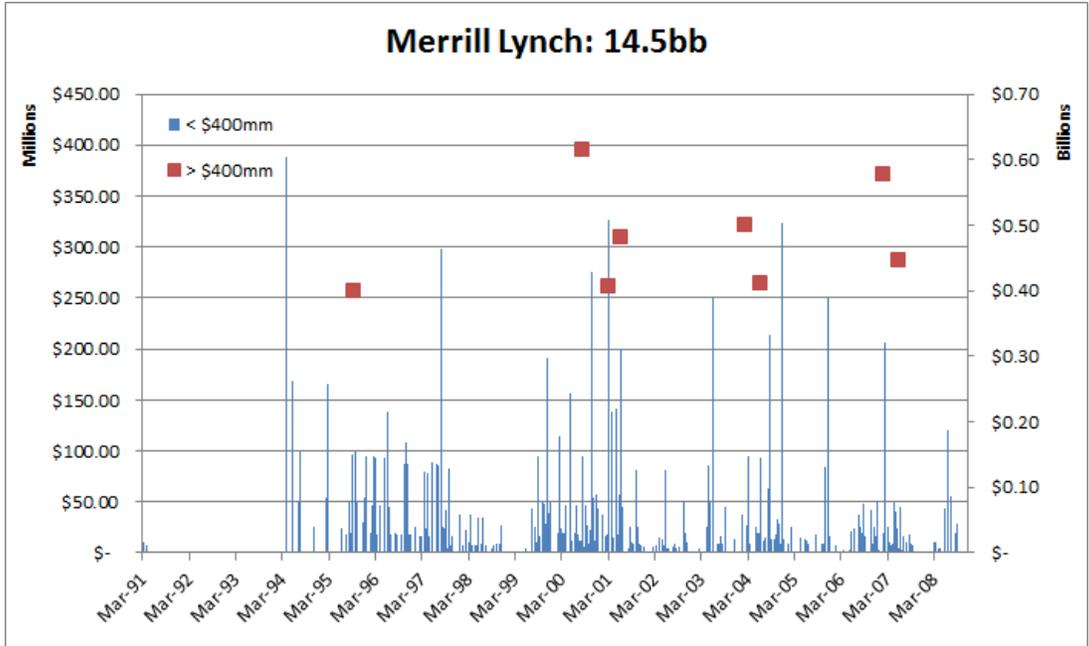
Merrill Lynch was a dominant and regular issuer in the Samurai Bond market, as were other financial companies. See the [Samurai Bond Market](#) analysis for more details.

Samurai bonds allowed the US Banking system to increase its capital, thereby increasing banks ability to grow balance sheets, in turn expanding banks lending and total assets, and thus increasing US Money Supply.

Samurai bonds have not been without risk to Japanese investors. Lehman's bankruptcy was great cause for concern. There was a [Business Week](#) article about this.

This next 2 graphs are copied from the Samurai Bond Market article. They show Merrill Lynch's Samurai bond monthly borrowings, with the larger deals shown on the right axis as red squares, so as to not overwhelm and compress all the blue columns from the smaller deals, which give also information about timing.

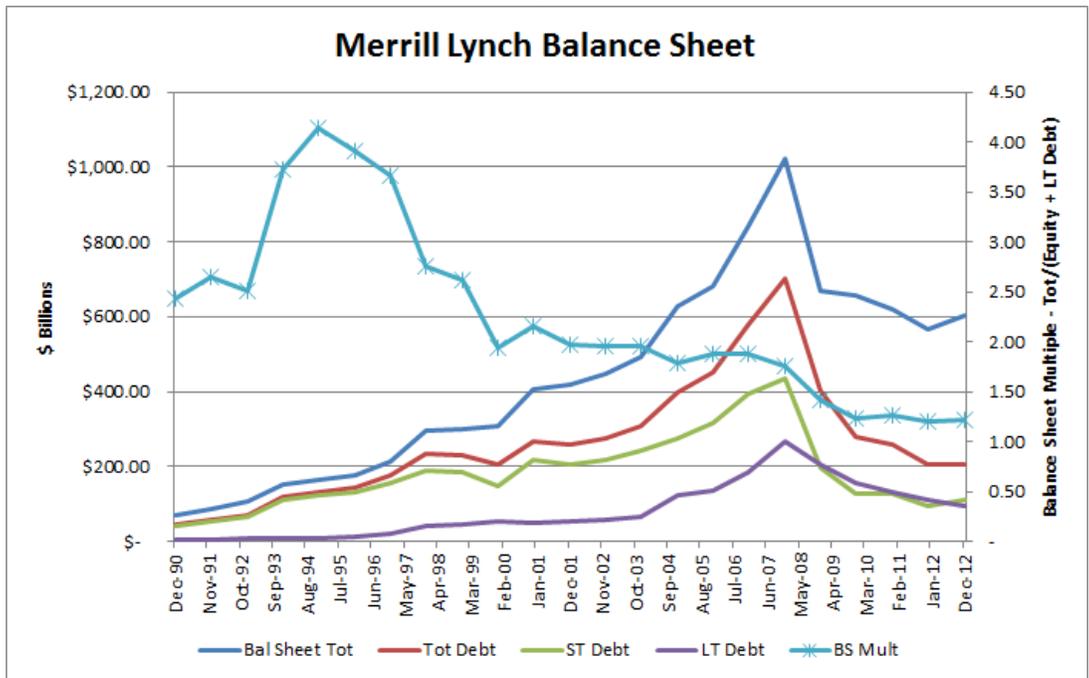
Graph 31



Source: Bloomberg, MBS Mantra, LLC

The Samurai issues all are part of the Long Term (LT) debt in the next graph, which shows the resulting balance sheet leverage they allowed since they counted as capital. This, of course, facilitated the creation of Excess Assets that culminated in the Financial Crisis.

Graph 32



Source: Bloomberg, MBS Mantra, LLC

The Shah Carry Indicator ("SCI")

The YCI is not a direct measure of the money supply that can be exported by a Trapped Economy; it is a measure of financial incentive to deploy available capital and money supply to another Economy. When a Trapped Economy

creates additional Money Supply through unconventional policy measures such as QE, this newly created money supply can also be immediately exported, but is invisible to the YCI - the YCI does not capture the creation of this additional money supply due to the policy rate already being at or close to zero.

For the SCI, I define the term "Carry" more broadly than the typical definition. **In my usage, "Carry" is defined from the perspective of the economy that is receiving extra money supply, and includes all sources of Money Supply that are NOT a result of conventional monetary policy for that country.** It includes money supply imported from Carry Trade deployment and foreign QE, but also incorporates domestic forms of non-conventional financial policy that can increase money supply, such as domestic QE, and will include more radical forms of money creation that might come in the future, such as direct injections into bank accounts.

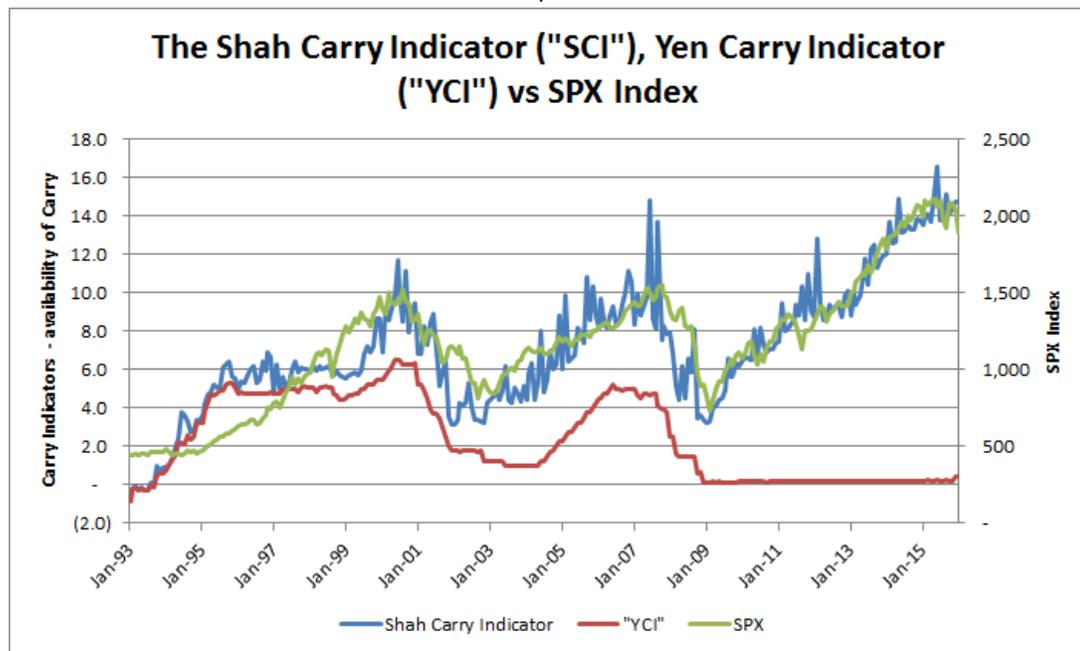
I also include Samurai bonds - while the incentive to originate them should derive from the YCI, they are a more powerful form of capital import than shorter term lending, from the US perspective, as they can count as capital for US banks, and therefore can increase the velocity of money and thus have a multiplicative impact on money supply. Samurai bonds become less important after 2008 as the velocity of money in the US dropped.

I considered adding an Abenomics flag to the SCI (after 2012), as it this Japanese governmental policy to devalue the Yen might be forcing Japanese investors overseas. However, this will have a greater impact on Japanese money supply, and less on the US money supply and SCI, which, after 2008, is dominated by the Fed's QE. It should be included in an SCI-Japan.

In its current form, the SCI is a linear combination of the YCI and weighted carry sources, and the number generated does not have a direct interpretation. It is not quite a measure of quantity, or of incentive. It is a blend of incentives and flows. We are looking to it solely for identifying relationships and potentially testing for predictive power.

(2/29/2016 update: I was thinking more about the definition of "Carry" I use in the 'SCI' - and I think the term 'Injected Capital' is more appropriate - Money Supply injected in addition to Carry. The next version will change all the Terminology to reflect this.)

Graph 33



Sources: FED, BOJ, Bloomberg, MBS Mantra, LLC

This is a temporary definition - ideally, it would be a direct measure of money supply or changes in Money Supply, but until the data supplied by governments becomes more granular, this might not be possible.

This initial version of the SCI is from the perspective of the US Economy, and in spite of not being a very refined model, has quite good explanatory power for a variety of assets and economic indicators.

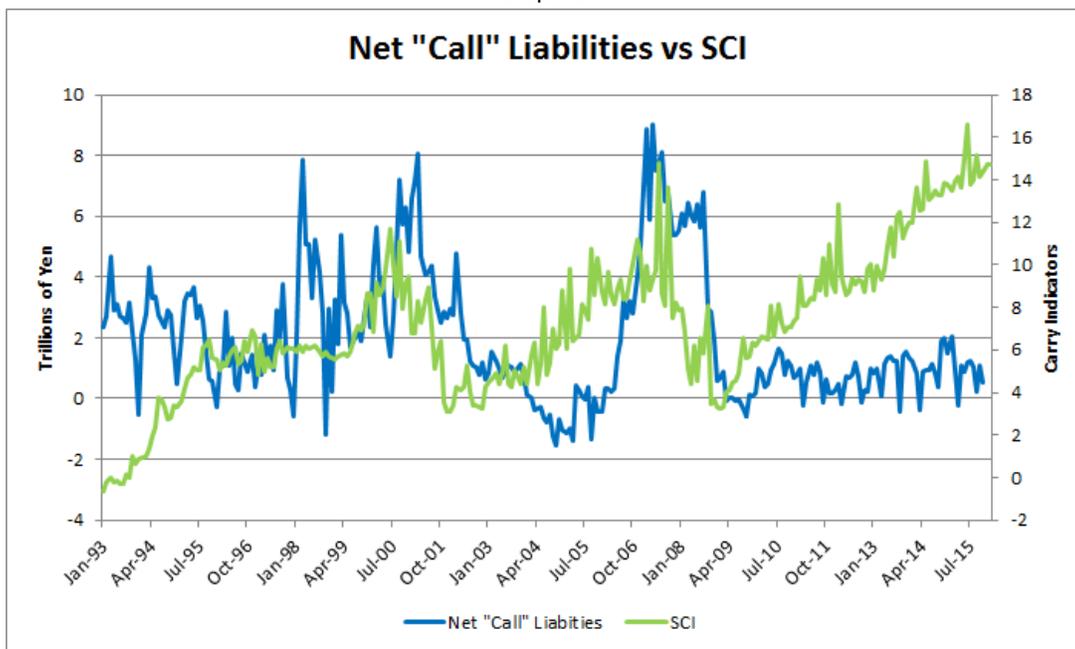
The graph below compares the SCI and YCI to the S&P Index. As you can see above, the modifications to the YCI have dramatically improved the measure.

That it is has nothing to do with traditional financial and asset modeling inputs, such as expected returns, discount rates, etc, makes it all the more interesting.

The responsiveness of Japanese sources of Carry to the YCI and SCI

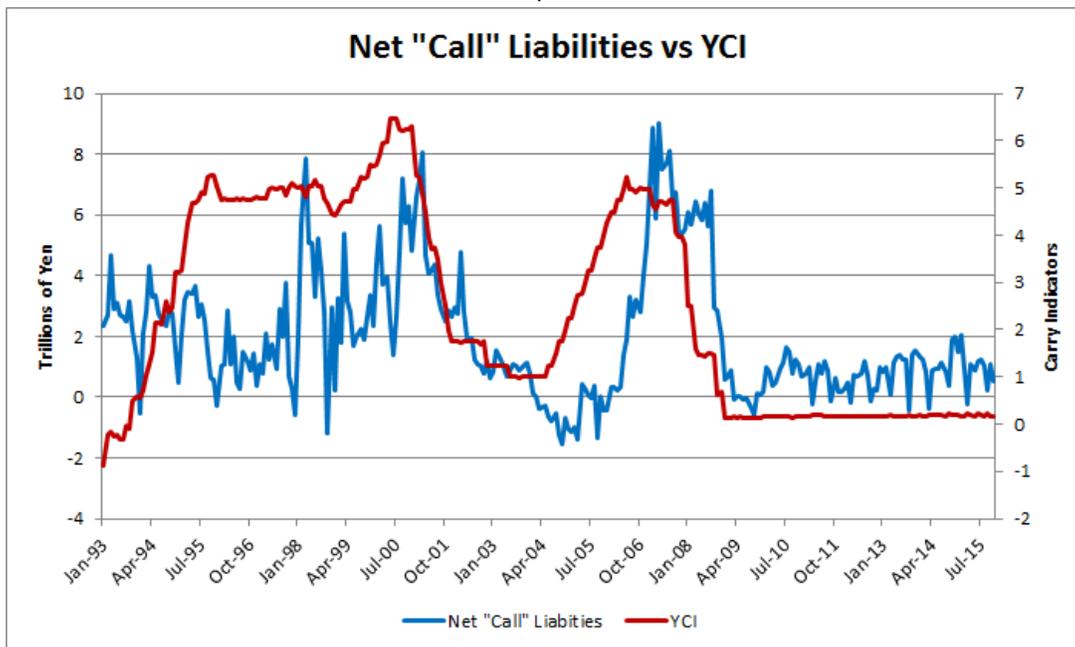
The divergence between the YCI and SCI after 2008 comes largely from the Fed's Balance Sheet operations - domestic QE - which has reduced the need for US financial institutions to borrow from the Japan. This shows up below in the Net Call Liabilities of Foreign Banks, where the YCI has better explanatory power. After all, the banks can now borrow at very attractive rates from the Fed!

Graph 34



Sources: FED, BOJ, Bloomberg, MBS Mantra, LLC

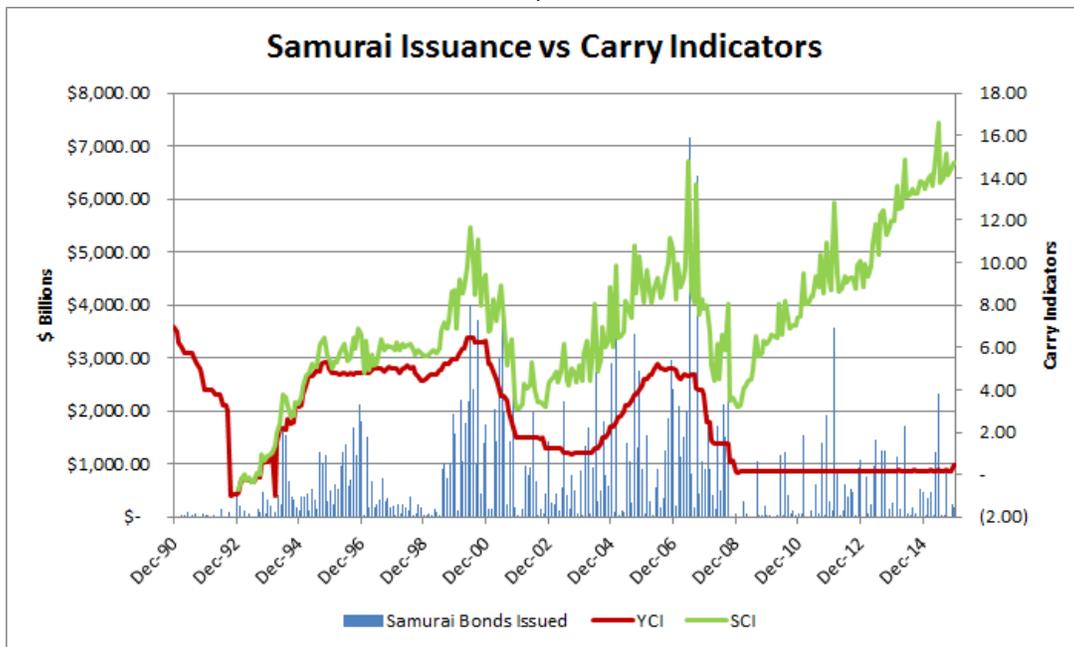
Graph 35



Sources: FED, BOJ, Bloomberg, MBS Mantra, LLC

Since Samurai bonds are included in the SCI, there is a degree of auto-correlation with the SCI.

Graph 36

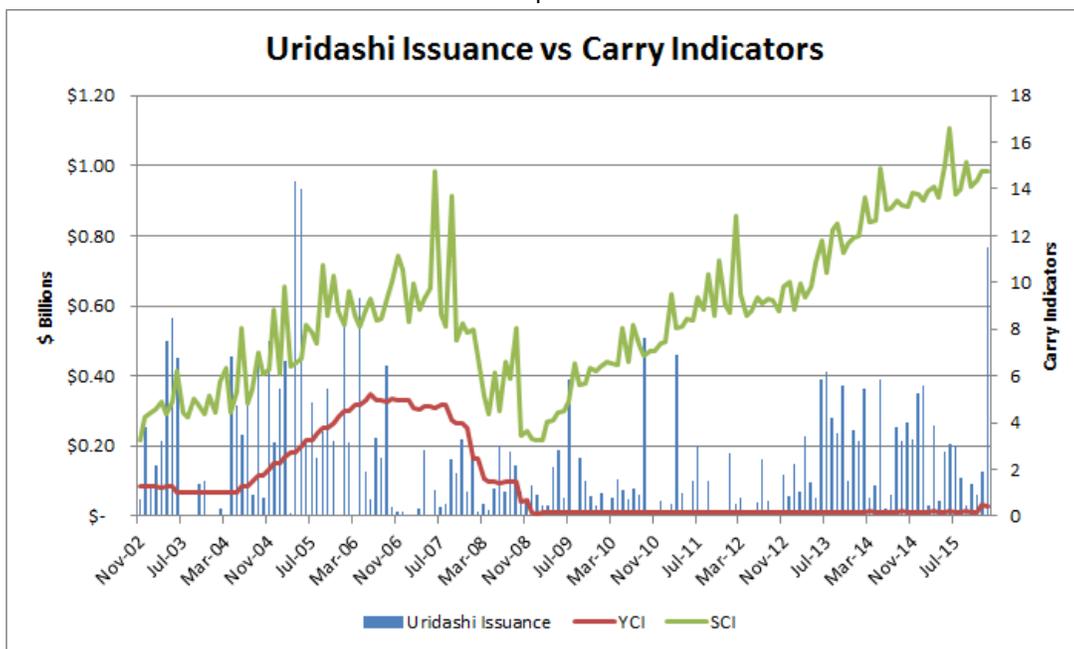


Source: BOJ, Fed, Bloomberg, MBS Mantra, LLC

Uridashi issuance is pretty closely related to changes in the SCI and YCI, especially in the 2002 to 2008 period. The spike in USD Uridashi issuance after 2012 might be related to 'Abenomics' stated mission to devalue the Yen, which might have chased investors into other currencies, including the USD.

This graph only shows USD Uridashi Issuance. As mentioned previously, Uridashi bonds were issued in over 15 currencies.

Graph 37



Source: BOJ, Fed, Bloomberg, MBS Mantra, LLC

Summary:

The Primary Carry Trade that exports capital from Funding Countries to Carry Recipient countries is the Yen Carry Trade. Capital is exported from Japan primarily by:

1. **Yen Borrowing or Selling** - Funding in Yen through banks, plus currency trading of of Yen for other currencies (Mrs. Watanable)
2. **Japanese Purchases of Bonds and Trusts** denominated in foreign currencies (including EuroYen bonds).
3. **Samurai bonds** issuance by American financial institutions, increasing bank capital and leveraging the balance sheets of US banks.
4. **Quantitative Easing by the BOJ**, exporting capital both directly (purchasing foreign Sovereign bonds) and indirectly (injecting money in to Japan's economy by purchasing JGBs, which then gets exported by the Japanese - see #2 above).

The data above shows that there is quite a good responsiveness to export capital from the incentive to export - the YCI - and that many sectors and institutions of the Japanese economy, including the central bank, help export its capital.

Section 2: The Pricing of Assets

In this section we will compare the Shah Carry Indicator to a variety of Assets and economic indicators.

While it is widely accepted that asset prices are influenced by money supply, what has changed since 1994 is that the local central bank is no longer the monopoly supplier of money and money supply, and that it is money supply from global sources that determines asset prices, not just local money supply.

Please don't expect perfect correlations to all assets - there are other factors at work, such as hedge/leverage ratios that move with volatility.

Many of these graphs show that different betas, or sensitivities, apply to different assets. The SCI has some explanatory power for the prices of most assets, with greater linkages for financial assets.

We have already seen the close relationship to the S&P 500 Index above. At the margin however, the Yen alone precisely explains micro movements in the S&P daily, tick by tick, day by day, suggesting to me that the S&P (and the US stock market) is controlled by Program and Algorithmic Trading, using the Yen as the funding and hedging source.

Yen and S&P intraday relationship

Here is data from last week. Note that you need to make the trading hours the same on Bloomberg if you want to pull up the charts yourself. In previous notes, you'll find some intraday graphs from other periods.

Correlations using daily closings data get lower, possibly because of misalignment of closing prices, or changing hedge ratios in response to changes in the VIX, or maybe other factors. This is something I will study later to see I can model a hedge ratio with greater precisely.

Graph 38 **Yen Intraday Trading**



Source: Bloomberg, MBS Mantra, LLC

Graph 39
S&P 500 Index Intraday Trading



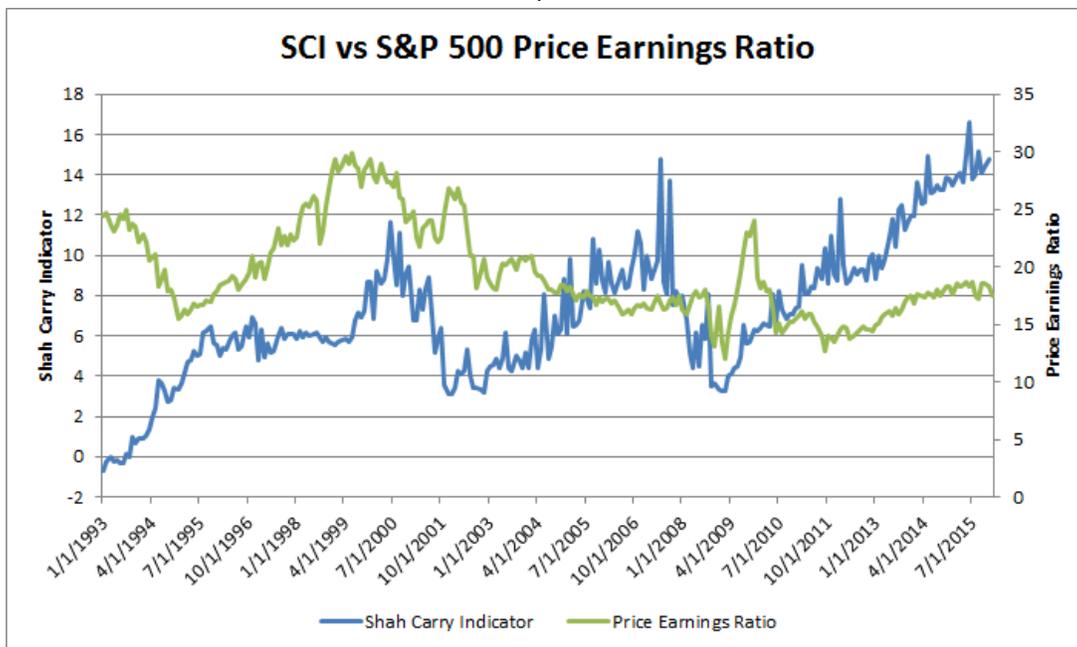
Source: Bloomberg, MBS Mantra, LLC

SCI and the S&P 500 Price Earnings Ratio

Certainly correlated, but not as well as the Index itself - possibly needs some beta or leverage adjustments. There are studies that suggest that hedge ratios do change with movements in volatility and trend directions.

There appears to be some concern in the markets that the current PE Ratios (and the resulting gap to the SCI) are a result of financial engineering and buybacks of stock, and are limited in their stability, in which case they might come back more in line with the SCI (i.e. rise, indicating current underestimation of PEs.)

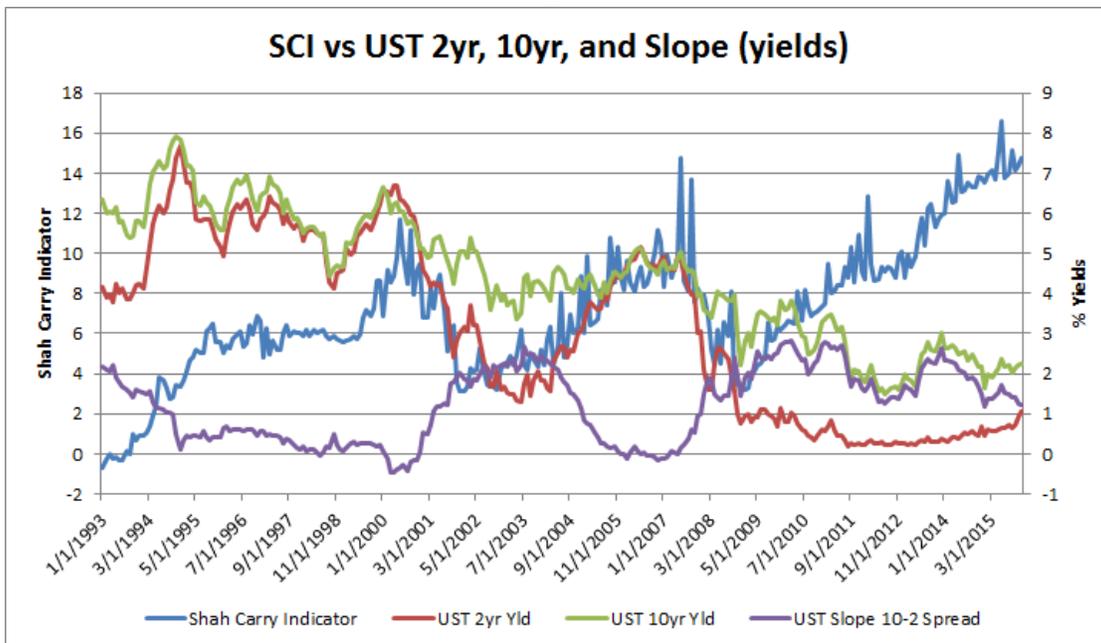
Graph 40



Source: Bloomberg, MBS Mantra, LLC

SCI and US Treasury Bonds

Graph 41



Source: Bloomberg, MBS Mantra, LLC

As a bond market participant, I find this very interesting.

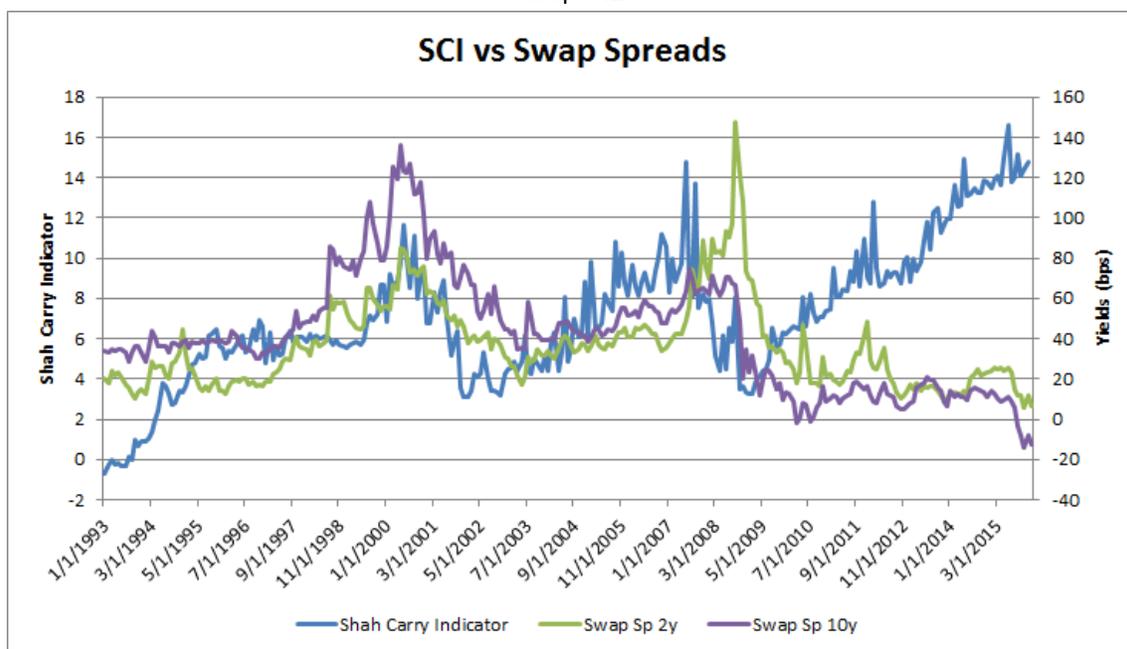
As one would expect, the 2yr UST tracks the SCI during the 2000 to 2008 period, as both followed the changes in the Fed Funds rate.

However, as I pointed out in the Interest Rate Swaps article, there is a link between the 10yr UST, Refi index, and BOJ's balance sheet holdings of USTs. which I suspect was responsible for the 10yr rally in 2002-2003 period. When the BOJ stopped buying USTs, the 10yr-2yr slope steepened until the Fed raised rates again.

Post Crisis, as the Fed became the dominant buyer of USTs for its QE Balance Sheet, bonds prices became more correlated to the SCI (their yields declined as SCI increased), with US QE lowering rates as well as increasing SCI.

SCI and Interest Rate Swaps (and LIBOR)

Graph 42



Source: Bloomberg, MBS Mantra, LLC

Another very interesting chart - the SCI is highly correlated with Swap Spreads in the Pre-GFC period.

Based on the timing of BOJ purchases of USTs between 2001 and 2004, and Samurai bond issuance, my interpretation is the following: the BOJ's purchases of USTs lowered longer rates as well as injected money supply into the US economy. The BOJ also increased purchases of JGBs, injecting money into the Japanese economy. Sellers of JGBs to the BOJ replaced them with higher yielding Samurai bonds and other US securities, further injecting money supply to the US, as well as capital to the banks. Banks were able to use the Samurai supply to increase bank lending and their balance sheets. Interestingly, both 10yr and 30yr swaps had tightened during the rally from 2001, suggesting demand for spread products.

The combination of increased availability of funds with lower rates led to the mortgage refi index spiking upwards as the current coupon mortgage declined. Although 30yr swaps spreads are not on this graph (they are in a similar graph in my [recent Swap Spreads article](#)), 10 years swaps also widened to 30yr swap spreads, in spite of both tightening to USTs, indicating increasing supply of MBS.

When the BOJ started reducing its UST purchases in March 2004, 10yr yields immediately went up in March 2004, the current coupon mortgage went up, refi's dropped, and 10yr swaps spreads widened by 20bps.

This rise in rates appears to have caught everyone by surprise, with some researchers looking back to the 2004 experience to infer that the market can anticipate Fed moves by 3 months, since in 2004, Mr. Greenspan did not raise the Fed Funds rate till June 2004, 3 months after rates actually rose. This link from Wells Fargo is an example.

<https://blogs.wf.com/advantagevoice/2015/11/this-is-not-the-2004-bond-market/>

... For one, market yields had increased quite sharply in anticipation of Fed tightening in 2004. Market yields were much lower in mid-March 2004, before investors began to worry about a change in Fed policy. Some yields increased as much as 100 bps between mid-March and late-June.

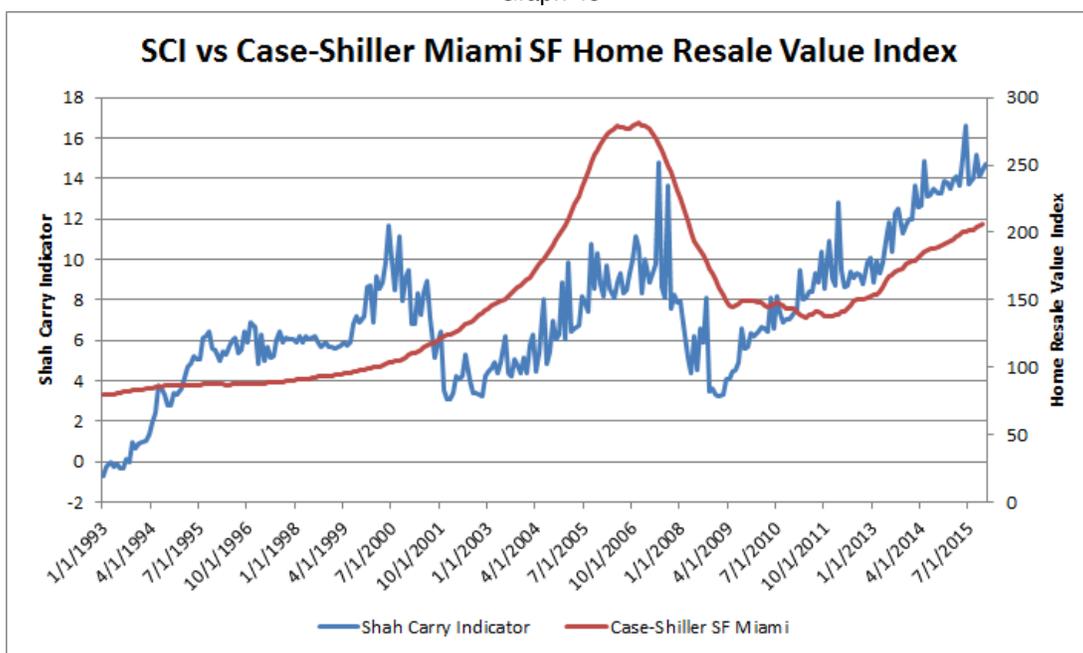
"Worry about a change is Fed policy" was the best explanation I have found for this rise in rates in March 2004. The BOJ's balance sheet was not on anyone's radar back then.

The explanation I postulate above breaks new ground in understanding the 2004 experience.

SCI and Housing

Apologies to anyone in living in Miami. I chose Miami Single Family Home prices as an example of Carry driven housing assets.

Graph 43



Source: Bloomberg, MBS Mantra, LLC

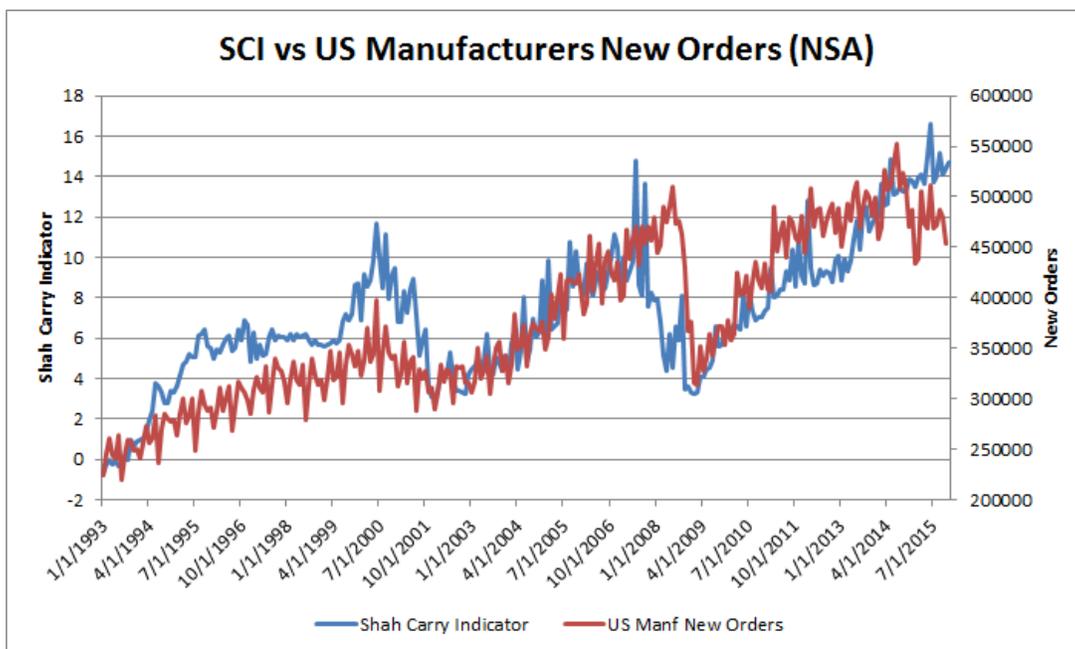
Anyone see subprime or the housing bubble here? And post the Great Financial Crisis ("GFC"), the subsequent Private Equity funded Single Family Rental asset class? Prior to 2003, it seems people actually bought house to live in them!

[/var/m_0/00/003/44984/485769-Population%20vs%20Prime%20and%20Subprime.png](#)

SCI and US Manufacturers New Orders

Yup, Carry drives Manufacturing. I am very surprised but pleased by the strength of this relationship.

Graph 44

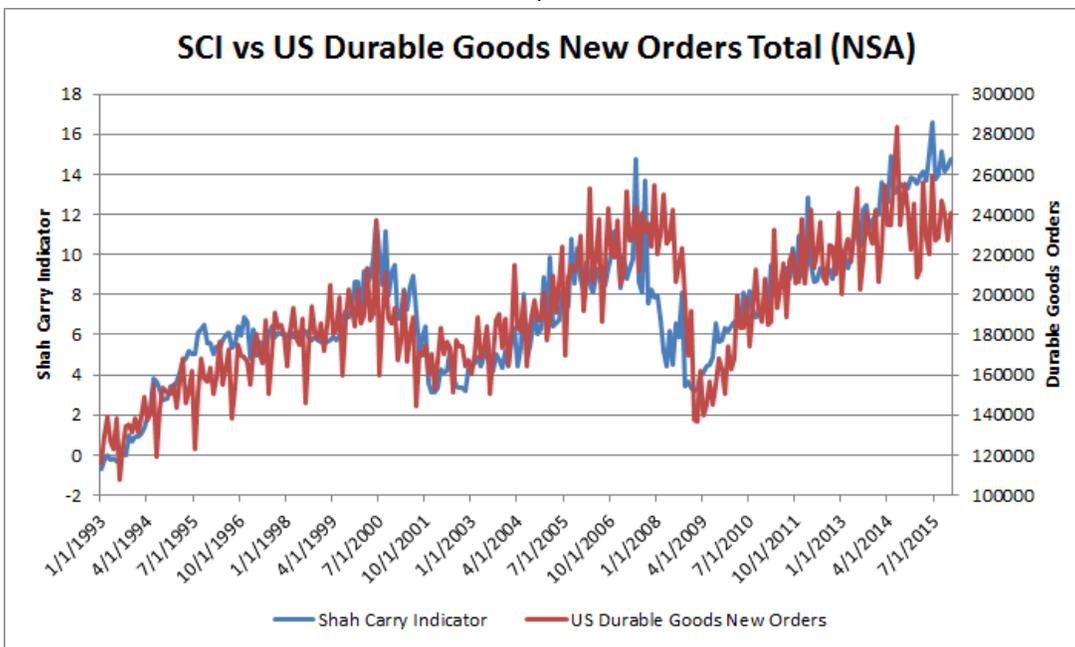


Source: Bloomberg, MBS Mantra, LLC

SCI and US Durable Goods New Orders

Ditto. I am pleasantly shocked by this!

Graph 45



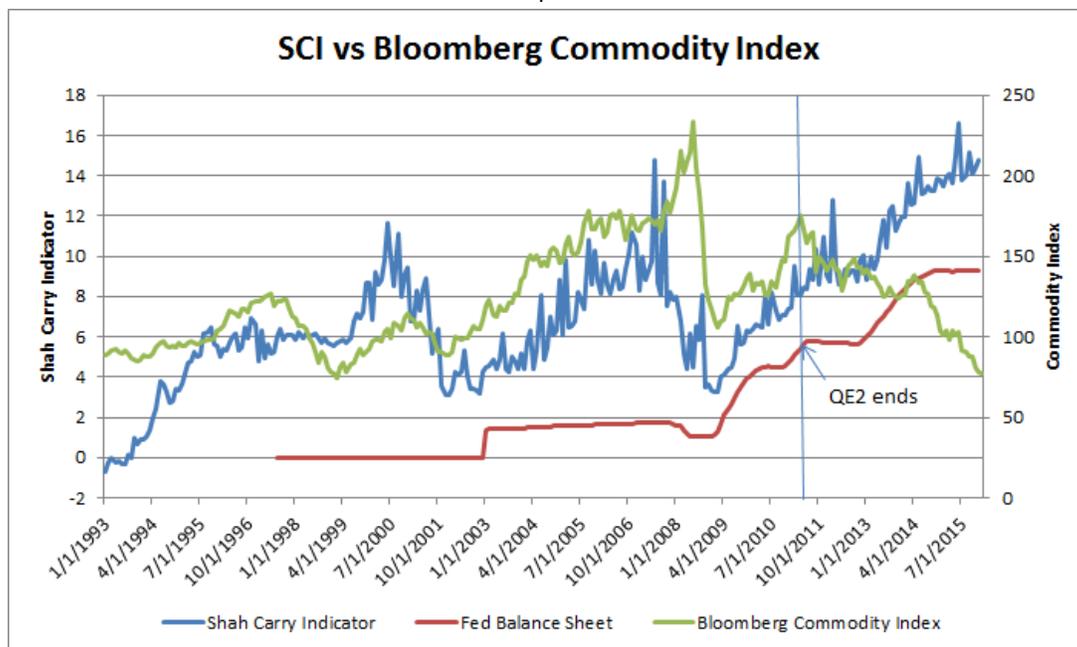
Source: Bloomberg, MBS Mantra, LLC

SCI and Commodities

The Commodity markets appear to follow the SCI quite well, but started diverging and falling in September 2011. This coincides with the end of QE2!

Did the commodity traders realize something about demand and the economy that the stock markets traders did not? There is certainly a divergence. This merits further investigation.

Graph 46



Source: Bloomberg, MBS Mantra, LLC

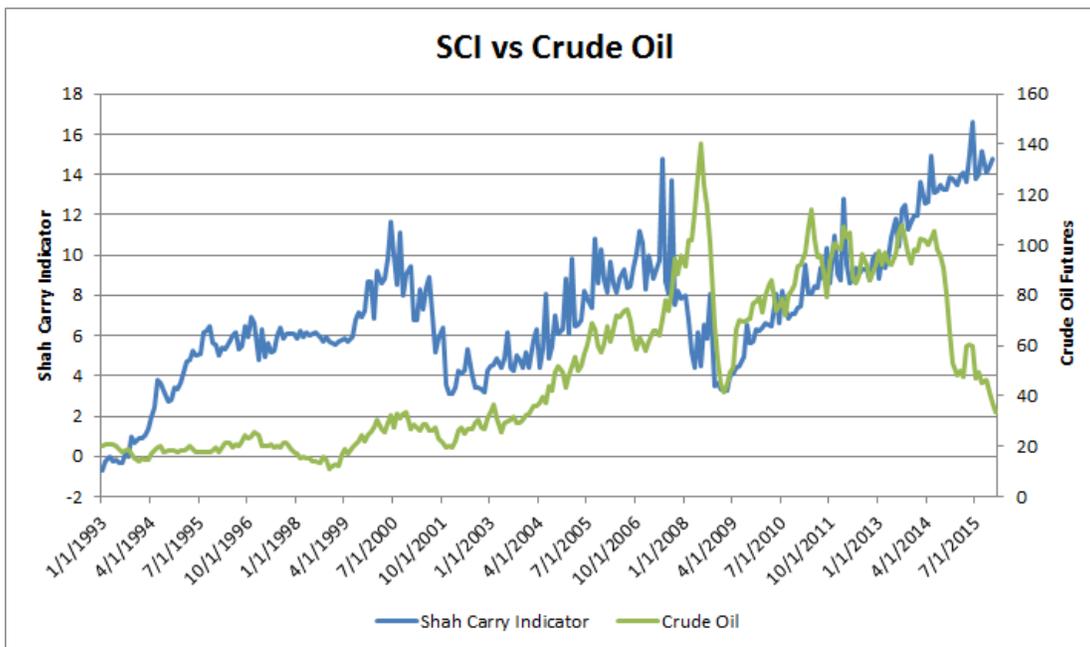
SCI and Crude Oil

Not surprisingly, SCI explains most of Crude Oil's price history. One might argue that Carry (via the High Yield and CLO markets) gave the industry the capital to develop shale in the US, leading to the current price collapse. It is instructive to remember that Oil was at \$20 before the Carry Trade started, and for most of the 1990s.

Oil and commodities in general above seemed to have started declining when QE3 was implemented, around September 2011. These markets seem to have taken Bernanke at his word, and commodities have sold off since then.

"The weak job market should concern every American. It imposes hardship on people.."

Graph 47

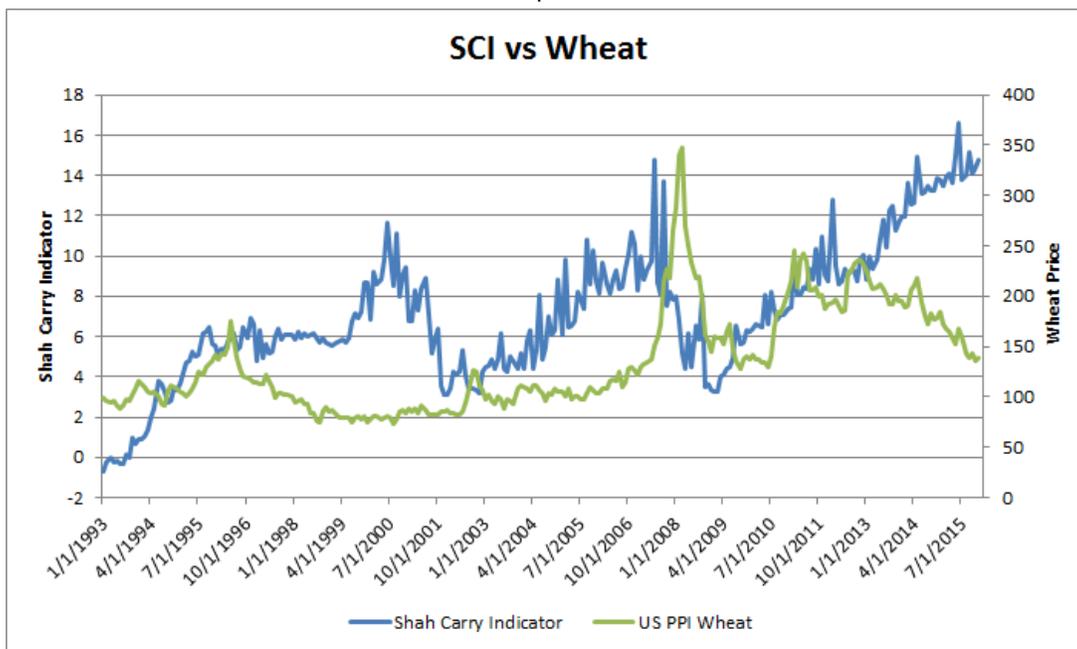


Source: Bloomberg, MBS Mantra, LLC

SCI and Wheat

I tested the SCI against wheat, as the US is the third largest producer of wheat in the world, and largest exporter, exporting almost 50% of its production. (Source: Wikipedia). If there is a product that should be immune to currency flows, it seems that it should be wheat.

Graph 48



Source: Bloomberg, MBS Mantra, LLC

Summary - Section 2, the Pricing of Assets

Many asset prices in the US appear to be driven by the YCI and SCI, with financial assets like Stocks, housing and commodities most linked. This in turn has appeared to drive real economic activity, as seen in the relationship between leading indicators such as durable goods.

In addition, some sources of carry, such as the **BOJ's UST purchases**, have also impacted interest rates and driven movements in derivative parts of our economy, such as Interest Rate Swaps and mortgage refinancings, results usually attributed to the Fed.

Section 3: The Failure of Macro Economics

In this section, I will explain what Central Bankers are attempting to accomplish with Monetary Policy, look at its effectiveness in today's economic world structure, and look at what they actually do manage to accomplish. I use the examples of the Japanese and US economies, and the policy decisions of each country, in this analysis.

A Summary of Monetary Policy

Central banks mostly attempt to manage money supply in order to control prices and target inflation. Some central banks have other mandates, such as employment targets and currency management, but the tools used are similar.

The ECB has put up a nice chart describing the Transmission of Monetary Policy. So have other sources.

<https://www.ecb.europa.eu/mopo/intro/transmission/html/index.en.html>

In a prior [Crisis Note](#), I summarized the Bank of England's white paper titled '[The Transmission of Monetary Policy](#)'. I don't agree with it, but it gives a good picture of what central banks believe and are attempting to achieve. This is my summary of the BOE's paper:

- Central banks derive their power from the fact that they are monopoly providers of “high powered” money (base money).
- Central banks choose the price (rate) at which they lend high powered money to the private sector - the Policy Rate eg. Fed Funds Rate or Uncollateralized Overnight Call Rate.
- This official rate is transmitted to other market rates via the banking system to varying degrees, and impacts assets prices and expectations, as well as the exchange rate.
- These changes in turn effect spending, savings, and investment behavior, which impacts the demand for goods and services.
- Monetary policy works via its influence on aggregate demand in the economy. Monetary policy thus determines the general price level, and the value of money i.e. the purchasing power of money. (Inflation is thus a monetary phenomenon.)
- Changes in the policy rate lead to changes in behavior of both individuals and firms, which when added up over the whole economy generate changes in aggregate spending.
- Total domestic expenditure in the economy is equal to the sum of private consumption expenditure, government consumption expenditure and investment spending. This, plus the balance of trade (net exports) is equal to GDP.
- Monetary policy changes affect output and inflation, as well as inflation expectations. - Inflation expectations influence the level of real interest rates and so determine the impact of any specific nominal interest rate. They also influence price and money wage setting, and so feed into actual inflation in subsequent periods.
- Money supply plays a role in the transmission mechanism of policy, but is not a policy instrument nor a target, as the central bank has an inflation target, and uses monetary aggregates as indicators only.
- There is a positive relationship between monetary aggregates and the general level of prices. From the BOE's paper: “Monetary growth persistently in excess of that warranted by growth in the real economy will inevitably be the reflection of an interest rate policy that is inconsistent with stable inflation. So control of inflation always ultimately implies control of the monetary growth rate. However, the relationship between the monetary aggregates and nominal GDP ..appears to be insufficiently stable (partly owing to financial innovation) for the monetary aggregates to provide a robust indicator of likely future inflation developments in the near term.”
- Shocks to spending can have their origin in the banking system, that are not directly caused by changes in interest rates

– Examples include declines in bank lending caused by losses of capital on bad loans: a credit crunch.

The tools of Monetary Policy are the Policy Rate, Reserve Requirements, Margin Requirements, and more unconventionally, Quantitative Easing and penalty (negative) policy rates.

Money Supply

There are a number of measures of Money Supply, depending on the country, from 'narrow' to 'broad'. Typically they are defined as follow:

- M1 is usually a narrow definition - coins and notes in circulation
- M2 is typically M1 plus short term bank deposits, savings and checking accounts, money market funds, etc.
- MZM - Money Zero Maturity - A measure of the liquid money within an economy. MZM represents all money in M2 less the time deposits, plus all money market funds
- M3 is M2 plus longer term deposits
- Some countries have even broader definitions.

Since Money Stock is relatively constant, each of these measures also has a 'Velocity' associated with it, which needs to be targeted to target inflation - "control of inflation always ultimately implies control of the monetary growth rate" - i.e. Velocity.

What is especially annoying is that the US Fed, in 2006, stopped measuring and publishing M3. I find this very suspicious, as I believe that the DIFFERENCE between M3 and M2 is critical for understanding the monetary forces at play in the economy. The public reason for not measuring M3 anymore was to save money, since the Fed claims that M2 explained everything they needed, and M3 did not add any more explanatory power. To which I answer: "Rubbish", along with some more colorful words.

As you will see later, M3-M2 was on a rocket-like vertical trajectory in 2005-2006. My speculation is that the Fed could not or did not want to explain this, resulting in the cancellation of M3. Had they looked at it more closely, they would have spotted the Financial Crisis brewing. I need to see if they published the minutes of the meeting leading to the cancellation of M3, or whether it was done more surreptitiously.

Japan, on the other hand, also has problems with its M2 and M3 data.

The current measurements were changed in 2003. The prior M3+CD series ended in 1998, and the prior data I have found from other sources is not 'good' - the OECD Japan M3 specifically looks doctored. The data makes it hard to get a good long term view of the issues.

Quantity Theory of Money

Simplistic, but good enough to understand central bank thinking.

$$MV = PQ$$

M = quantity of money

V = Velocity

P = Price Level

Q = Real GDP (quantity of real goods sold)

Since M is usually stable, increasing Velocity will lead to inflation in P, and often, more resources allocated to increasing the quantity of real goods produced. Alternatively, you can increase M by printing money or increasing the Money Supply (QE is one way).

To generate Velocity of Money, the banking system is necessary and critical, as velocity is generated through the Fractional Reserve banking system, through Loans for Productive uses that then recycle back through the

economy.

So, to generate Velocity, Lending is important, as is Productive goods production.

A criticism of the Quantity Theory of Money comes from Paul Samuelson (in reference to assumptions about velocity).

In terms of the quantity theory of money, we may say that the velocity of circulation of money does not remain constant. "You can lead a horse to water, but you can't make him drink." You can force money on the system in exchange for government bonds, its close money substitute; but you can't make the money circulate against new goods and new jobs.

As an alternative, I describe the IS-LM model in [this Crisis Note](#), but you can refer to any Macro Economics textbook. The objectives are similar - Policy Interest Rate management is used to increase money supply through velocity of money.

Targets of Monetary Policy

*** Inflation Target**

There are 3 types of inflation that matter

- Goods Price Inflation
- Wage Inflation
- Asset Inflation

*** Full Employment**

- measuring employment and unemployment is a favorite sport of economists
- the headline unemployment number does not represent reality

*** GDP growth**

- we need to look into the components of GDP growth.
- it is relatively easy for an administration to increase the size of government, but if it is not productive, it will not lead to Velocity of money.

Part 3A: Japan

Japan's Failure to Achieve Desired Results from Keynesian Macro Economic Policies

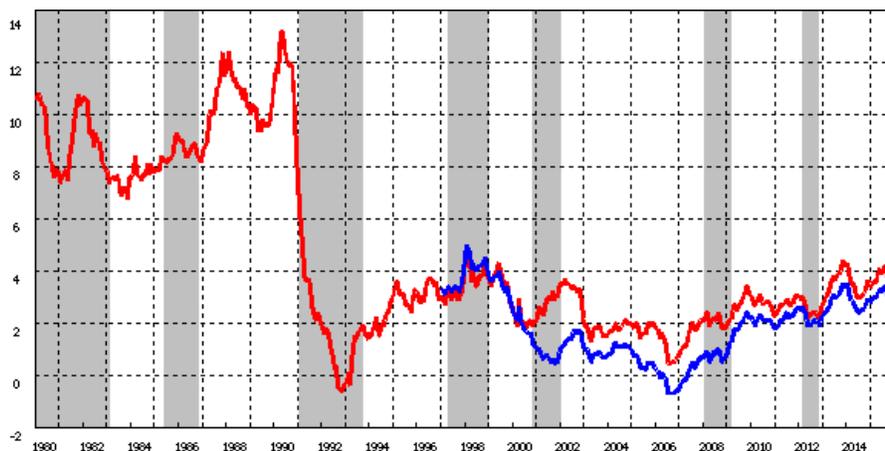
As described above, Japan entered a recession in 1984-1985, and has been struggling to get out of it every since. While official statistics show 6 different recessionary periods since then, in my opinion the entire period from 1989 to the present has been defined by the collapse in the measures of money - M2 and M3 - in 1989. Since then, the BOJ, and the government, have tried every play and trick in the economist's handbook, with limited to negative success.

Here is the official BOJ Japan Money Supply chart with Recession Periods marked.

I have figured out how to estimate the total amount of Japanese capital and money supply exported to the US. I estimate this at at least \$1.5T in 2007, and it is the withdrawal of this money supply and leverage from the US was primarily responsible for converting a US mortgage crisis into a Global Financial Crisis. More on this later.

Graph 49

Japan's Money Supply Measures



Red Line: M2/Percent changes from the previous year in average amounts outstanding/Money Stock

Blue Line: M3/Percent changes from the previous year in average amounts outstanding/Money Stock

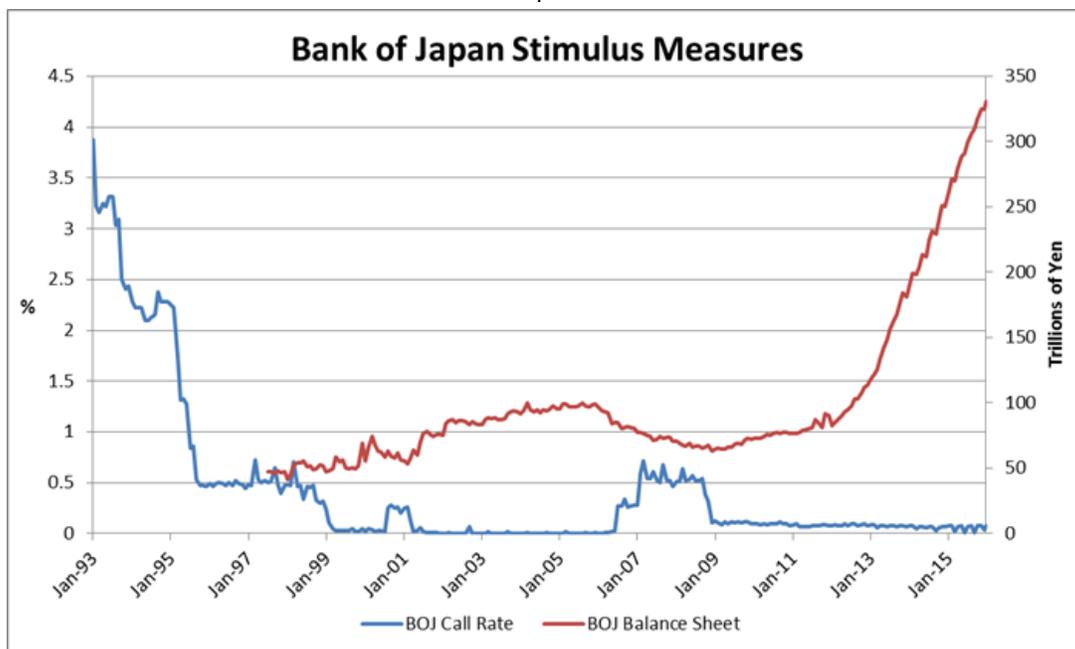
(Former series for data through March 2004)

Source: Bank of Japan

Japan's Stimulus Measures

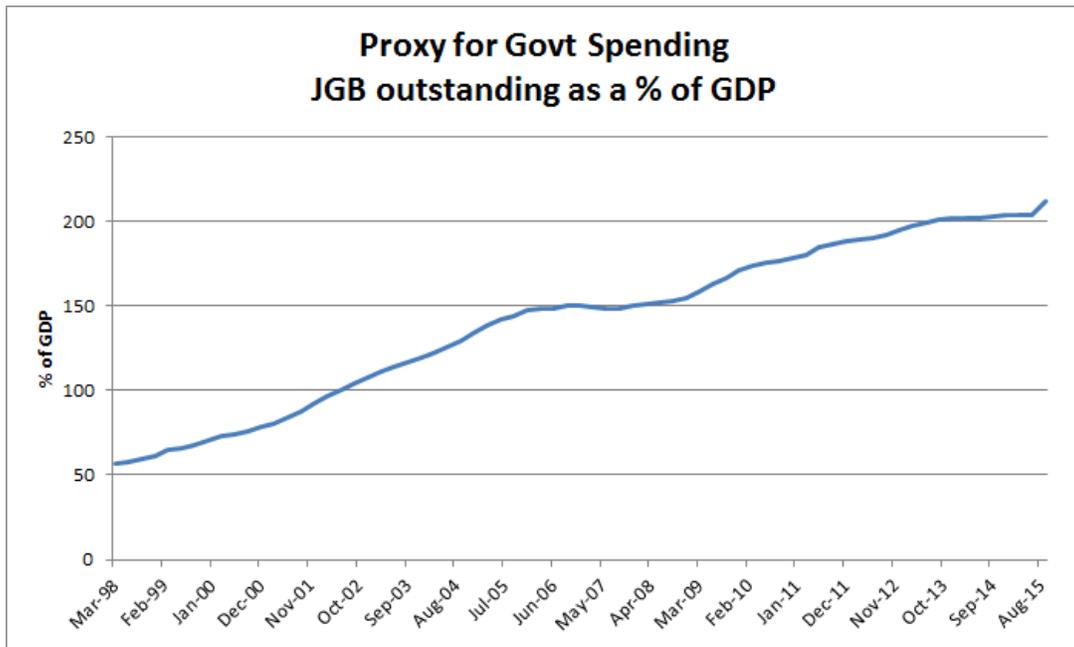
Japan has cut rates, deployed QE, increased government spending, given tax credits to zombie companies (loss making that would otherwise be bankrupt) to maintain employment, spent on unnecessary infrastructure, such as airports and bridges with almost no activity, and most recently, imposed negative rates on excess balances at the BOJ, signaled toughness to weaken the Yen, and reinvigorate exports, created measures to increase direct investment in Japan (Abe's three arrows), and probably others.

Graph 50



Source: Bloomberg, Bank of Japan, MBS Mantra, LLC

Graph 51



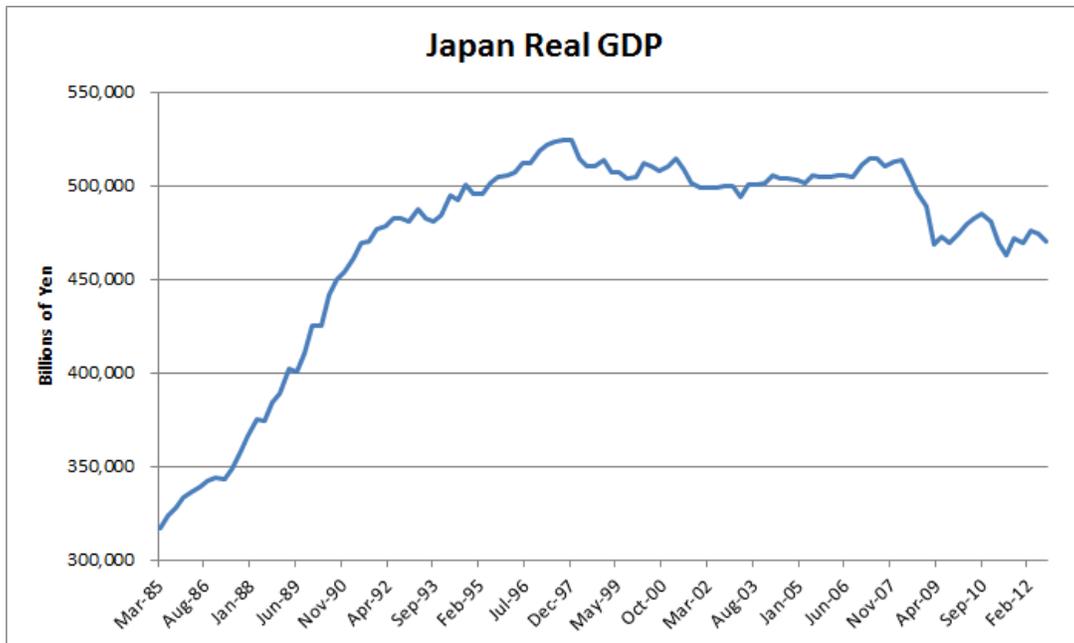
Source: Bloomberg, Asian Development Bank, MBS Mantra, LLC

Economic Results

GDP

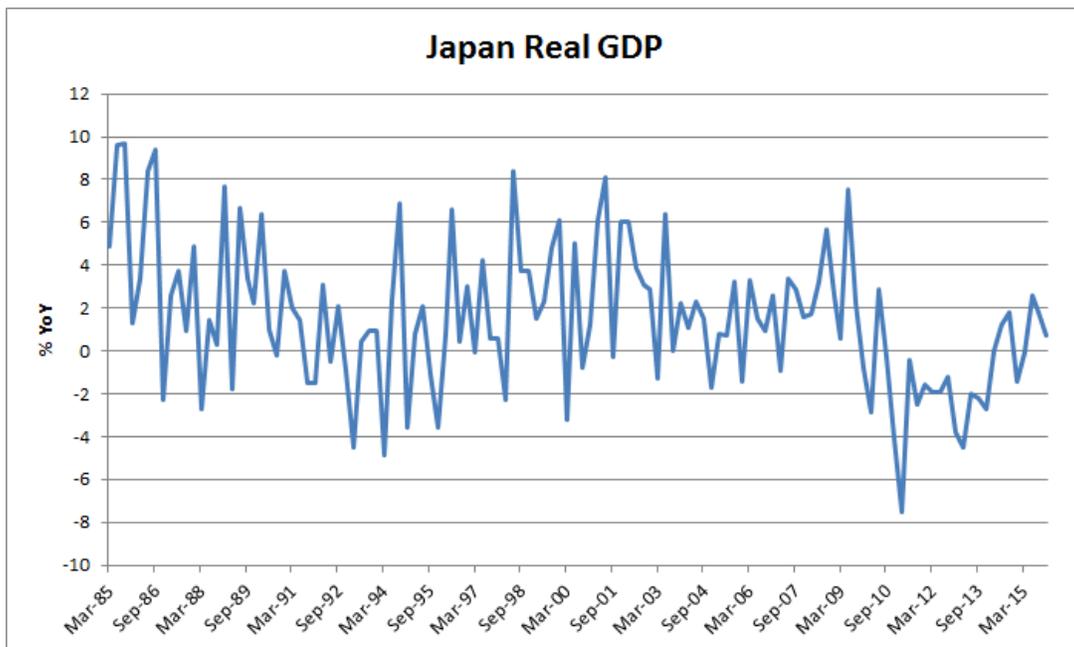
Barely growing.

Graph 52



Source: IMF, Bloomberg, MBS Mantra, LLC

Graph 53

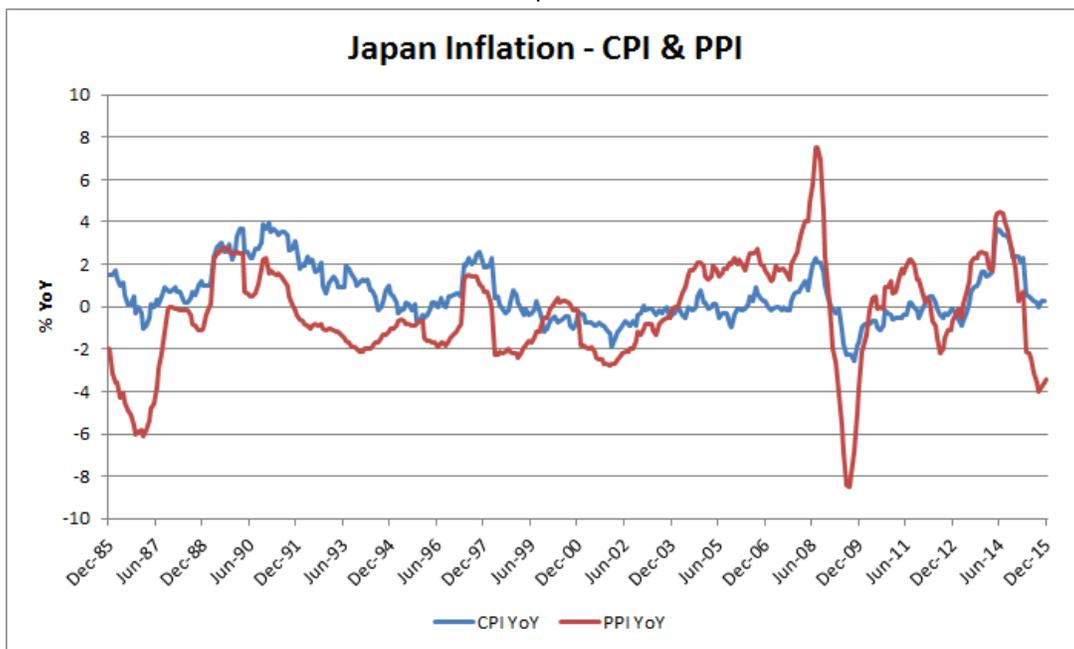


Source: Bloomberg, Economic and Social Research Institute Japan, MBS Mantra, LLC

Inflation

Precariously balancing between inflation and deflation.

Graph 54



Source: Bloomberg, IMF, BOJ, MBS Mantra, LLC

Wage Growth

Also balancing around zero - no wage inflation, in spite of many policies to support employment, and an aging population, reducing the work force.

Graph 55

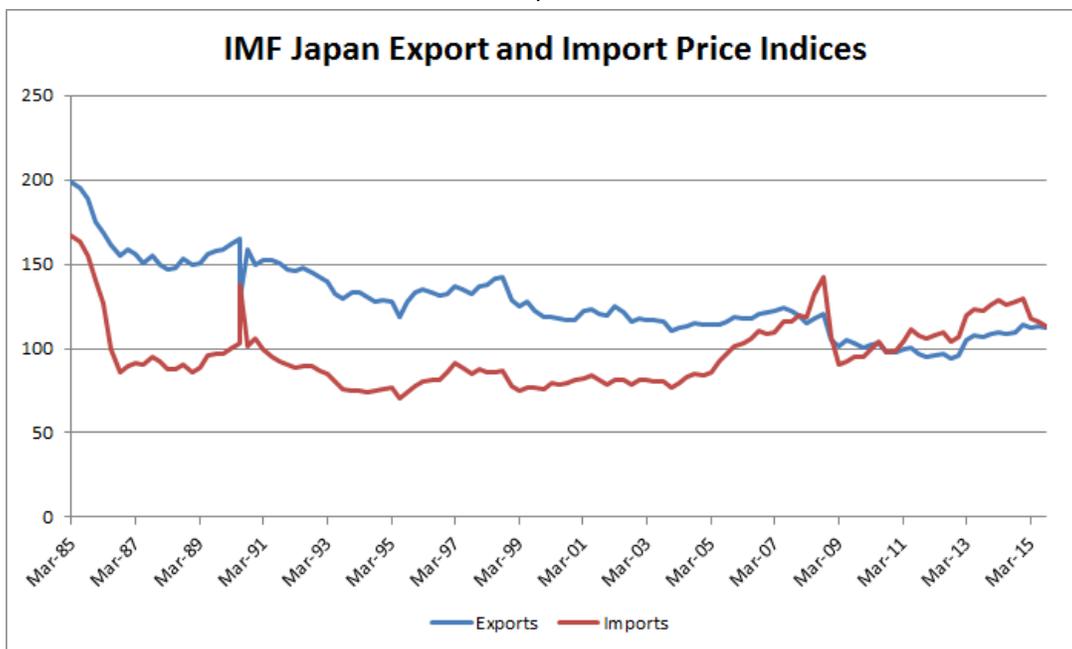


Source: Bloomberg, OECD, Morgan Stanley, MBS Mantra, LLC

Exports, Imports, and the Yen

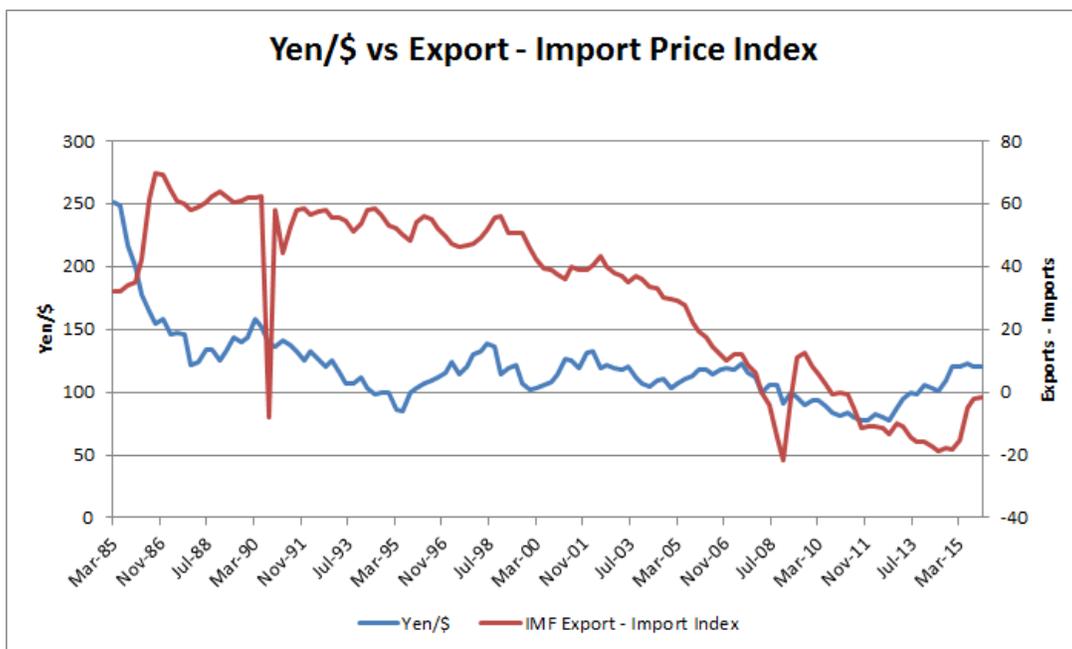
Japan has recently been trying to weaken the Yen, to stimulate exports. The only impact this has had is to increase import prices in Yen. There are reasons why export demand is not picking up sufficiently, and it has to do with the carry trade, but I will describe that in a later section.

Graph 56



Source: Bloomberg, IMF, MBS Mantra, LLC

Graph 57

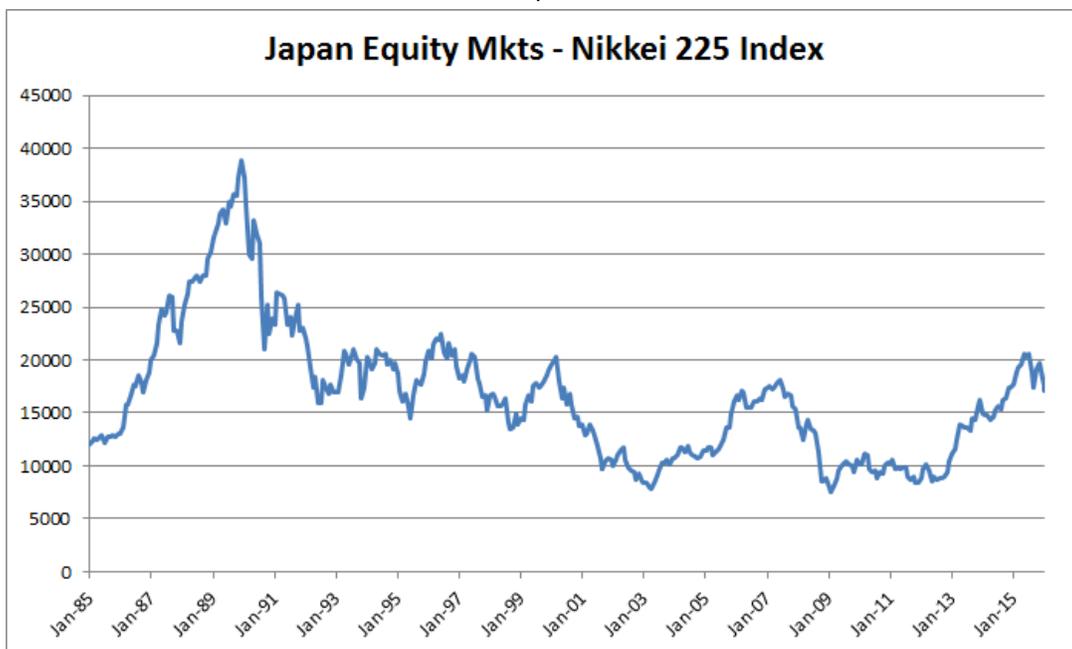


Source: Bloomberg, IMF, MBS Mantra, LLC

Financial Assets - Nikkei 225 Stock Index

On a downward trend, in spite of many local rallies. There are many other financial assets I would have liked to look at to assess the impact of stimulus, but most of them - real estate, for example - appear to have governmental policies distorting demand, supply, and economic use.

Graph 58



Source: Bloomberg, MBS Mantra, LLC

Conclusion - Japan

The trends displayed in the preceding sections would lead one to conclude that Japan's economic future looks bleak, in spite of so much "Stimulus" being directed at its economy. This raises 2 questions:

- Why does Japan insist on continuing with "Stimulus" and currency weakening?
- Where is all the "Stimulus" going?

The answer to the first question has been given to me by my friend, Manish Aurora of [Rational Investing](#), who has been thinking about, has modeled, and has been trading the Japanese Stock Market.

Paraphrasing him:

" The trouble is, Japan is 100 mm people on a few islands, and if they allowed their industrial base to hollow out, the country would become indefensible without projecting military strength throughout Asia, not to mention a banking system with significant resilience and reach as well."

In other words, Japan has no choice but to do whatever it can to survive or at least maintain the status quo, and if that means going into a bottomless pit of debt in order to remain a net exporter (so as to preserve its factories), it will do so.

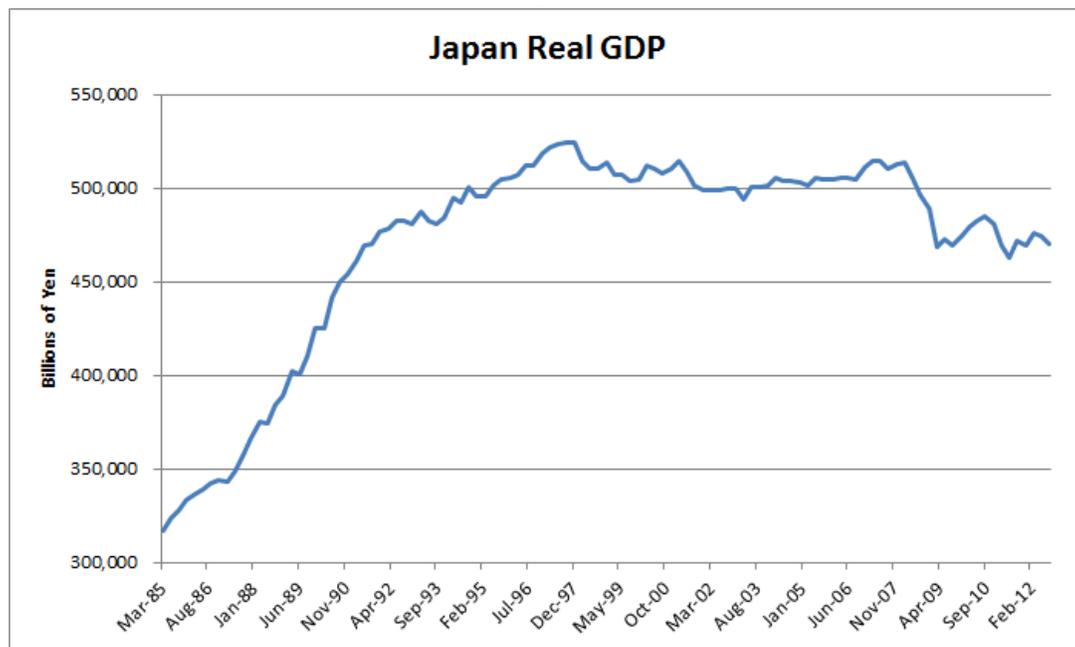
The answer to the second question should be obvious from the first section - the Japanese Stimulus has been escaping Japan through the Carry Trade, as well as through the BOJ's purchases of Sovereign Bonds of other countries, providing unanticipated and uncontrolled Stimulus to other countries.

Part 3B: Following the Money - Where has Japan's Stimulus gone?

GDP

Let's look at Japan's GDP again. As you can see, its growth flat lined after 1994-1995, which is around the same time that the Yen Carry Trade started being implemented in the US. Co-incidence? Not! Read on.

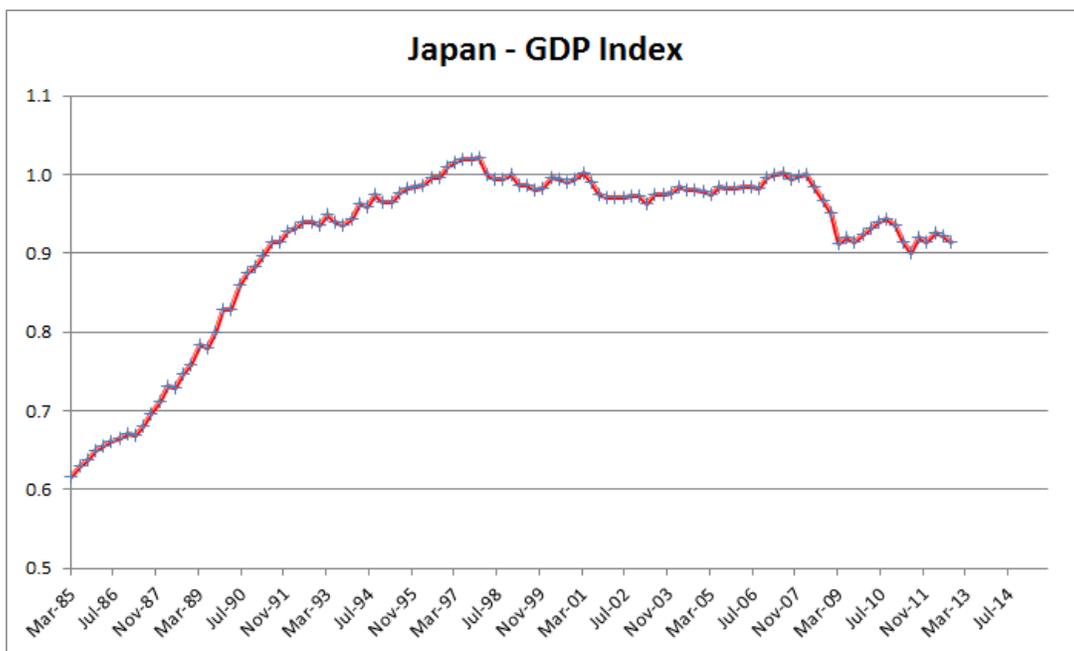
Graph 59



Sources: IMF, Bloomberg, MBS Mantra, LLC

I created an GDP Index, indexed to 1.0 starting in December 1998, to allow comparisons with other countries.

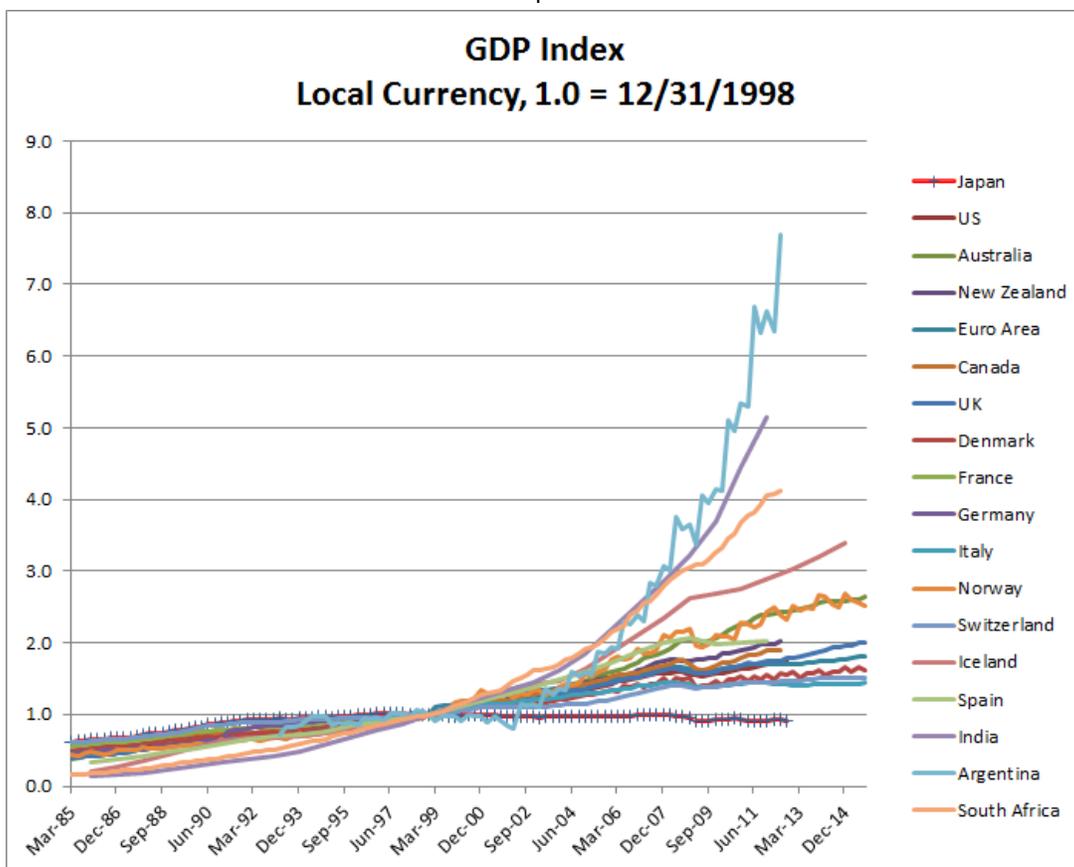
Graph 60



Sources: IMF, Bloomberg, MBS Mantra, LLC

Let's compare Japan's GDP to that of a few other countries. (The country at the top, BTW, is Argentina.)

Graph 61



Sources: IMF, Bloomberg, MBS Mantra, LLC

If you look closely, in the pre-crossover period, you can see that Japan's GDP Index was higher than that of all other countries in the chart above. Yet, it has stalled since then. **I find this truly shocking! I have yet to find another country that has not grown (in GDP terms) since the mid-1990s!**

How is it that no economist is screaming about this? Is everyone in finance and economics now so

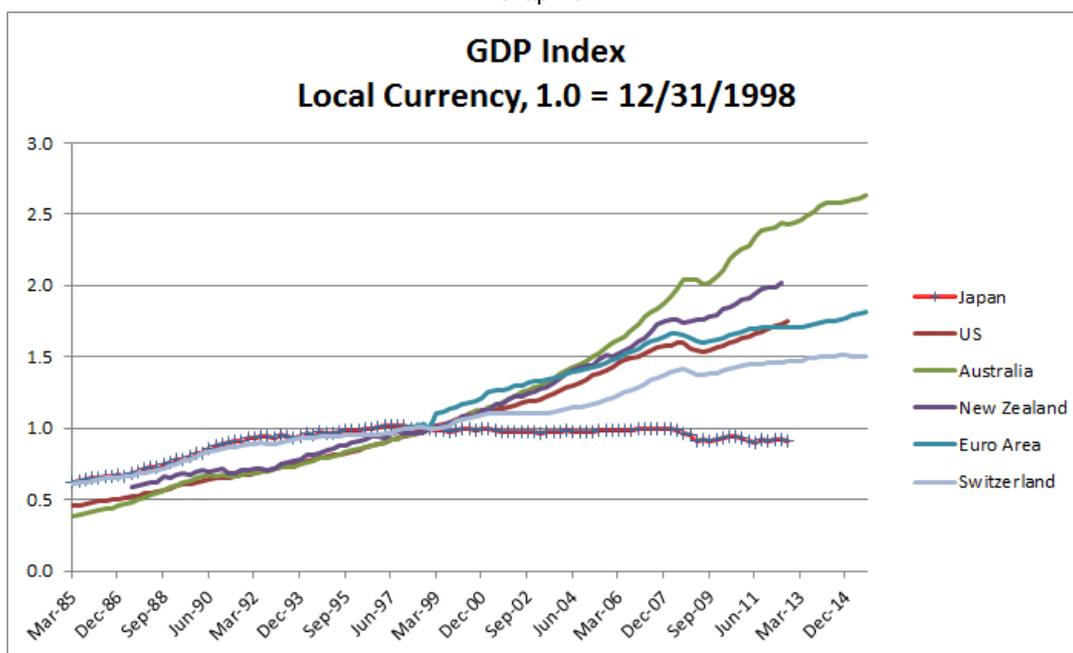
specialized that they cannot or do not look at the big picture? If, as we have all heard for decades now, that all economies are linked, and a rising tide lifts all boats, etc, this should not have happened. Unless, of course, Japan is on the opposite side of a monetary fence from the rest of the world!

Japan's divergence from the rest of the world, to me, has been one of the greatest mysteries of the modern economic world. I believe I have identified the problem - Japan's export of capital to fund carry trades has reduced its economic potential.

Improving the granularity of the chart above, one can see that the countries that are generally considered to be 'carry economies' (including the US) have done very well over this period, in comparison to Japan.

I include Switzerland as I view it as a country that is similar to Japan in many ways. You can see that prior to 1995, its GDP Index was in line with Japan's. I believe, that under "normal" circumstances, Japan's post-1995 economic performance should have been similar to Switzerland's.

Graph 62

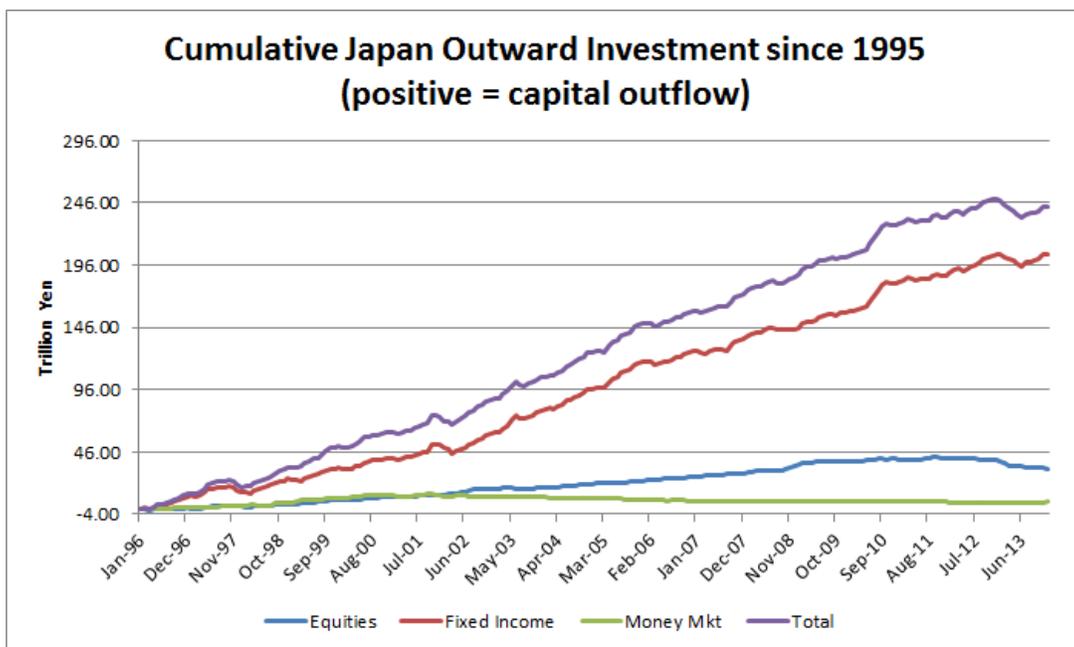


Sources: IMF, Bloomberg, MBS Mantra, LLC

The next chart is repeated from above: Japan's Outward Investment since 1995. Unfortunately, the data series only starts in 1995, so cannot see what the Outward Investment was prior to advent of the Yen Carry trade. But, we can see that the majority of it was Fixed Income.

Thinking about this as percentage of GDP jolt you! **The current cumulative outward investment is greater than 50% of Japan's real GDP! This is a huge amount of capital to have fled the country. By comparison, US QE is approximately 25% of US GDP.**

Graph 63



Sources: IMF, Bloomberg, MBS Mantra, LLC

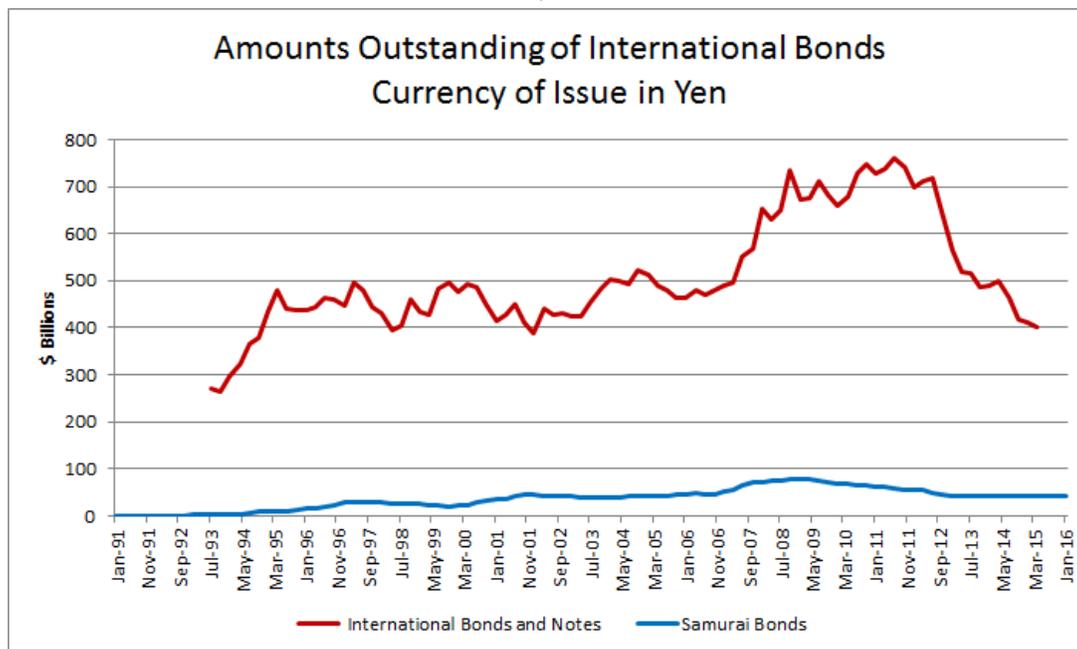
The next chart shows the total outstanding amounts of Yen Denominated International Bonds and Notes issued (source: BIS). **Here, we can see the significant jump in issuance starting in 1994 that was missing in the graph above, coinciding with jump in YCI and SCI.**

I have not found this data source denominated in Yen. To understand the scale and impact of these numbers, consider: \$250B around 1994 at $Y80/\$ = Y20T$; \$500B around 1996 @ $Y100/\$ = Y50T$.

While this might seem small relative to Japan's money supply of $Y500T$ to $Y1000T$, it is still a substantial amount of money to escape an economy. Don't forget, 1% of lost GDP, when GDP is $Y500T$, is $Y5T$; the outward investment is multiples of that. If $Y50T$ could earn 5% per year, that would amount to $Y2.5T$; or 0.5% of GDP growth, without any velocity associated with it!

In terms of its impact on markets, please revisit the Tiger losses from 1998: \$2-5B loss for Tiger, on an estimated \$10B position in equities resulted in a 4% to 7% strengthening in the Yen, and a 9% loss in the S&P. **The marginal Demand, Supply and Trading of Capital has a huge impact on market prices and currencies.**

Graph 64



Source: Bank of International Settlement (BIS), FRED, Bloomberg, MBS Mantra, LLC

Identifying Capital Export in Japan's Money Supply

The next step in our analysis is to see if we can identify this exported money in Japan's Money Supply data.

First, let's make Money Supply easier to understand for non-economists.

M1, M2, and M2Z are all relatively short duration forms of money and easily accessible. People, in general, keep money for transactions - day to day living expenses, working capital for businesses, etc. This is the money that is used daily in the domestic economy.

I call these shorter variants of money "Transactions Money".

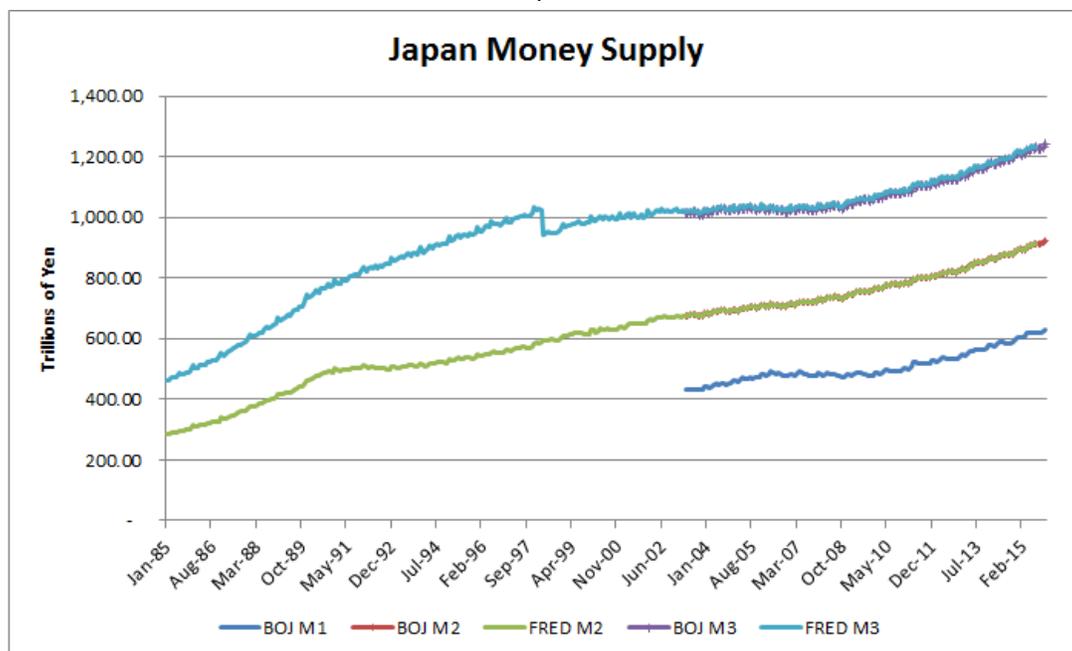
M3, on the other hand, includes money that takes more time to convert into M1, M2 or M2Z. It includes saving and large denomination accounts, including institutional accounts. Most institutional cash holdings will be found in the difference between M3 and M2. While some of it will also be working capital for large businesses (which should be a relatively stable percentage of this money), much of it is money that flows in and out of investments, or is reserved for investment, and is a form of liquid capital. Changes in M3 should reflect investment flows.

I thus call the difference between M3 and M2 "Investable Capital" or "IC".

In a closed economy, any increases in Investable Capital should indicate savings growth through profits from economic activity. **Any declines in Investable Capital would indicate either conversions of Savings into Transactions Money, i.e. people spending more than they make, or the making of actual investments, which can be domestic, such as equities or domestic real estate. However, in a global market for capital the alternative reason for such declines in IC could be Capital Export.**

It should be noted that this analysis that follows is hampered to an extent by inconsistent data series and time periods provided by different sources. BOJ's M1, M2 and M3 for example, starts in 2003. There is an older M2+CD and M3+CD BOJ version that started in 1998, and a few sources have M2 and M3 older than that, without explanations of what they are. I am going to use the numbers provided by the St. Louis Fed in the FRED database. The FRED M3 data is very close to the official BOJ data after 2003, while the M2 is identical.

Graph 65



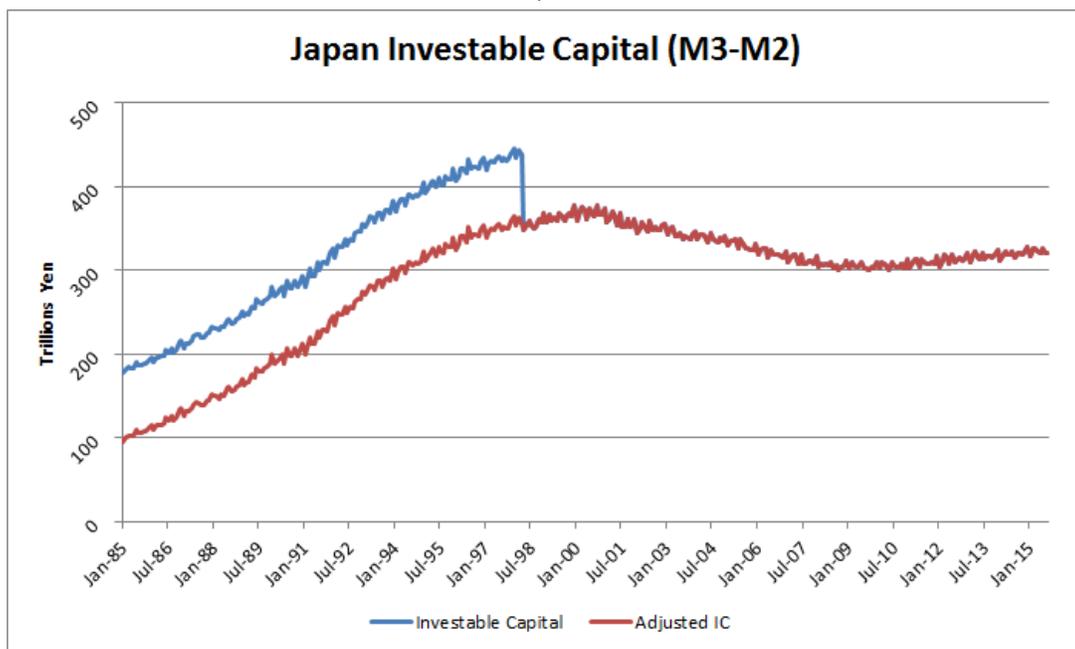
Source: Fed, FRED, BOJ, Bloomberg, MBS Mantra, LLC

As defined above, the difference between M3 and M2 is 'Investable Capital'. This gives us much more information

than just looking the M2 and M3 raw data, as it easier to see when Investments are increasing or declining.

The decline in M3 in April 1998 is from a change in the definition of M3, I assume, and I scale the M3 prior to April 1998 downwards to join the new post-1998 M3, resulting in Adjusted M3 (not shown) and Adjusted IC.

Graph 66



Source: Fed, FRED, BOJ, Bloomberg, MBS Mantra, LLC

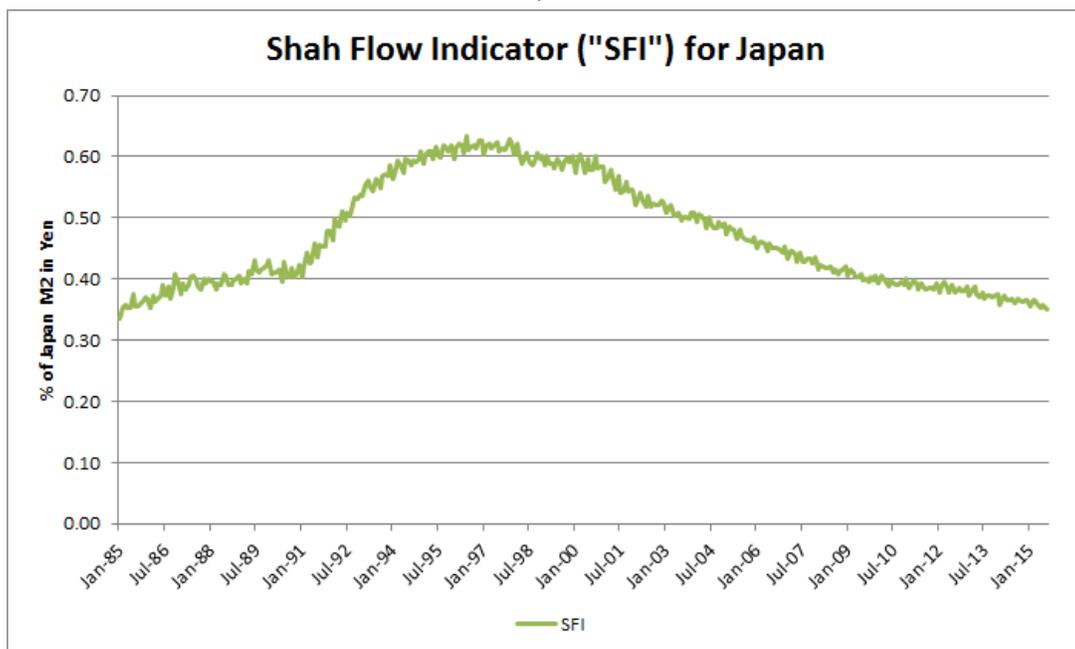
Since M2 and M3 are usually increasing, one would expect the IC to increase with them.

The ratio between IC and M2 is gives us an indication of the money supply flows in and out of IC.

I have not seen anything like this measure being used before, and will call this the Shah Flow Indicator ("SFI").

The next graph shows us the SFI for Japan.

Graph 67

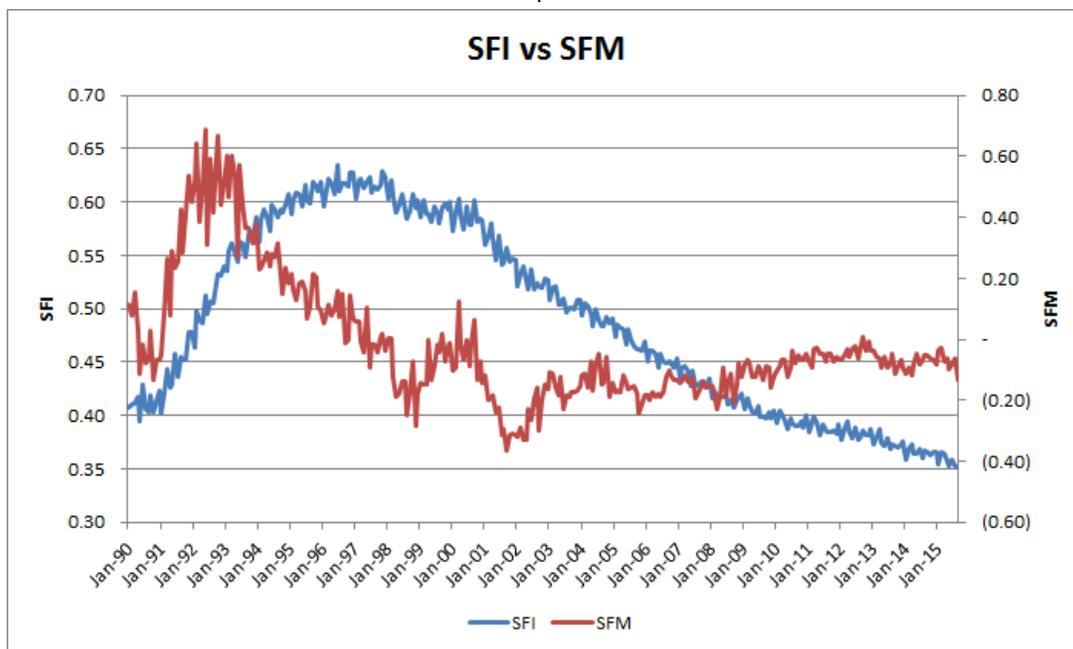


Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

In order to magnify changes in this indicator, I also estimate the 'slope' at every point, using the annual change of SFI.

I call this the Shah Flow Momentum Indicator - "SFM".

Graph 68



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

If these indicators have meaning, they should correlate with activities in the investing world in the following ways:

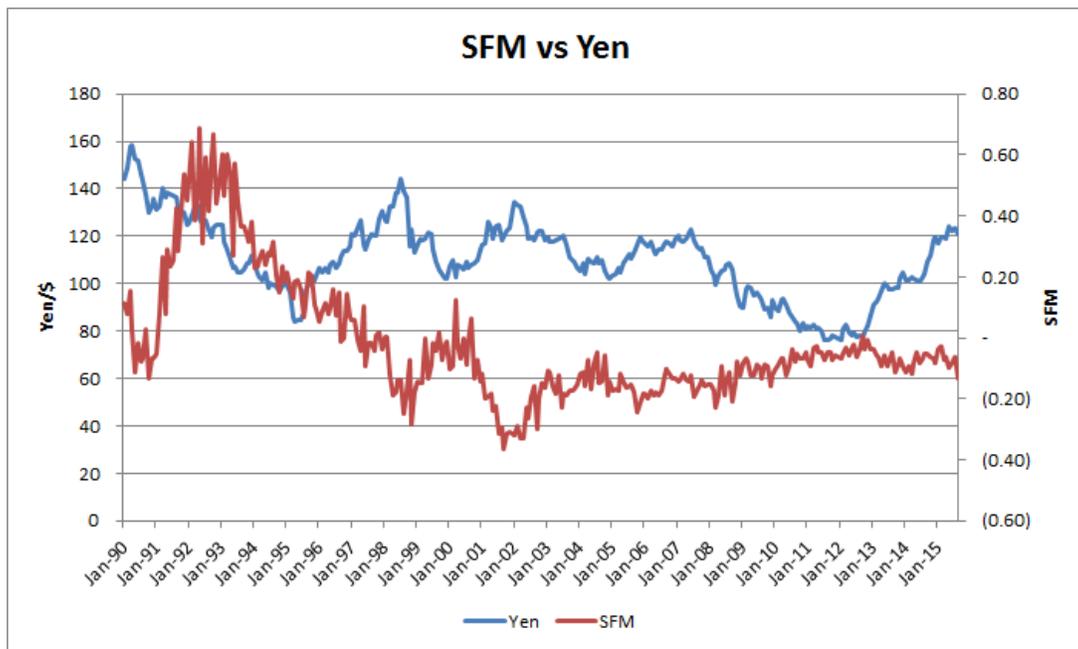
- Increases in SFI indicate inflows into M3 money from investments. SFM would also be increasing.
- Decreases in SFI indicate outflows from M3 money into investments.
- Declines in SFM indicate a slowing down of inflows into SFI and vice versa.
- Domestic investment flows should not impact the currency significantly.
- Overseas investment flows would impact the currency.

For example, increased QE by the Central bank would increase M3 and possibly M2 to a lesser extent, and thus IC, increasing SFI. However, if this money is exported SFI would not increase as much, and might even decline. This would have an impact on the currency, which would weaken. The net Outward Investments data would also corroborate this.

So looking at multiple indicators and the currency (or exchange rates with many currencies) together is necessary to give a fuller understanding of the forces at work, as opposed to any single measure.

This next charts, showing the SFM-Japan vs the Yen, should boggle the mind.

Graph 69



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Lets think about the graph above, and the importance of SFM for a few minutes.

SFM is a highly derived number, extracted out of hiding from within money supply, that no one, as far as I know, has thought about before. It is a result of the **FOURTH** mathematical operation on M3 - first, we subtract M3 from M2 (IC), then take a ratio to M2 (SFI), then lag and divide it by time to create SFM.

1) This graph is proof that Macro policy does not work, at least for Japan, since there is such a strong relationship to the currency. If Macro Economics is working, then ISLM-type Policy implemented by Central Banks should perfectly impact only the local economy, and not the currency. In which case, I would expect the SFM to only show noise, and not be related to anything, except to show M3's linear growth with M2.

One might argue that a central bank might flood the market with money to weaken the Yen to stimulate exports. If that were the case, unless there was serious excess capacity, IC and SFM would go down in tandem as factories are invested in to meet the export demand. And exports would have gone up. We have seen that exports in Japan have remained flat. Yes, flooding the market with cash does weaken the Yen, but only as the Yen itself is converted to other currencies and exported. If the Yen is not exported, due to say currency controls, then the exchange rate would not change, you would get inflation instead.

I view currencies as a price - the exchange rate is fundamentally set by demand and supply forces on that currency, which are driven by IC in Japan.

2) As I will show below, SFM identifies changes in capital flows, and thus validates my thinking that the Carry Trade is the most powerful force in Economics. The FED has certainly not thought of it, else they would not have eliminated M3 in the US. Or maybe they did find it!

3) That there is any relationship at all to a currency proves that Carry Trades exists, and in addition, that the Carry Flows dominate money supply movements.

4) This chart summarizes the recent story of Japan's economy. From it we see that:

- prior to 1995 the SFM had a different relationship to the Yen; in 1994, something changed.

- the Carry Trade started around 1994. This connects Japan's money supply post-1994 to many of the charts and correlations I have shown above. Starting in 1995 (due to the lag), SFM, and thereby SFI, have a close relationship with Yen, implying most of the changes in IC come from changes in flows between Japan and other economies.

- the strong relationship to the Yen-Dollar cross suggests that the US was a large recipient of Carry from Japan

- the relationship changed after 1998-1999, again in 2008, and then again in mid 2012. However, they are still related, only the coefficients of the relationship have changed.

The change in the relationship between SFM and Yen/\$ probably reflects a netting of currency flows versus investor flows:

The following are the likely counteracting forces that change the strength of the SFM-Yen relationship:

a) substitution of another country for Yen outflows from the US, rather than repatriation to Japan - very likely. For further analysis I might look into the commodity and BRIC countries and currencies - Australia, Canada, etc;

b) 2008-2012: BOJ's UST holdings more than doubled, while at the same time, Japanese investors were withdrawing capital from the US. The Bank of China too is a large holder of USTs. These are both sources of additional QE.

The post 2012 period is complicated, with many counteracting forces impacting the Yen and SFM, changing the strength of the SFM-Yen relationship multiple times.

c) Starting 2012, Abenomics kicks in, dramatically increasing the BOJ's balance sheet and holdings of JGBs. If done purely internally, this should have resulted in an increase in IC and SFM for Japan. However, Abenomics also explains the spike in the Nikkei Index, which would reduce IC. I suspect that the rhetoric also resulted in substantial speculative selling of the Yen, as Abe wanted to boost exports. This combined resulted in a net reversal and decline in SFM, but at a lower rate than we would have expected from the prior relationship.

The weakening of Yen/\$ would suggest that this money landed in the US. The Fed also embarked on QE3. It is thus hard to separate the causes for the resulting spike in the S&P. This would be something interesting to investigate later.

It is also possible that my definition of SCI is not fully correct, as I do not subtract the high Cash balances at the Fed that would reduce the impact of the Fed's Balance sheet. So it is possible that flows from Japan are still driving the US Stock Market. This is identified by the Yen - in spite of negligible YCI, they might have been attracted by the signalling effect of US QE.

d) post 2013 - BOJ reduction of UST purchases and holdings - which should have strengthened the Yen.

e) post 2012 - Abenomics creating some \$-carry from US hedge funds betting on Japanese Reflation, which should have strengthened the Yen/\$, but not enough to overcome the Japanese outflow of capital, the net result of which was continued Yen weakening. In addition the Japanese might still be exporting capital to other countries, which would result in IC and SFM decreasing in Japan.

f) 2015 - Japan reducing its UST holdings (resulting in negative swap spreads in the US), which should strengthen the Yen.

5) We are looking at only a single currency in terms of the Yen - the US dollar - and that currency's price, Yen/\$, is already showing a stunningly high correlation to (Japan's) SFM, even without the addition of more explanatory variables.

To get even higher correlations, or to model Japan's SFM exogenously, one would need to capture and regress SFM against every possible source of investment and de-investment of M3:

- every carry currency - 15 to 30 maybe

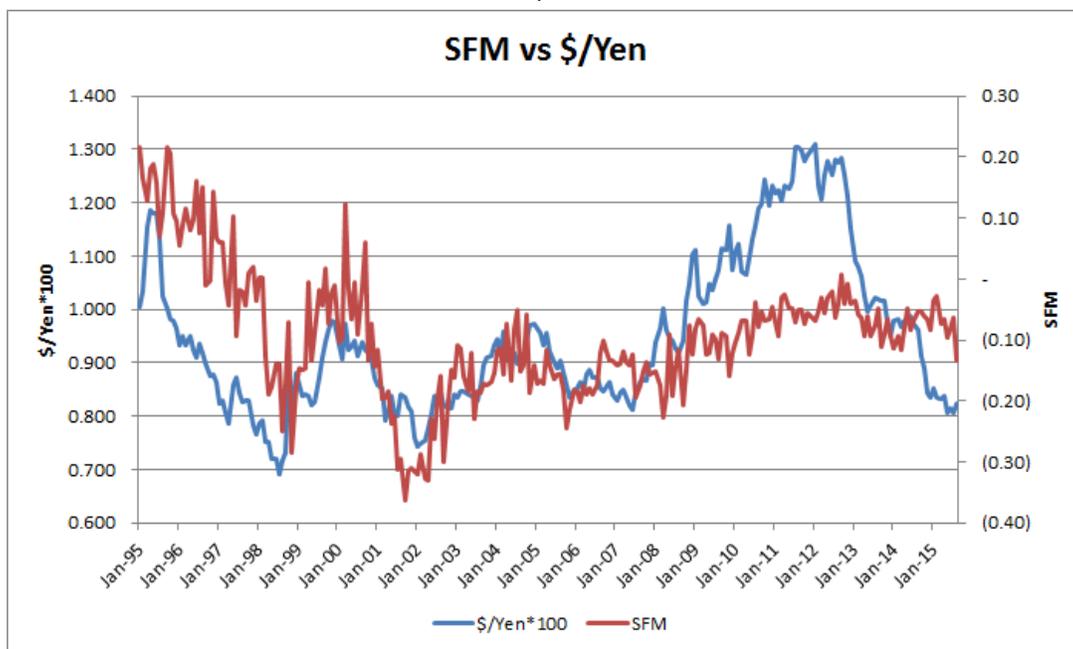
- every source of Japanese domestic investment - equities, real estate, etc.
- every large ticket Japanese luxury purchase - Ferraris, boats, etc - that might be permanent withdrawals from Investible Capital
- every capital project within Japan
- direct overseas investment.

Alternatively, to model only the Yen/\$, one would need to isolate and subtract out these other factors from the SFM, to isolate the Yen-\$ Carry components only. A future research project.

Also, do not forget that the data and SFM are far from perfect - I have at best monthly data, (which means that the majority of the data points are missing - daily data is not available for most economic indicators), and thus also likely to have month-end and quarter-end artifacts. In addition, there are lags everywhere in this data, from different reporting periods for the components of M2 and M3; the 12 month lag chosen to estimate the slope of SFM (simply chosen to match the YoY used for most economic indicators); and the likelihood of numerous estimates and statistical techniques being used to generate M2 and M3 in the first place. So, please don't expect forensic precision with this tool - its pretty blunt!

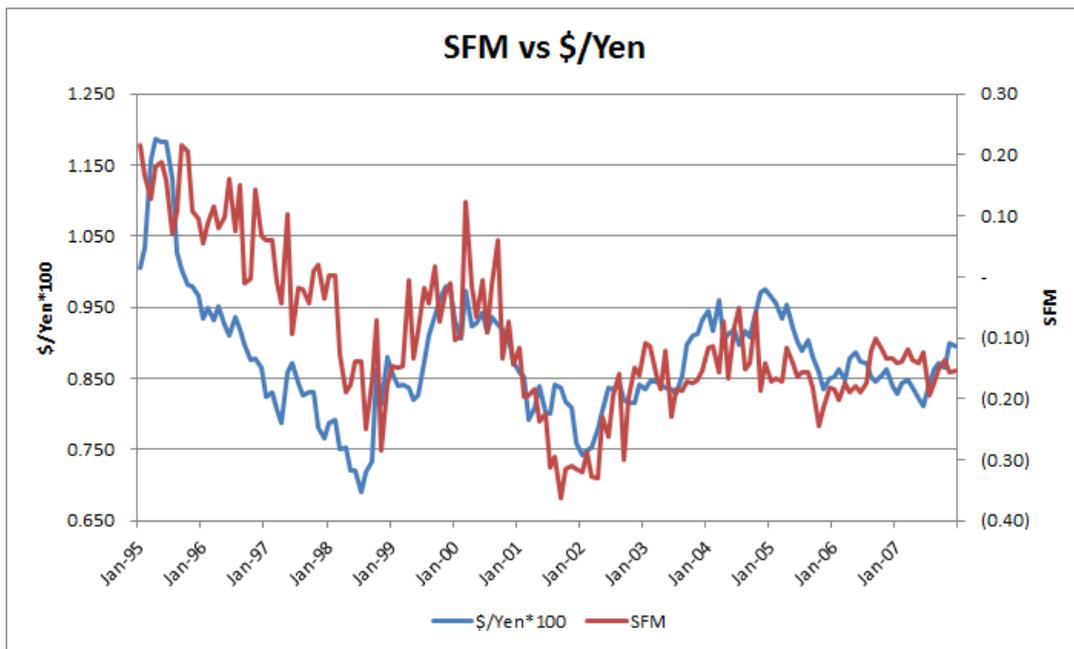
Below are more charts showing SFM-Yen broken into various periods to better see the changing relationship, with the Yen/\$ inverted for those that cannot see the inverted relationship in the graph above.

Graph 70



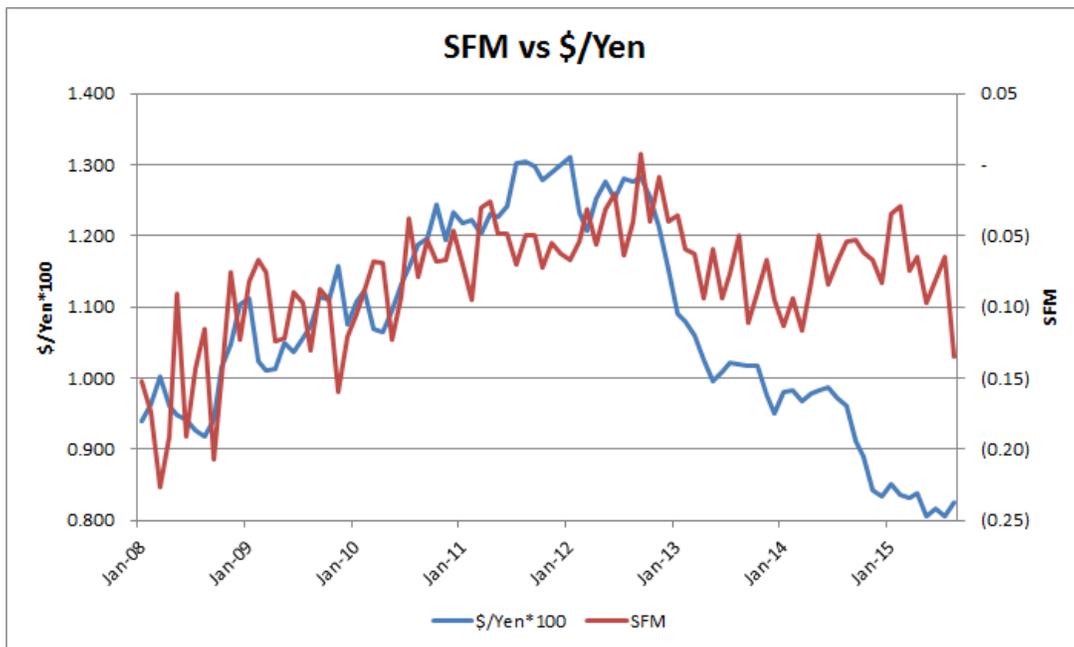
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 71



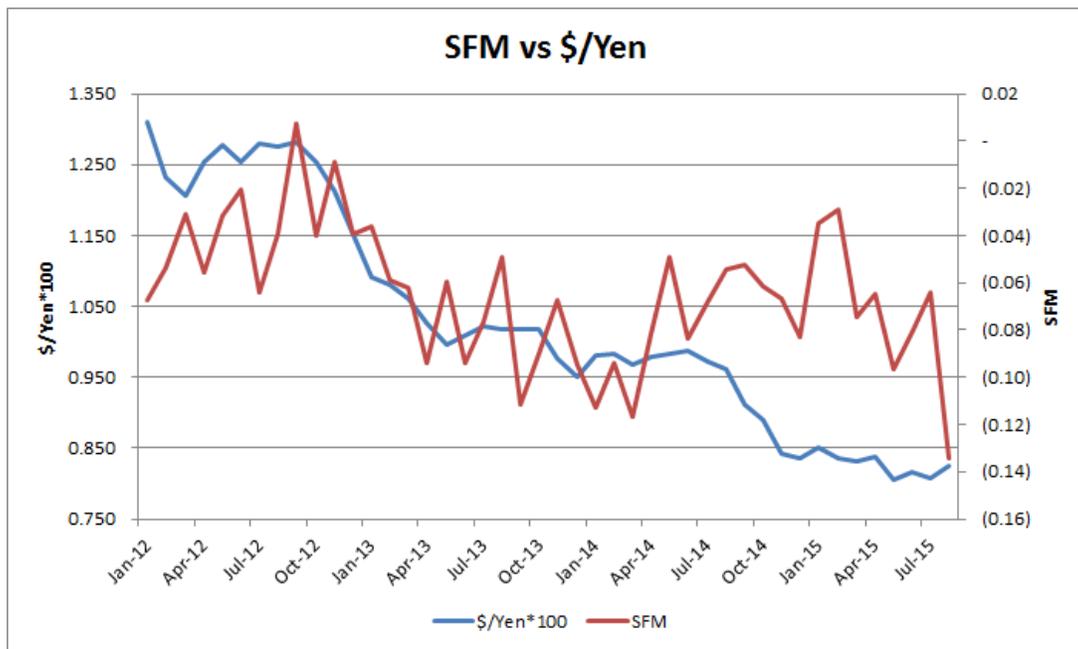
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 72



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 73



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

1990 to 1998.

The charts that follow show 1999 as well, to overlap with charts for the subsequent period. Economically, 1999 belongs to the 1998-onwards post-Tiger period, that alerted the world to the Yen Carry Trade, and increased the demand for Yen Carry.

In the 1980s, the SFI was stable in the 35% to 41% range. A major jump in this indicator occurred in June of 1991. This was shortly after the Nikkei peaked in 1990 (at 38,915) and started declining (to 14,309 in 1992). When the BOJ confirmed Japan's economic problems by cutting its Call rate, in June 1991, from 6% to 5.5%, Japanese investors appear to have been scared out of domestic investments, like equities, and into IC, explaining the rise in IC to an unprecedented 60%!

SFI averaged 61% in 1995, reached 63% in multiple months in 1996 and 1997, and started declining in 1998.

The NKY index has remained range bound between 15,000 and 20,000 post 1992, with local rallies and selloffs (it is not like all of Japan stopped investing in the NKY; people still reacted to local economic data as well as policy changes and incentives). Yes, this is a 30% range, but it pales in comparison to the reaction of the US S&P index, which tripled by 2000, once Yen Carry started influencing it in 1994. If there are localized changes in IC from changes in local investments, they are being dominated by movements in the Yen and overseas flows.

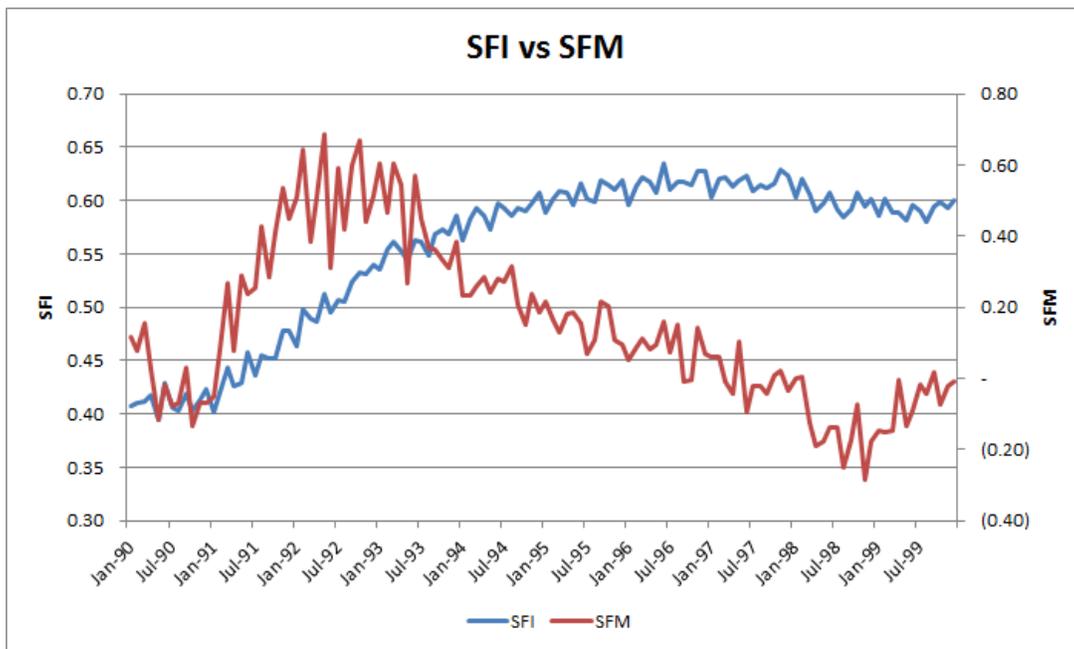
SFM is quite well correlated to the Yen post-1995 with low correlation to the Nikkei - the increases in IC do not appear to be reverting back significantly into Japanese equities.

The SFI corresponds well with the increase in Outflows in the FOF accounts, and is corroborated as the Yen started weakening in 1995, from 106, and did not stop weakening again until it hit 147 in August 1998 - when the Asian Flu and then the Russian Crisis occurred, and Tiger Management blew up!

The 1998-2000 strengthening in the Yen, with a corresponding turn in the SFM, and the de-correlation to YCI, probably has to do with net return of capital from non-US carry markets after the 97-98 Asian Flu, as most of these carry-receipient countries likely cut their rates, reducing the YCI-x for each country. The impact of this return of Carry Capital probably dominated the impact on the Yen of the resumption of Samurai issuance in 1999 (which did respond to the increased YCI-US).

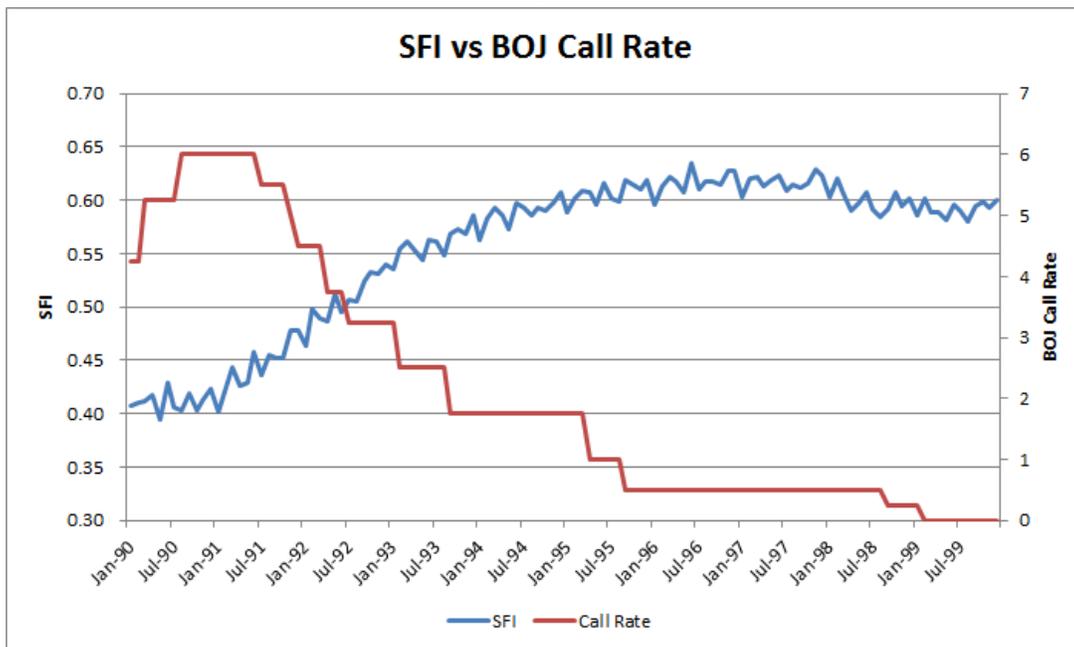
You may want to print out the next chart, so you can look at both SFI and SFM as you look at the charts that follow.

Graph 74



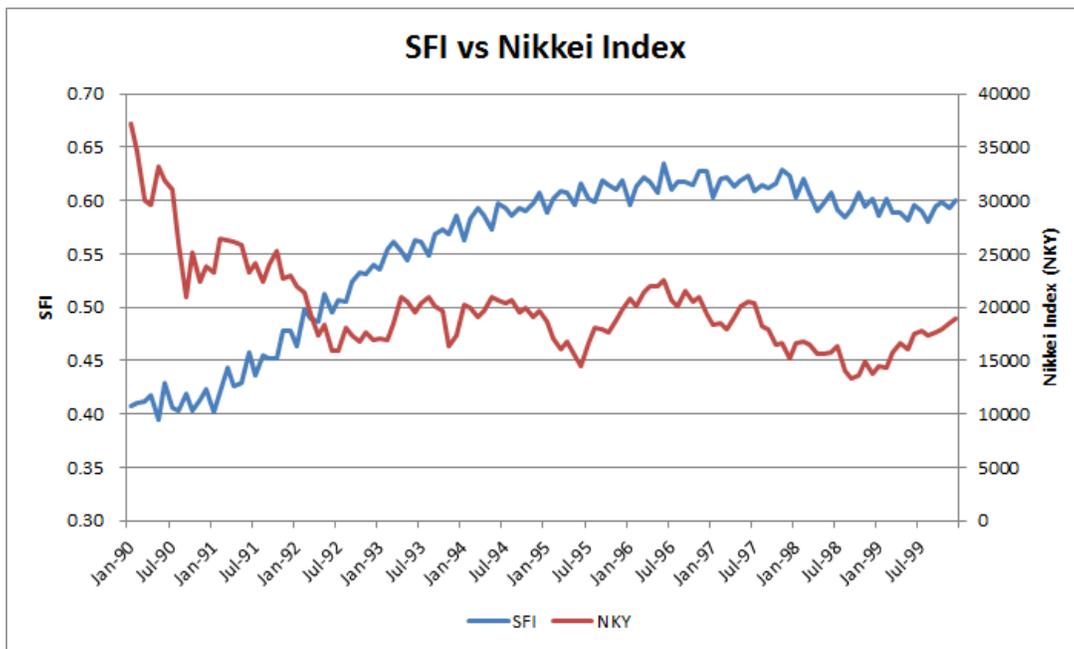
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 75



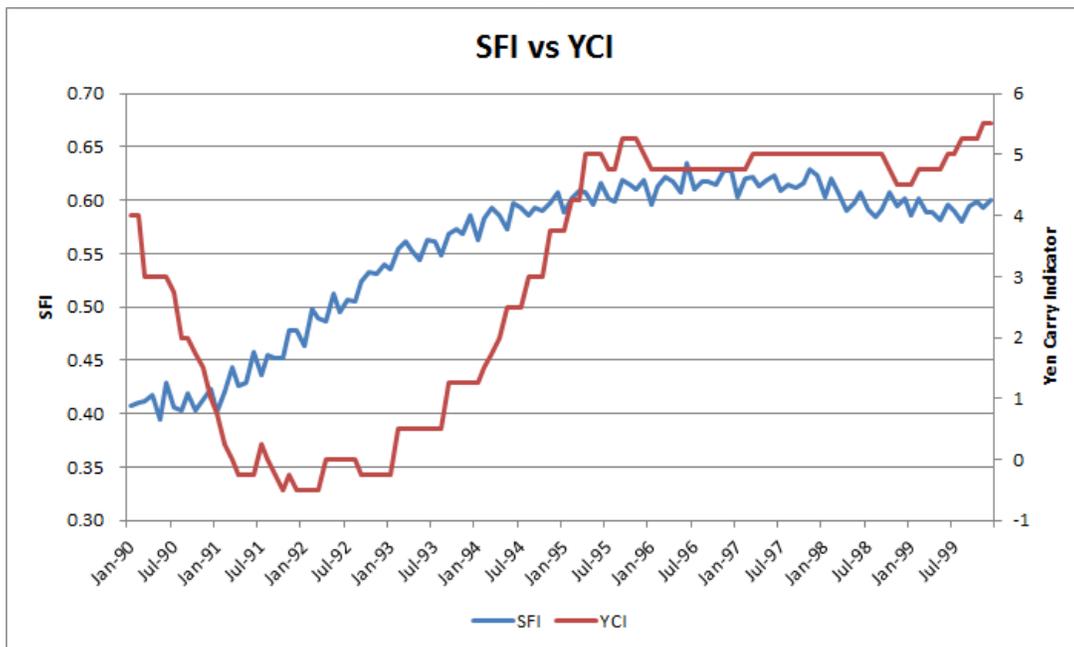
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 76



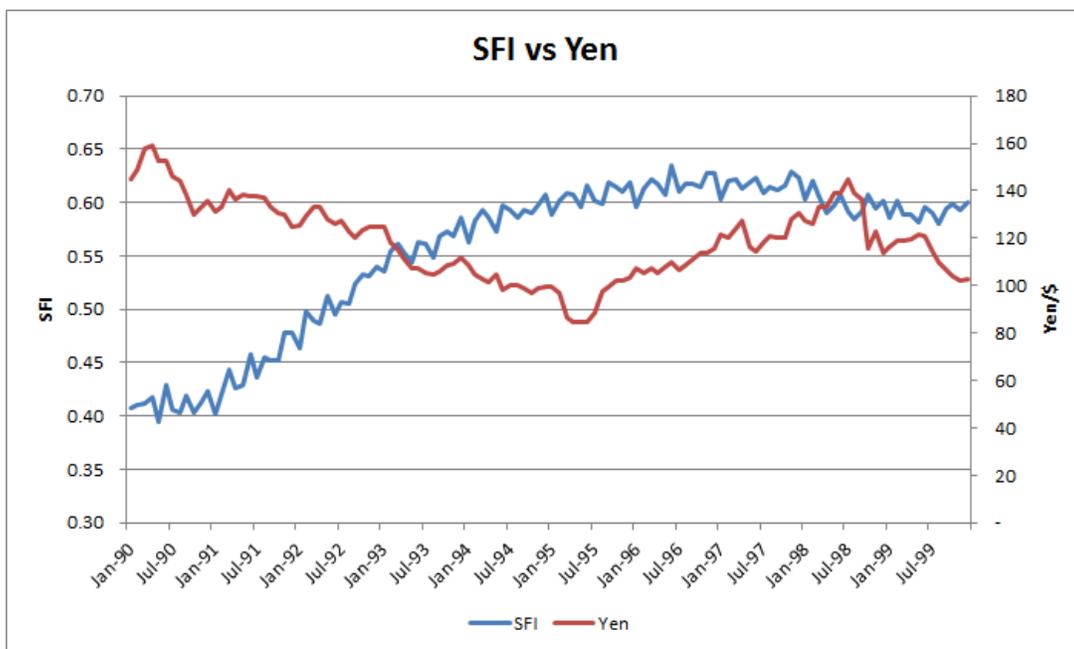
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 77



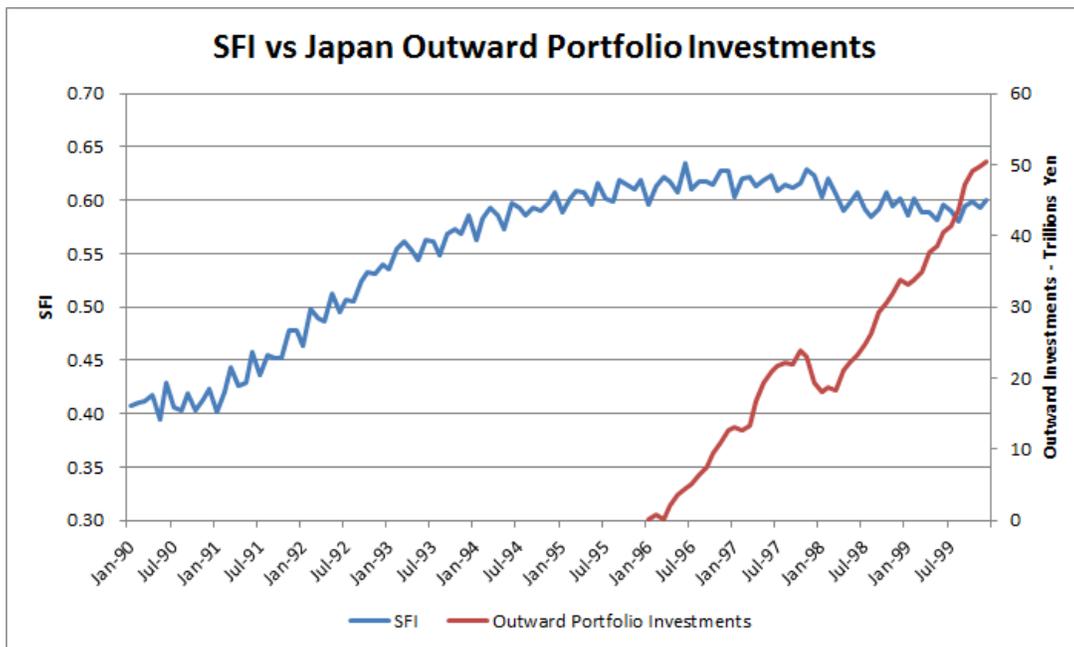
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 78



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

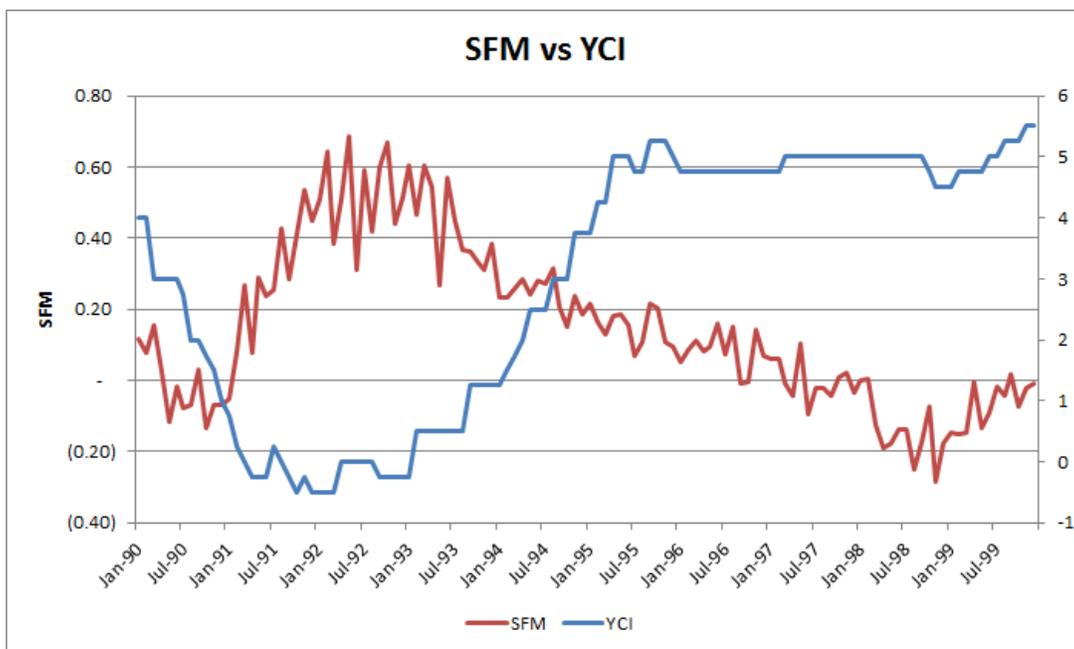
Graph 79



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

The rate of inflows into IC, as seen in SFM below, peaked in 1993, but then started declining as the opportunities offered by the US Yen Carry trade, as represented by the YCI, appeared. SFI, above, peaked in 1996, but the slowdown of inflows into SFI started prior to that in 1993, and continued till 1999, driven by the Yen Carry Trade.

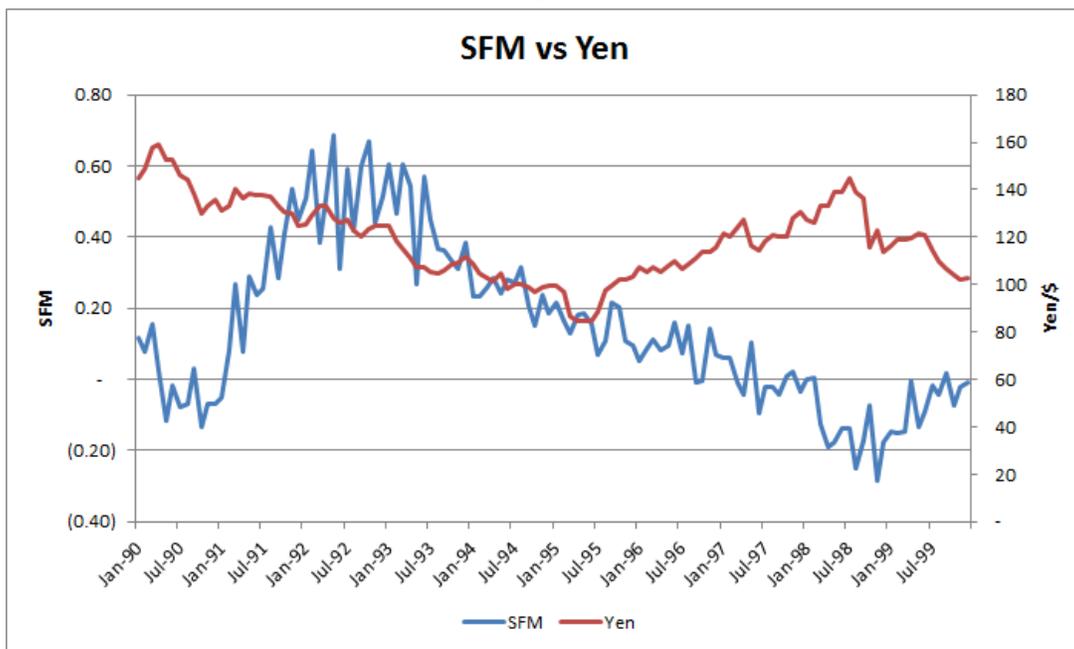
Graph 80



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

This graph of SFM versus the Yen clearly shows the pickup of the Carry Trade after 1995, from the various sources identified in earlier sections. This continued the SFM decline (from the peaking of the SFI in 1996), and started its inverse correlation to the Yen/\$ after 1995.

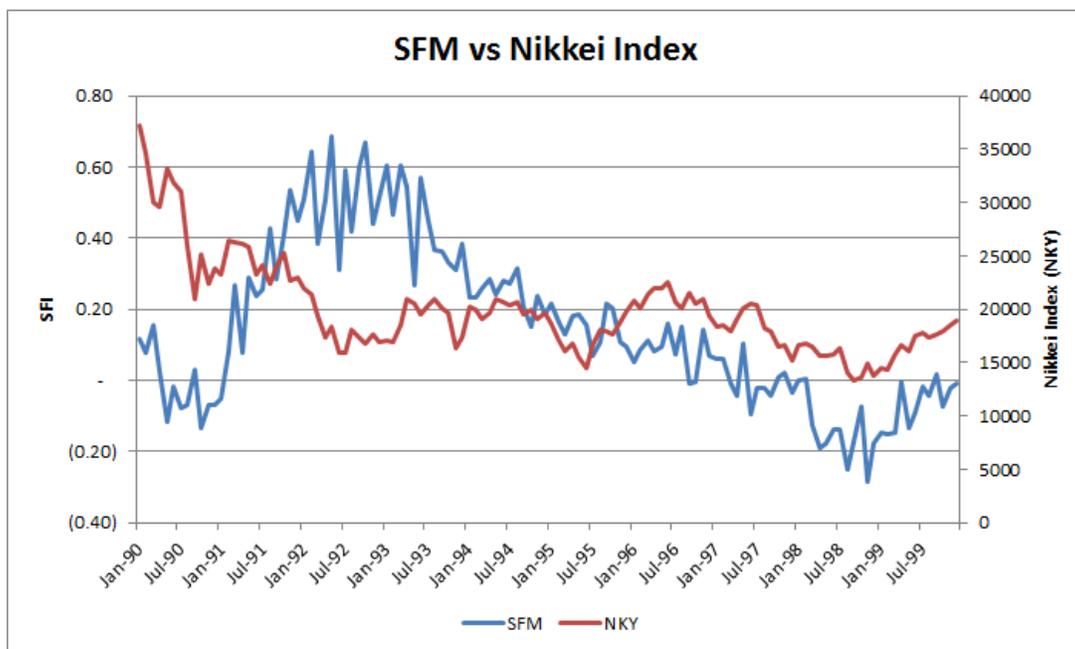
Graph 81



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

The next graph compares the SFM to the Nikkei Index in the 1990s. **The lack of correlation implies that the declines in IC are not going into the Nikkei, or at least are being dominated by the currency related outflows.**

Graph 82



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

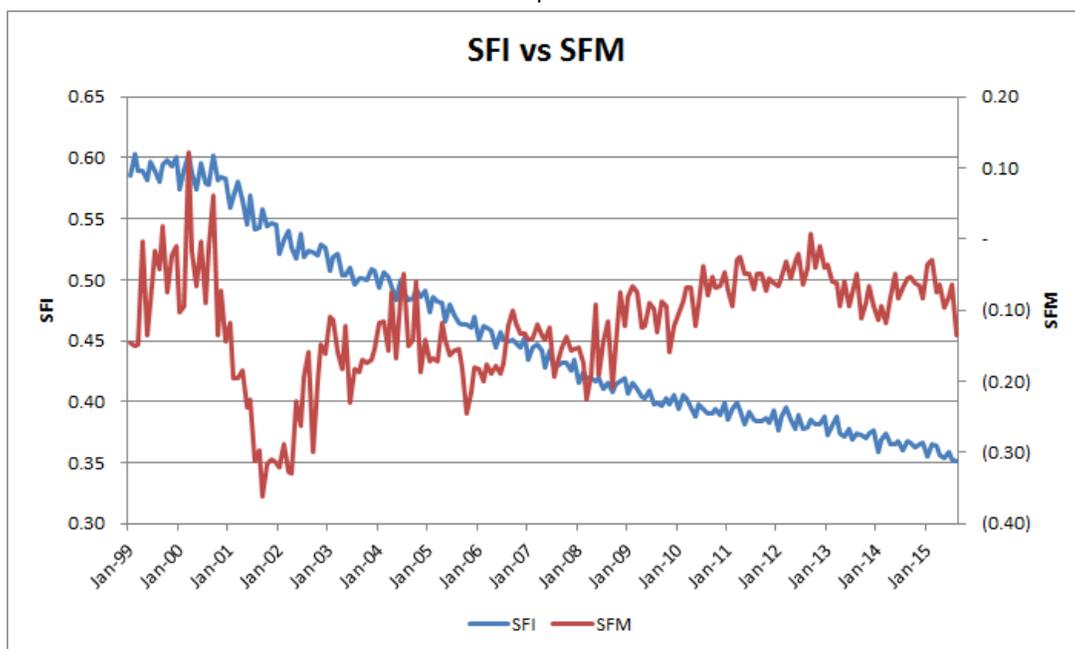
Next, let's look at the data from 1999 onwards, when Japan entered its Liquidity Trap.

I am not going to repeat the GDP, Wage, Inflation, Export or Import graphs from above, as they do not show anything positive, interesting, or enduring except for a state of stagnation. **QE, post Liquidity Trap, does not seem to have helped Japan except to briefly push up the Nikkei Index when the BOJ purchased stocks.**

With the BOJ signaling with its zero rate that there were no returns to be made in Japan, SFM resumed its decline over the next decade, dropping back to the 35% level it used to be at in the 1980s! **The Japanese are now willing to gamble with the majority of their Investable Capital or savings!**

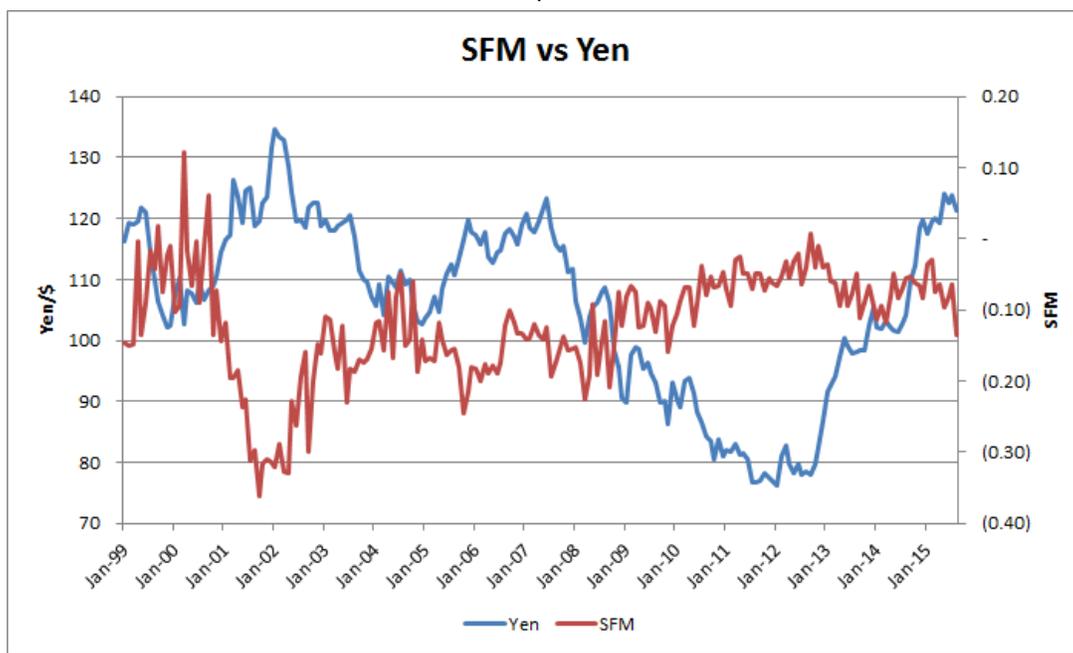
SFM highlights periods of additional investment as well as periods of caution exhibited by the Japanese investor! As shown earlier, and here again, the correlation to the Yen, and therefore flows in and out of Carry Trades, is high, with very little relationship to the Nikkei.

Graph 83



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 84



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

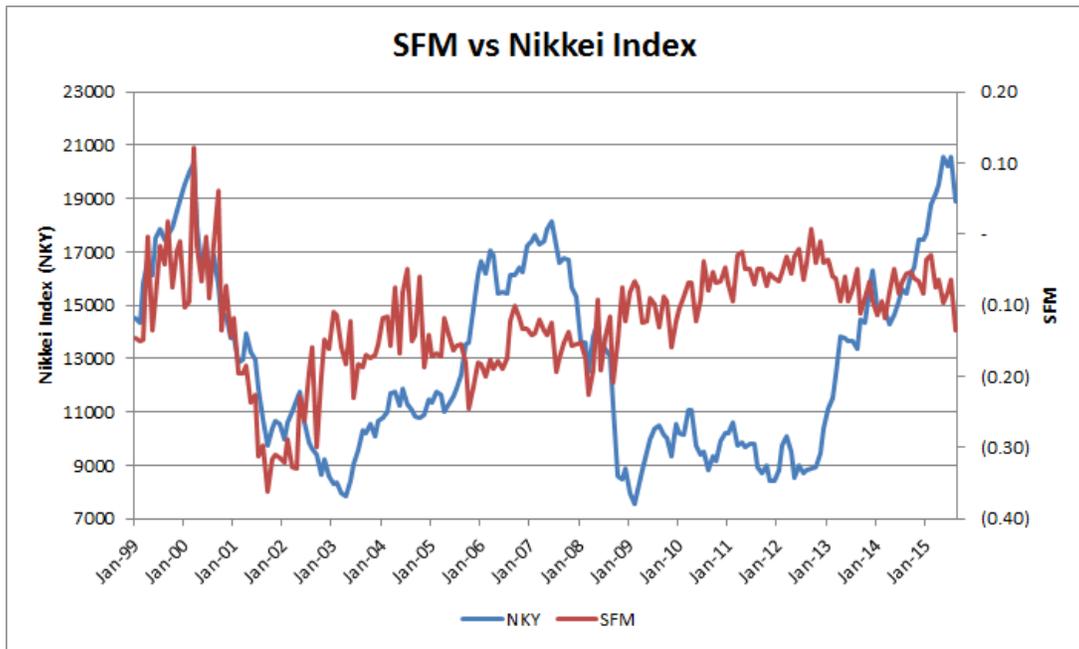
In the next comparison between **SFM** and the **Nikkei**, it appears that there was a transfer of assets from the **Nikkei** to the **Yen Carry Trade** between 2000 and 2002, with the **Nikkei** selling off. The **Nikkei** rallied again in 2003, due to **Japanese QE purchases of ETFs and Stocks** by the **BOJ**, presumably in response to **Japanese investors selling off stocks in the prior periods**. I briefly looked but could not find the actual data to show a chart. However this link describes it.

<http://www.nytimes.com/2003/03/26/business/bank-of-japan-to-buy-more-stocks-from-lenders.html>

In addition, we can see that SFM has a slightly upward trend from 2006 to 2012, the Crisis Years, which we will look at below. This will be quite important to the US!

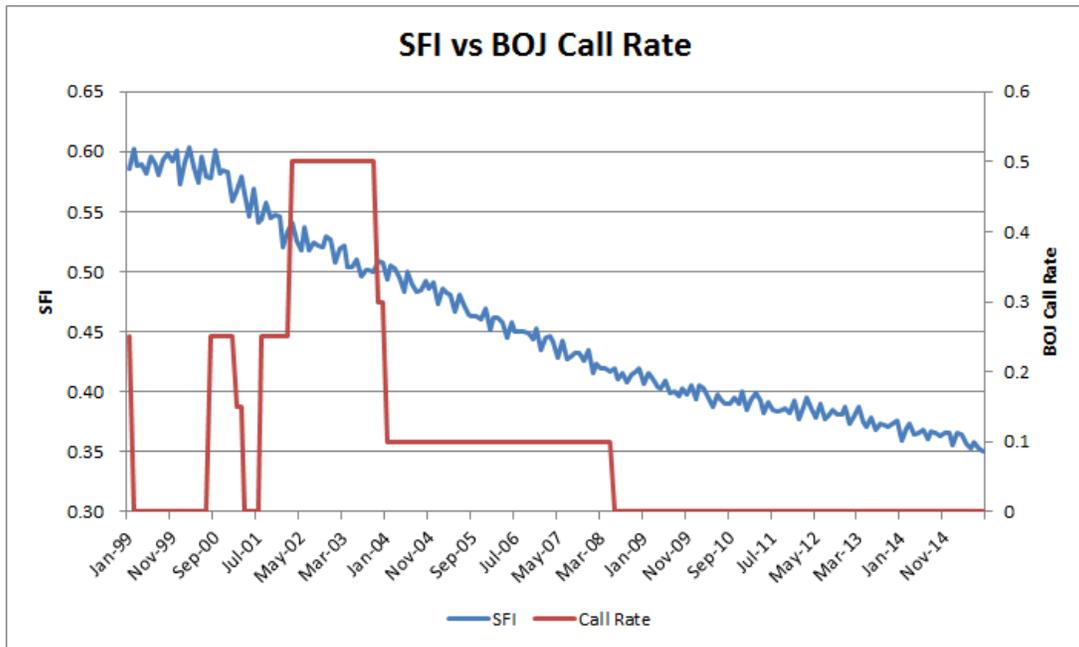
In 2012, Abenomics kicked in, with even more QE, leading to a **Nikkei rally** again, with a decline in **SFM** at the same time. In addition, the **BOJ** reduced its **UST holdings** starting in 2013. Since the **Yen** started weakening at the same time, I think its safe to say that money is finally being invested in Japan for a '**Reinflation Trade**', with a tailwind from **US macro hedge funds** flush with **US Carry QE Dollars** (a stretch for a trade strategy in my opinion, as I do not believe it can work - I might get into this later). This might also be related to the **Bernanke Taper Tantrum**, which other **EMG nations** are blaming for the demise of their rallies (as **US Carry** was withdrawn - more on this later too).

Graph 85



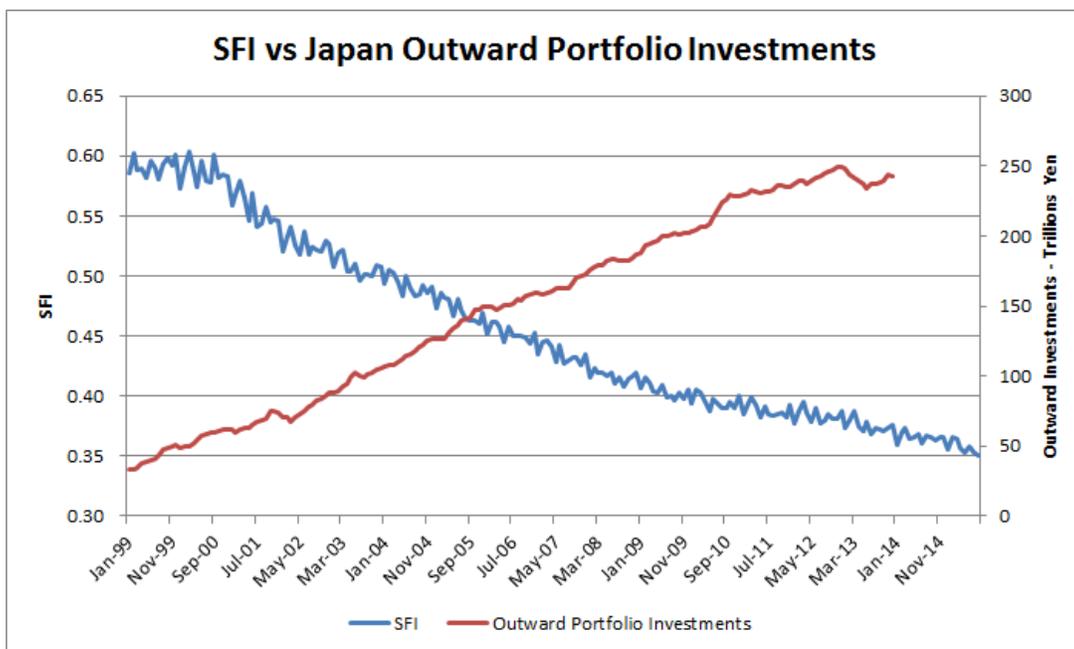
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 86



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 87



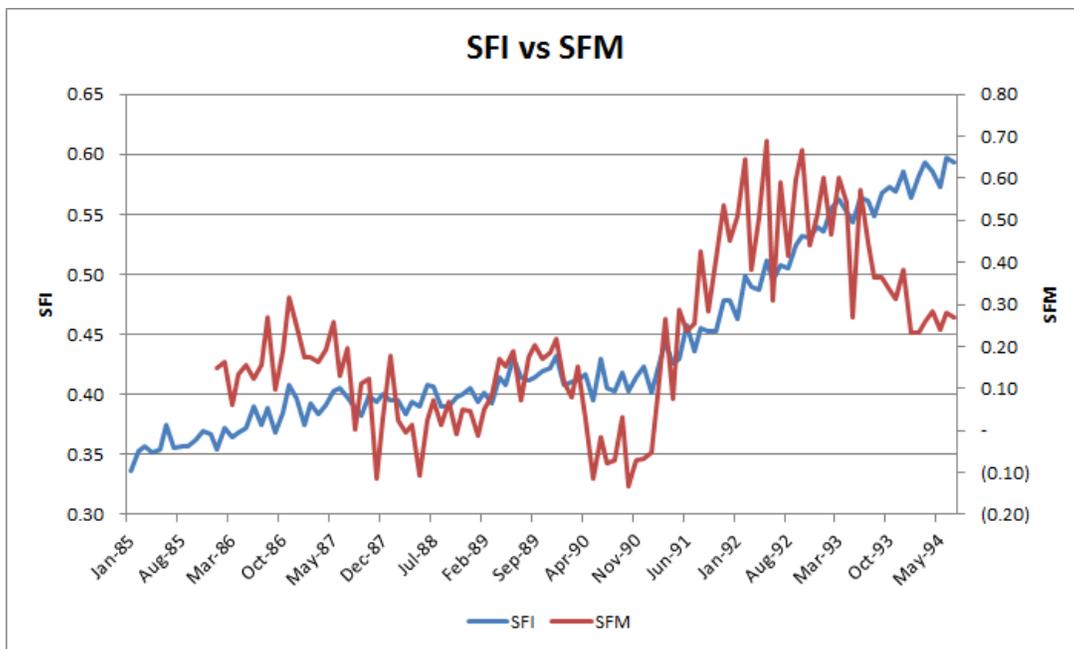
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

1985-1994

I also examined the period from 1985 to 1994, before the Yen Carry Trade started in earnest, to make sure that the relationships I observed above were not prevalent under all economic conditions.

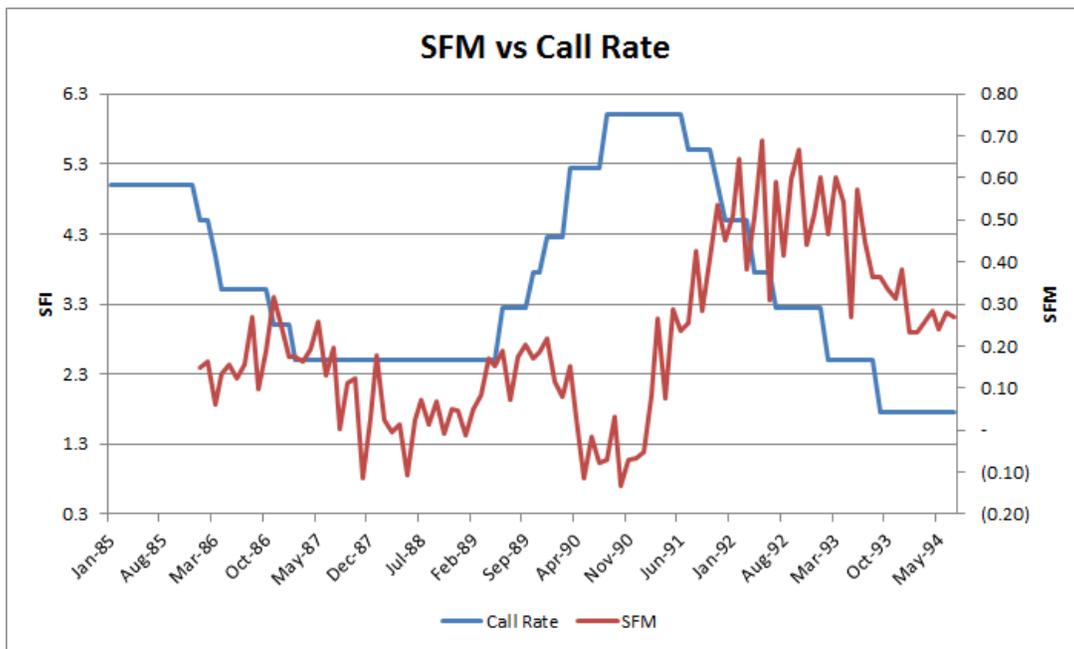
The theory laid out above - that increases and decreases in SFM should correlate to changes in investments (as shown in prices) of domestic assets, with no coincident impact on the currency - is **corroborated**, and this period exhibits the expected behavior of a closed economy where capital does not flee, and traditional interest rate policy can work. **SFM has an inverse relationship with the Nikkei, and almost no relationship to the Yen.**

Graph 88



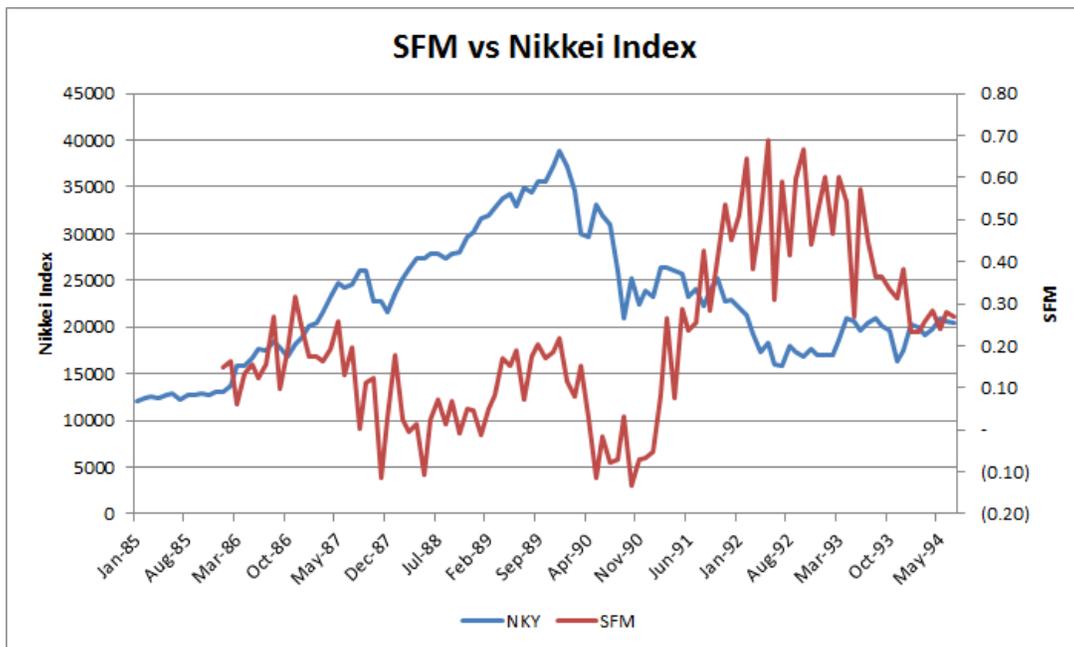
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 89



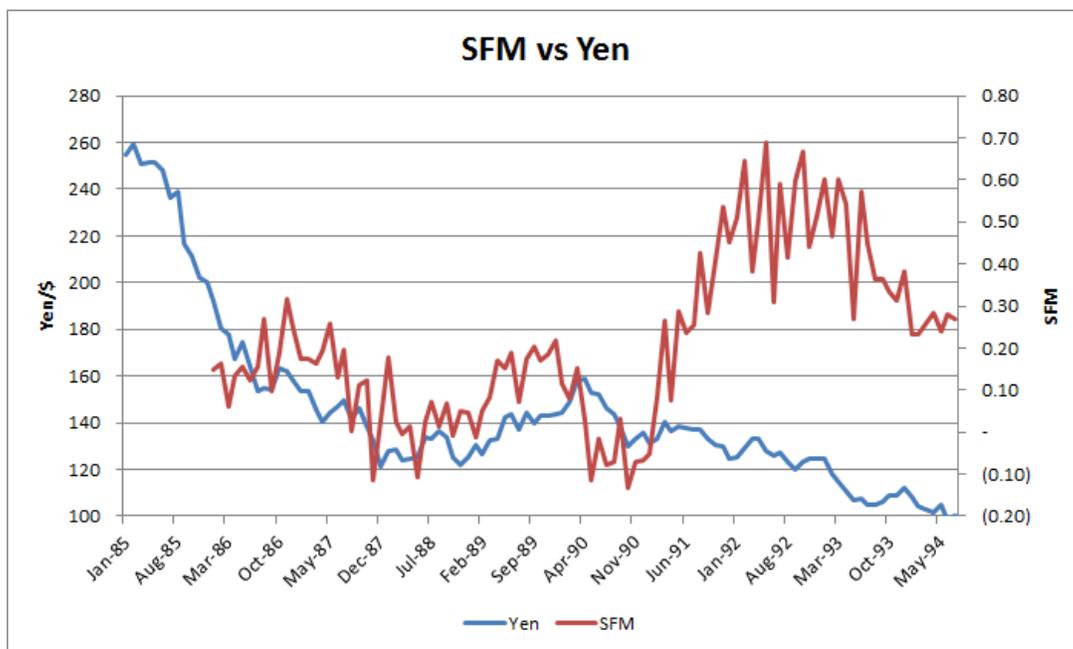
Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 90



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

Graph 91



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

A closer look at 2006-2012

In my very first Crisis Note, on 8/10/2007, I said the following:

Yen Carry trade - this is the \$1 trillion question mark - how much and how rapidly will this unravel?

** Anecdotal evidence suggests that Japanese housewives 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?*

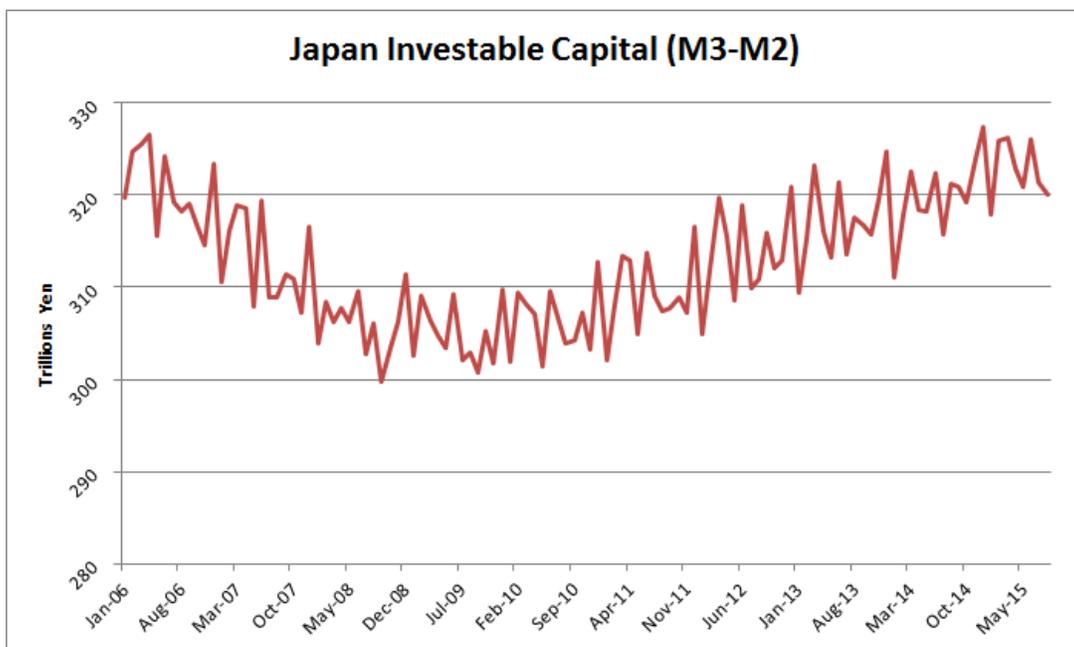
** I STRONGLY BELIEVE THAT THE YEN CARRY TRADE IS THE REASON THE FED CANNOT CUT RATES.*

** The system may not be able to handle an additional 1 trillion of deleveraging.*

OK, so I was wrong about the Fed cutting rates. (More on that later.) **But I estimated the size of the problem pretty accurately, and also predicted that the 'system' would not be able to handle it.**

The next chart shows that Japan's Investable Capital increased relative to M2, as the Great Financial Crisis was underway, by approximately 25 Trillion Yen! This was on top of the ever-increasing M2.

Graph 92

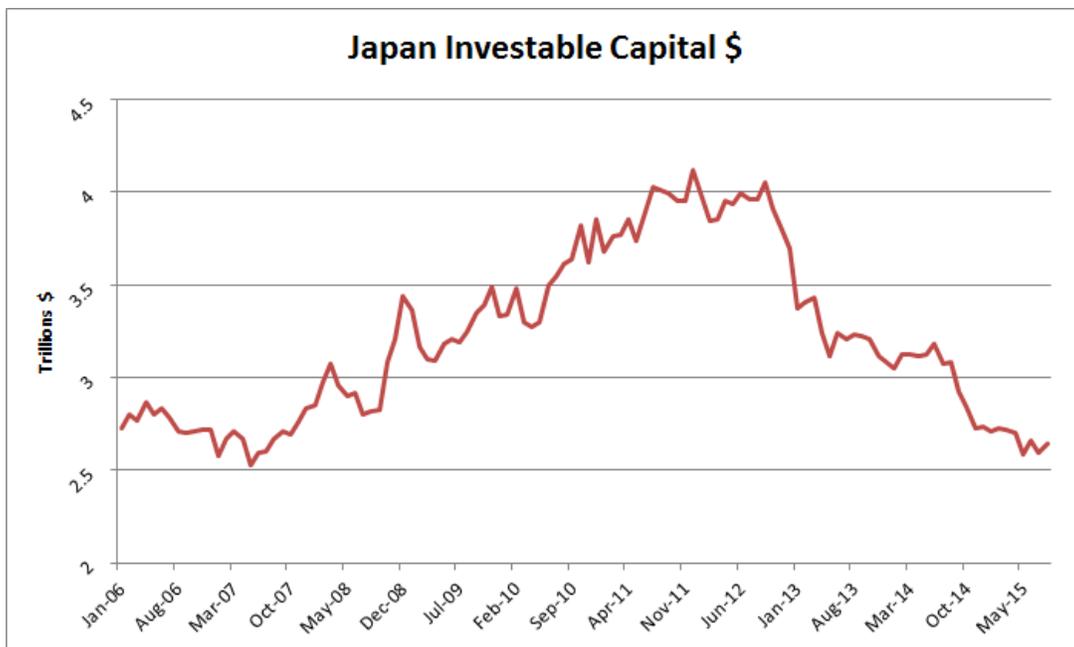


Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

When converted to USD in the following chart, this amounted to an almost \$1.5T increase in additional Money Supply for Japan during the 2007 to 2011 period, most of which certainly came from withdrawals from the US. This gives us the size of the capital withdrawal by Japan, and explains the Great Deleveraging.

This gives credence to the statements made in many of my Crisis Notes - that the crash we were experiencing was due to deleveraging caused by the reversal of the Yen Carry Trade.

Graph 93



Sources: MBS Mantra, LLC, BOJ, FRED, Bloomberg

So far, I think that I have shown, in a pretty comprehensive manner, that:

- **Japan's implementation of both traditional and unconventional Monetary Policies since 1994 have failed to have any significant impact on Japan's domestic economy, which is stuck in 1994;**

- **This failure of Central Bank Policy is because the capital created in Japan has fled, as its investors rationally seek higher yields in other countries, resulting in Japan fueling a global Carry Trade, while reducing investment available for domestic growth and economic activity. This has also had a direct impact on Japan's currency rate;**

- **Carry Flows to the Recipient Countries, using the US as an example, can explain Asset Prices, Economic activity, Commodity prices, Housing, Durable goods orders, and other economic indicators, in those countries.**

In 1999, Japan entered a Liquidity Trap. We have seen that Japanese QE attempted after that event did not have its desired impact either.

I will now examine the effectiveness of US monetary policy before and after Japan entering its Liquidity Trap, using the SFI and SFM measures I have already described above.

US Money Supply

First, of all, **we can only examine data up to 2006**. In March 2006, the Fed discontinued publishing M3 as well as most of the components of M3. They released the following statement.

<http://www.federalreserve.gov/releases/h6/discm3.htm>

Discontinuance of M3

On March 23, 2006, the Board of Governors of the Federal Reserve System will cease publication of the M3 monetary aggregate. The Board will also cease publishing the following components: large-denomination time deposits, repurchase agreements (RPs), and Eurodollars. The Board will continue to publish institutional money market mutual funds as a memorandum item in this release.

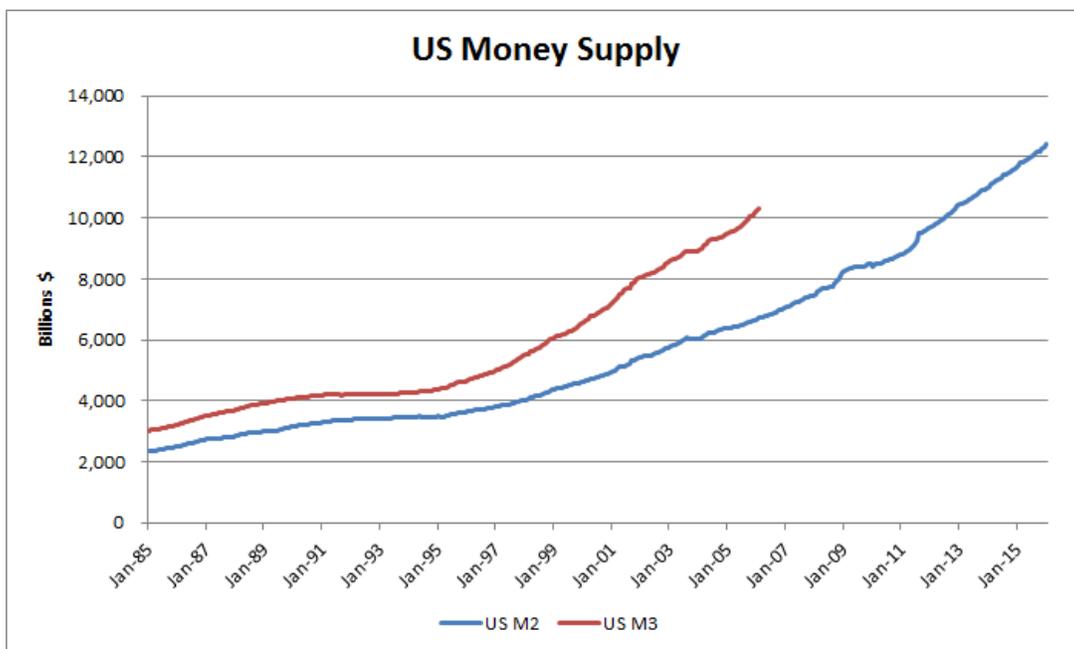
Measures of large-denomination time deposits will continue to be published by the Board in the Flow of Funds Accounts (Z.1 release) on a quarterly basis and in the H.8 release on a weekly basis (for commercial banks).

M3 does not appear to convey any additional information about economic activity that is not already embodied in M2 and has not played a role in the monetary policy process for many years. Consequently, the Board judged that the costs of collecting the underlying data and publishing M3 outweigh the benefits.

Since when has the US Government ever tried to save costs? I find this very very suspicious. Anyway, we are limited to 2006 in our analysis, and cannot examine the Financial Crisis directly.

The growth in M2, but the even greater growth of M3 after 1995: Signs of the Carry Trade!

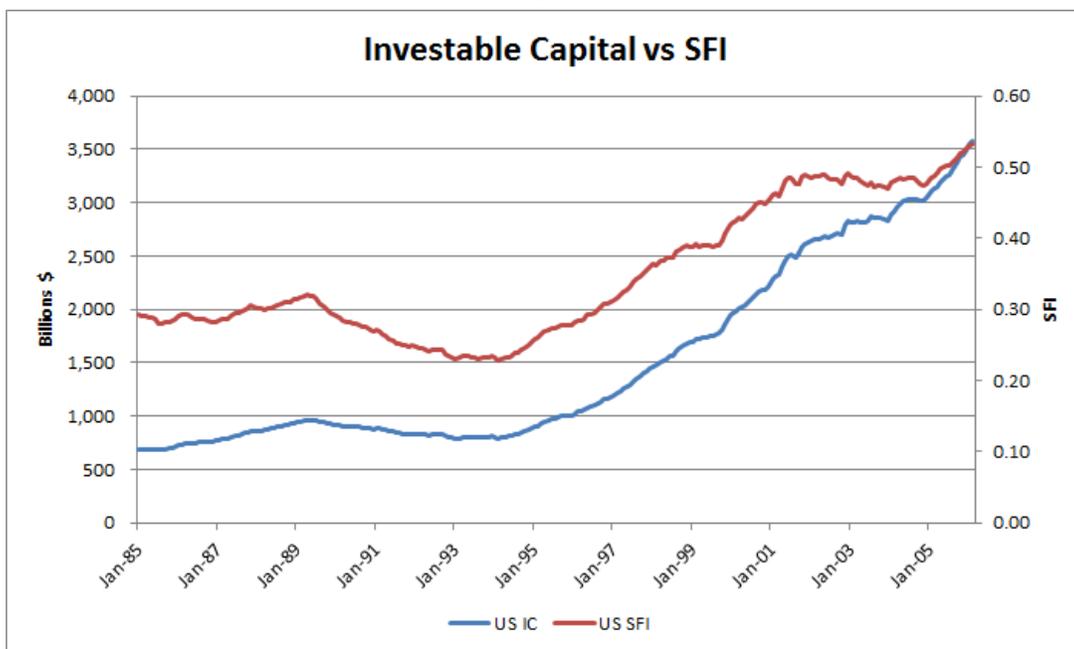
Graph 94



Sources: MBS Mantra, LLC, FRED, Bloomberg

SFI, which has declined to almost 20% in 1993, starts rising once the Carry Trade is underway. Is this why M3 publishing was cancelled?

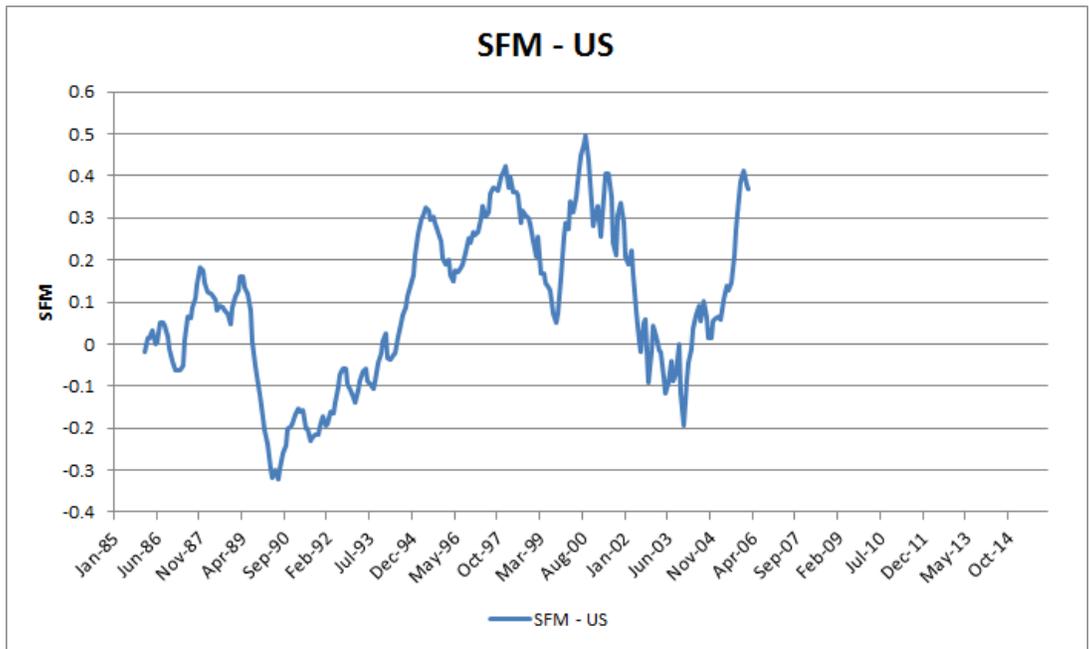
Graph 95



Sources: MBS Mantra, LLC, FRED, Bloomberg

The resulting SFM for the US. A shame we don't have more M3 data. The momentum upwards in SFI seems to have started in 1990.

Graph 96

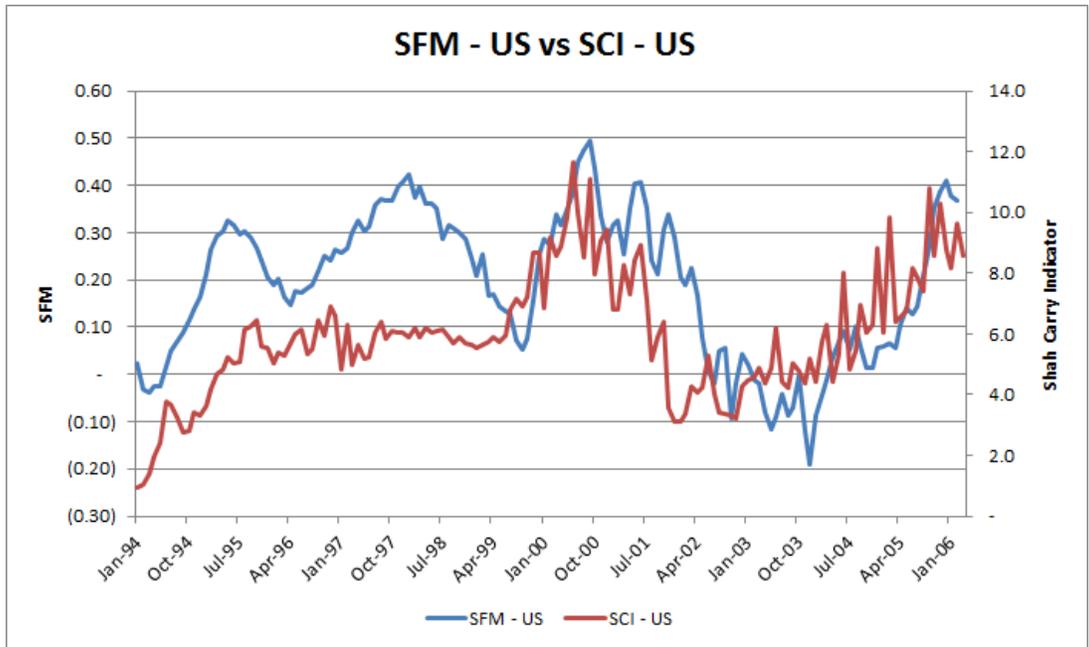


Sources: MBS Mantra, LLC, FRED, Bloomberg

Connecting US Carry availability (SCI) to Money Supply Flow Momentum (SFM) - this shows a dramatic strengthening in this relationship after 1999, reflecting the increase in awareness and exploitation of the Yen Carry Trade after Tiger's blowup.

We have already shown the SCI's relationship to US asset prices in Chart 1 - the SCI vs the S&P Index. Even though SFM-US has not been available for 10 years now, we can still use SCI as a proxy. I am still looking for other substitutes for US M3 however.

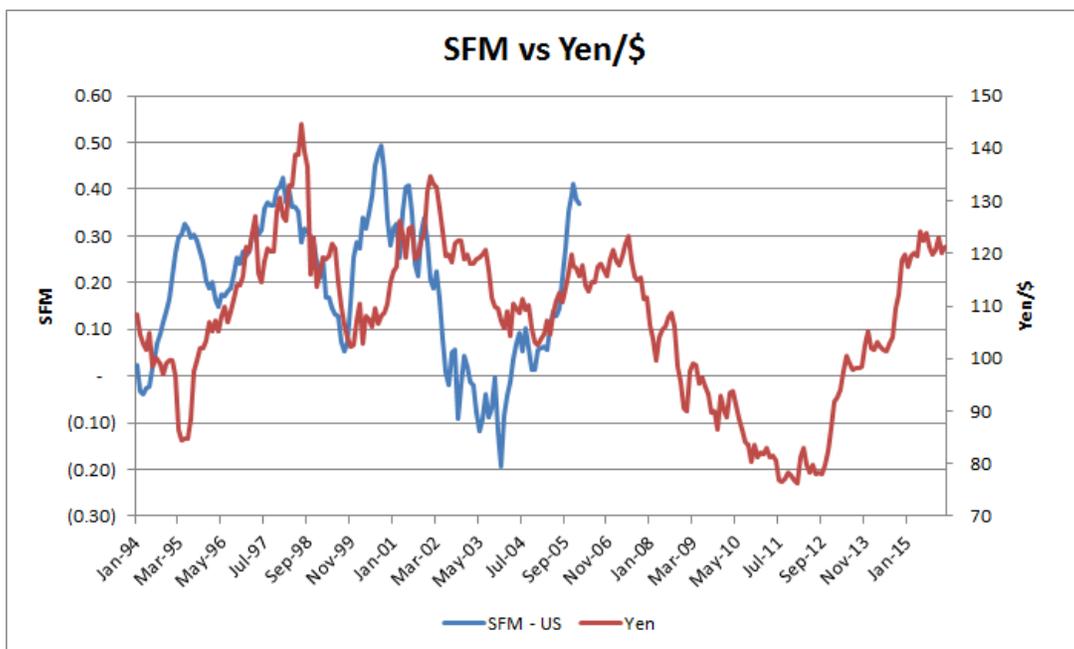
Graph 97



Sources: MBS Mantra, LLC, FRED, Bloomberg

Remember - all US carry is not Yen Carry - the Fed's QE, plus that of other Central Banks (by buying USTs), also adds to US Carry availability.

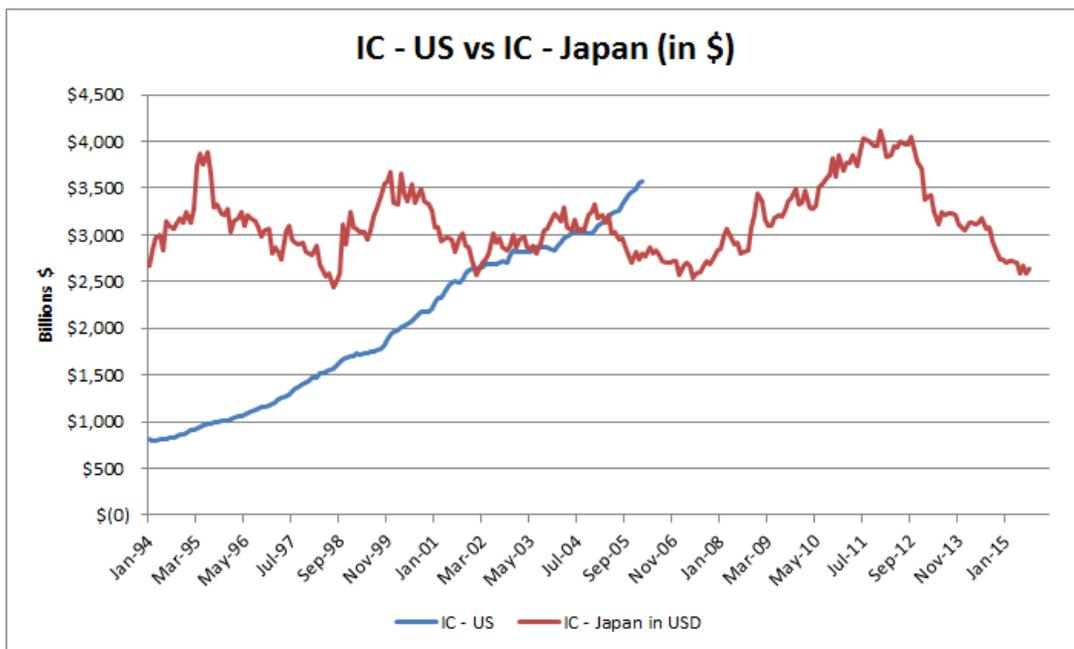
Graph 98



Sources: MBS Mantra, LLC, FRED, Bloomberg

People do not appreciate that, during the 1990s, Japan's excess savings - IC - were as sizable as US M2 (see above for M2 and M3 graphs), and dwarfed US IC. As Japan's foreign bonds holdings accumulated, and capital exports compounded, resulting in Money Supply in the US, US IC got larger than Japan's IC.

Graph 99



Sources: MBS Mantra, LLC, FRED, Bloomberg

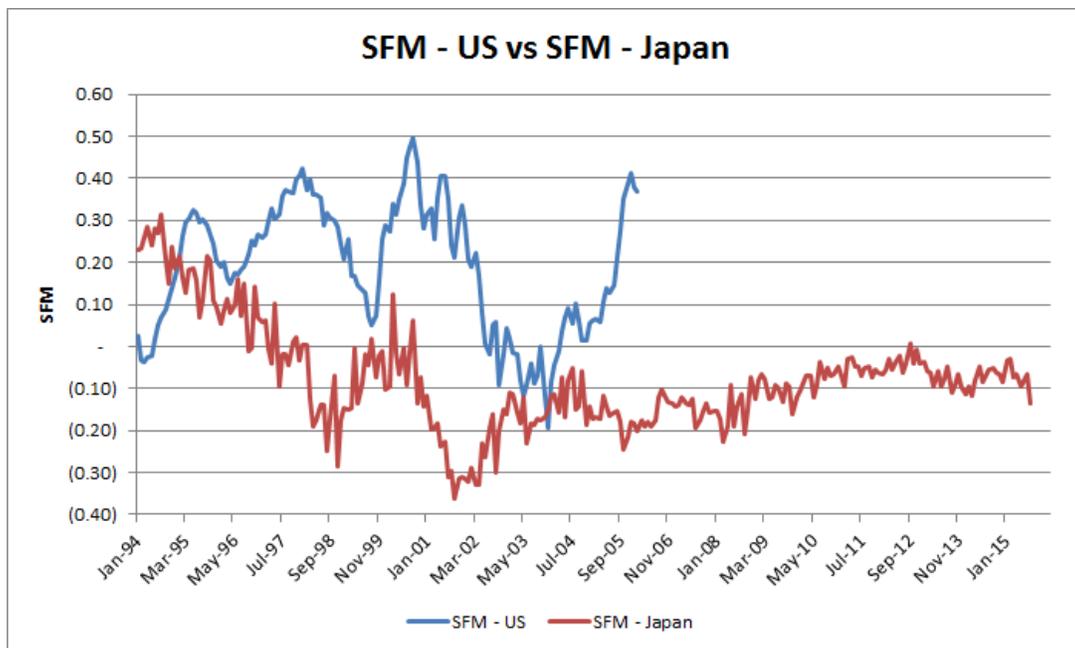
The next graph shows a relationship I expect - reductions in Japanese SFM result in US SFM going up, and vice versa, indicating a large component of US Money Supply originating in Japanese IC, and the leverage in the US financial system from Japan's export of capital.

In addition, as bank capital was rising from Samurai bond issuance, the effects of outflows from Japan were resulting in magnified changes in US money supply, as they were being transmitted through bank balance sheets.

The graph also shows some sort of lag going on in 1999 - I suspect this is due to Japanese QE buying of USTs - if the BOJ buys USTs directly from US banks or the FED, will anything show up in Japanese Money Supply? I would suspect not - it is just advertised QE that does not materialize from the Japanese perspective. This does directly

impact US M3 and IC however.

Graph 100

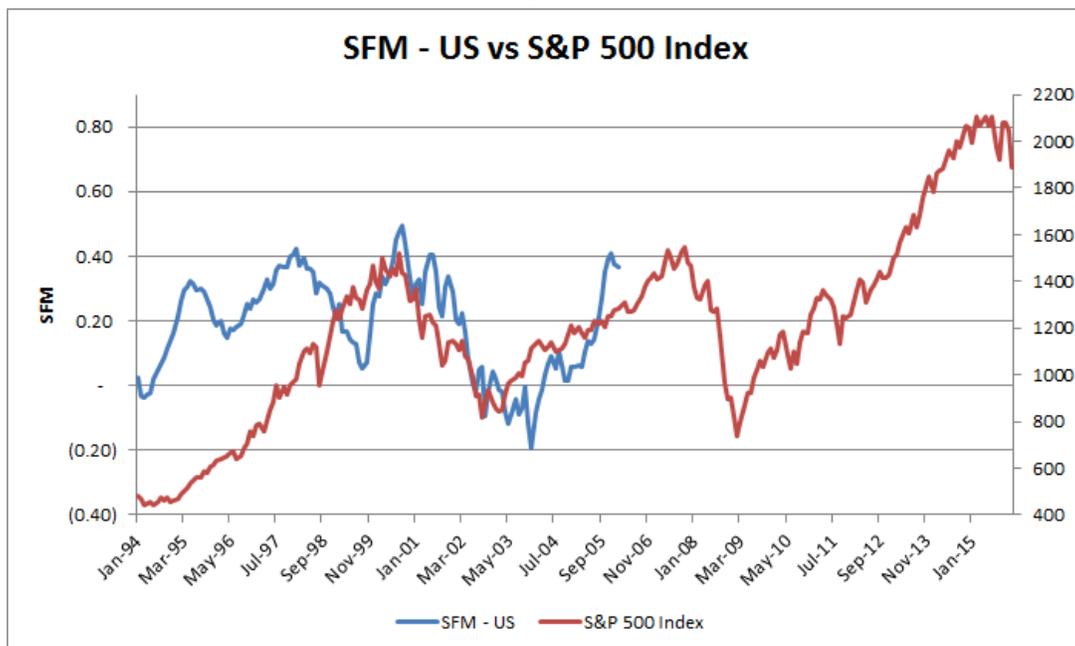


Sources: MBS Mantra, LLC, FRED, Bloomberg

This chart emphasizes the point made above - if IC was true savings of the US economy, and not an artifact of money supply and leverage from Japan, transfers out of US Stocks (declines in SPX) should have increased IC and SFM.

Instead, this is showing declines in money supply from Stock market declines, confirming that deinvestment from assets in the US resulted in deleveraging within the US economy.

Graph 101



Sources: MBS Mantra, LLC, FRED, Bloomberg

Velocity of Money, GDP, Inflation and Asset Inflation

This document from the St. Louis Fed describes the conventional thinking of Velocity of Money, GDP and Inflation. Please read it: [What Does Money Velocity Tell Us about Low Inflation in the U.S.?, Sep 01, 2014.](#)

During the first and second quarters of 2014, the velocity of the monetary base² was at 4.4, its slowest pace on record. This means that every dollar in the monetary base was spent only 4.4 times in the economy during the past year, down from 17.2 just prior to the recession. This implies that the unprecedented monetary base increase driven by the Fed's large money injections through its large-scale asset purchase programs has failed to cause at least a one-for-one proportional increase in nominal GDP. Thus, it is precisely the sharp decline in velocity that has offset the sharp increase in money supply, leading to the almost no change in nominal GDP (either P or Q).

So why did the monetary base increase not cause a proportionate increase in either the general price level or GDP? The answer lies in the private sector's dramatic increase in their willingness to hoard money instead of spend it. Such an unprecedented increase in money demand has slowed down the velocity of money, as the figure below shows.

I believe this is an erroneous conclusion based on multiple flawed economics assumptions, including the assumption that the US economy, or any other, is still an isolated economic entity, and it ignores global flows of money that impact the US economy, measured by the Carry Indicator, SCI and the Money Supply Flow (SFM) indicators that I have described. It also ignores the potential for US Dollar-Carry.

Increased Money Supply does not guarantee Velocity of Money. GDP is driven by transactions, and once needs (however they are defined) are met, this has a growth limit that might be defined by the replacement cycle, not by core demand. We might simply be at 'Peak Stuff' due to the growth from the 1990s. Velocity of M2 was stable and plateaued from 1995 to 1999, and declined precipitously in 2000, and has been declining since. The decline started in 2000, as Japan entered its Liquidity Trap, increasing US money supply - US monetary bases increased but our consumption did not keep up. The bump in Velocity from 2003-2006 can be explained by the SCI and the resulting housing boom leading to the creation of 5mm excess homes in the US - seen in this document from 2008.

[/cn-2008-pop.shtml](#)

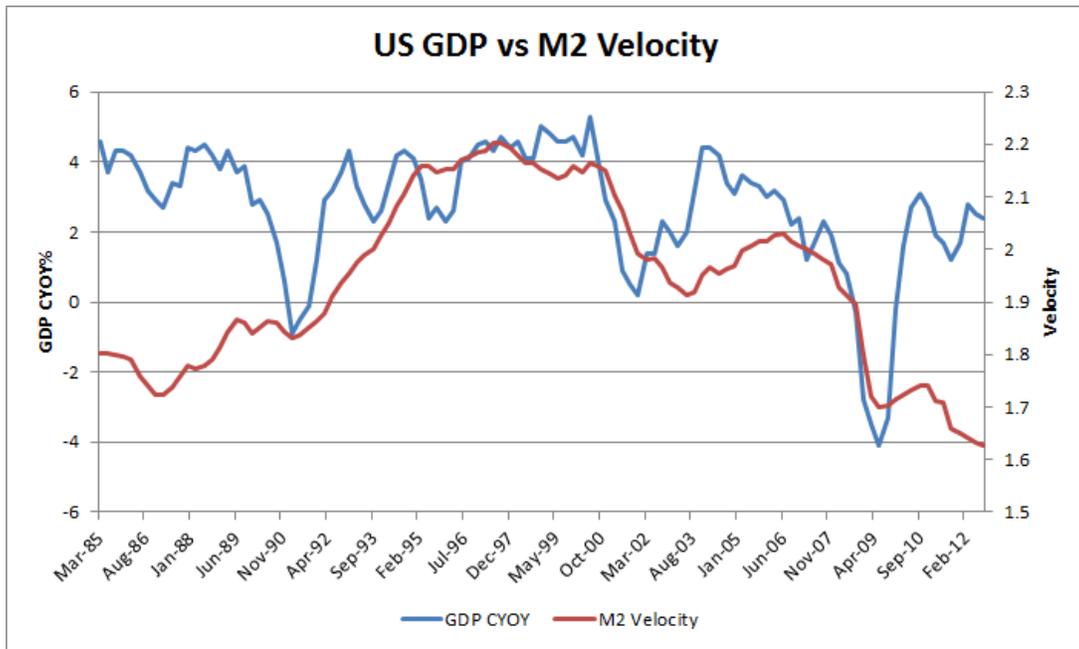
True Velocity of Money will be driven by the goods and services people need. Increasing the denominator will not change the amount of money used, but will reduce measured velocity.

Here we see that GDP used to track M2 Velocity quite well. However the relationship changed in 2002/2003, with GDP increasing significantly for only a relatively minor change in Velocity. So either GDP changed on its own, or Velocity somehow became more powerful, and worked back in time (the rise in Velocity lagged the rise in GDP).

Prior to that, from 1990 to 2000, this relationship was quite well correlated, so one cannot blame the Fed for trying again in 2002. **However, this does not explain to the Fed where the M2 Velocity is being driven from!**

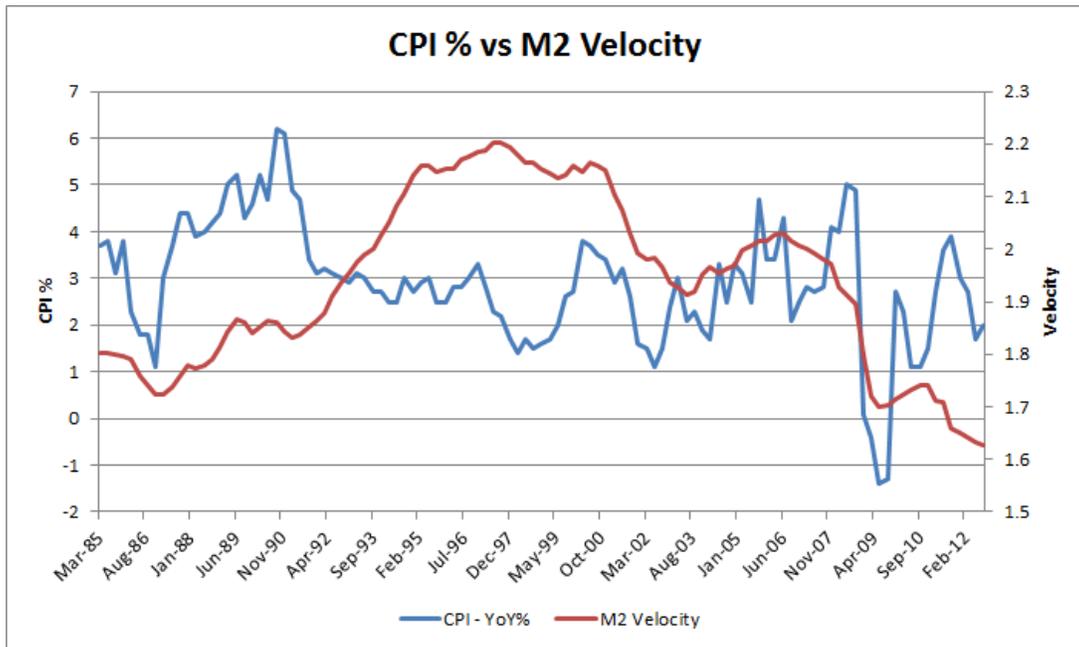
Post 2004, they should have studied it more, instead of deleting M3.

Graph 102



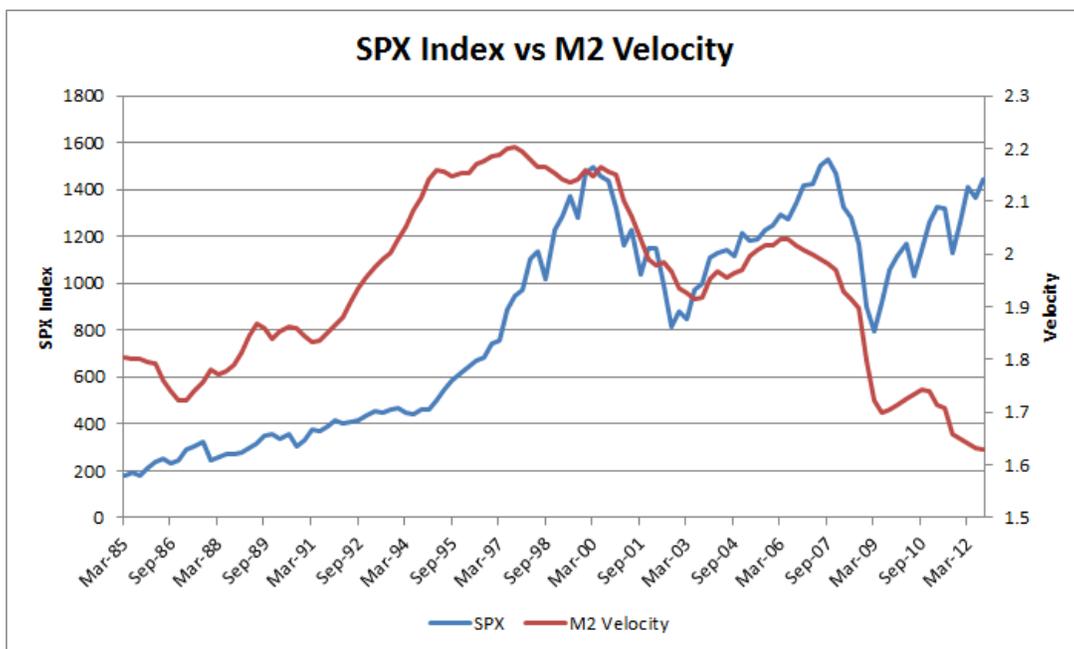
Sources: MBS Mantra, LLC, IMF, Bloomberg

Graph 103



Sources: MBS Mantra, LLC, IMF, Bloomberg

Graph 104

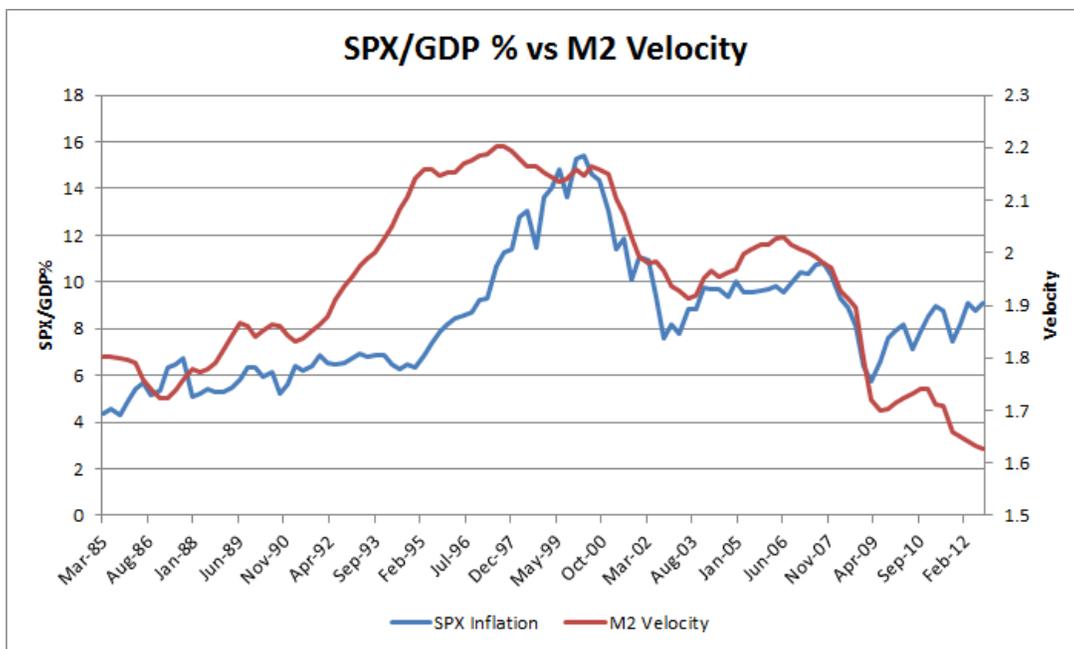


Sources: MBS Mantra, LLC, Bloomberg

What Carry, in the form of any source of increased money supply, does is it generates Asset Inflation. This is a phenomenon that Economists and the Fed do not seem to acknowledge. However I believe it is responsible for one of the greatest social problems that the world is confronting: Income Inequality.

The following graph is a simple view of **Asset Inflation - the Ratio of the SPX index to GDP**, compared to M2 Velocity. Clearly, there is a relationship. It has also diverged after 2009.

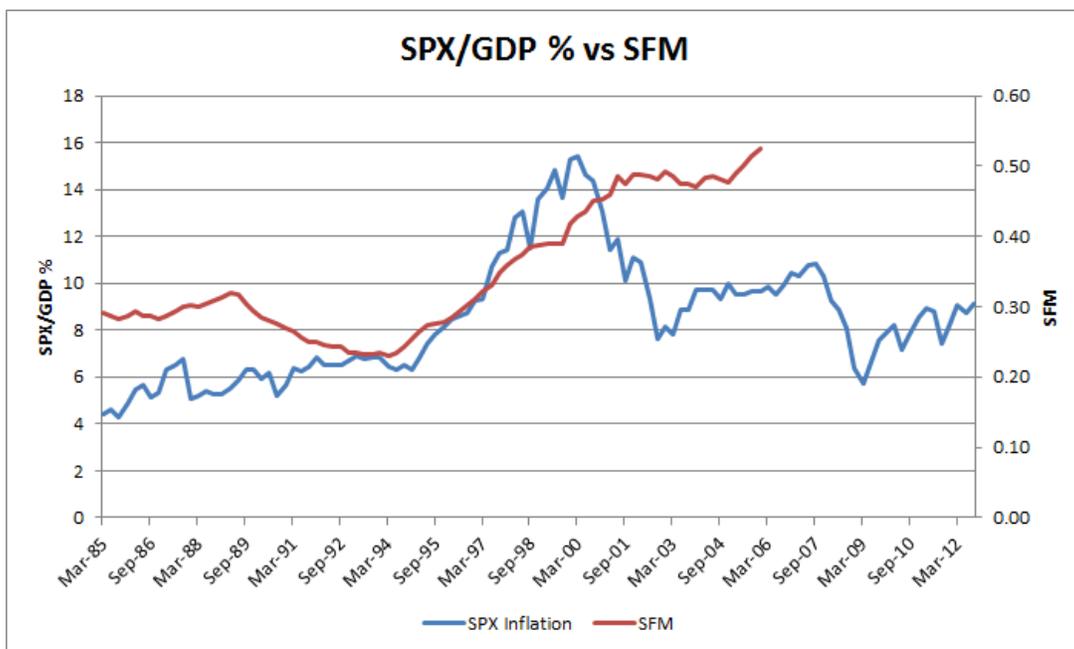
Graph 105



Sources: MBS Mantra, LLC, Bloomberg

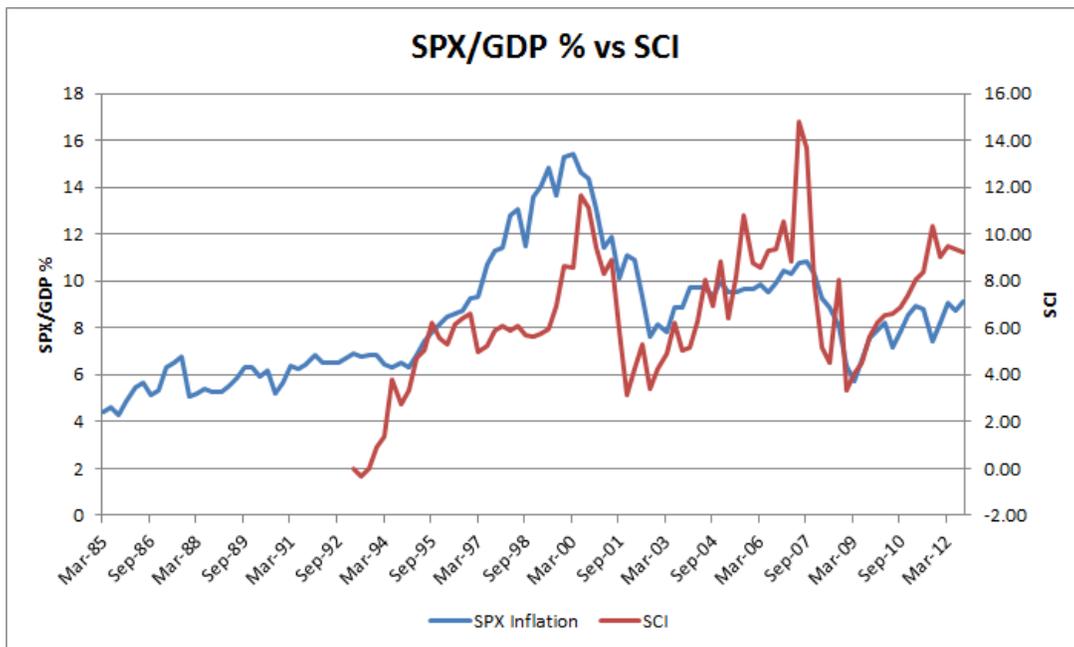
This divergence is explained in the graphs below, showing SPX inflation vs SFM and SFI - QE resulted in Asset Inflation, instead of the desired velocity of money or GDP growth.

Graph 106



Sources: MBS Mantra, LLC, Bloomberg

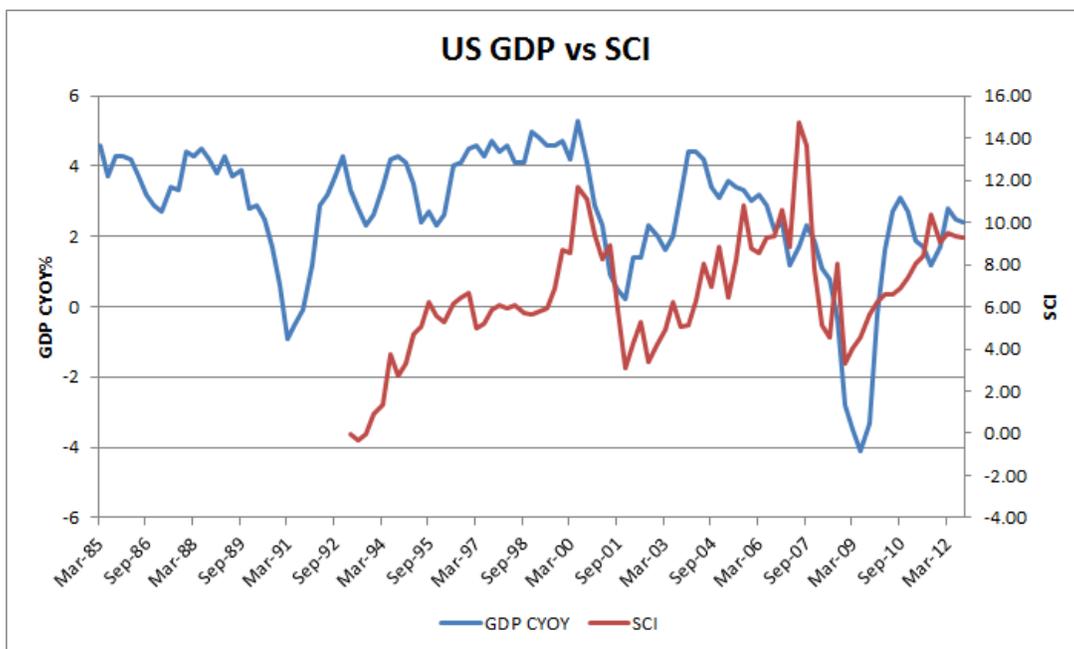
Graph 107



Sources: MBS Mantra, LLC, Bloomberg

I have also compared the GDP YoY Change to SFI and SCI. SCI especially, explains the recent past changes in GDP (say 15 years or so) better than Velocity. The SFM and SCI data in the next graphs are quarterly, to match the GDP data, and lose some of their granularity as a result.

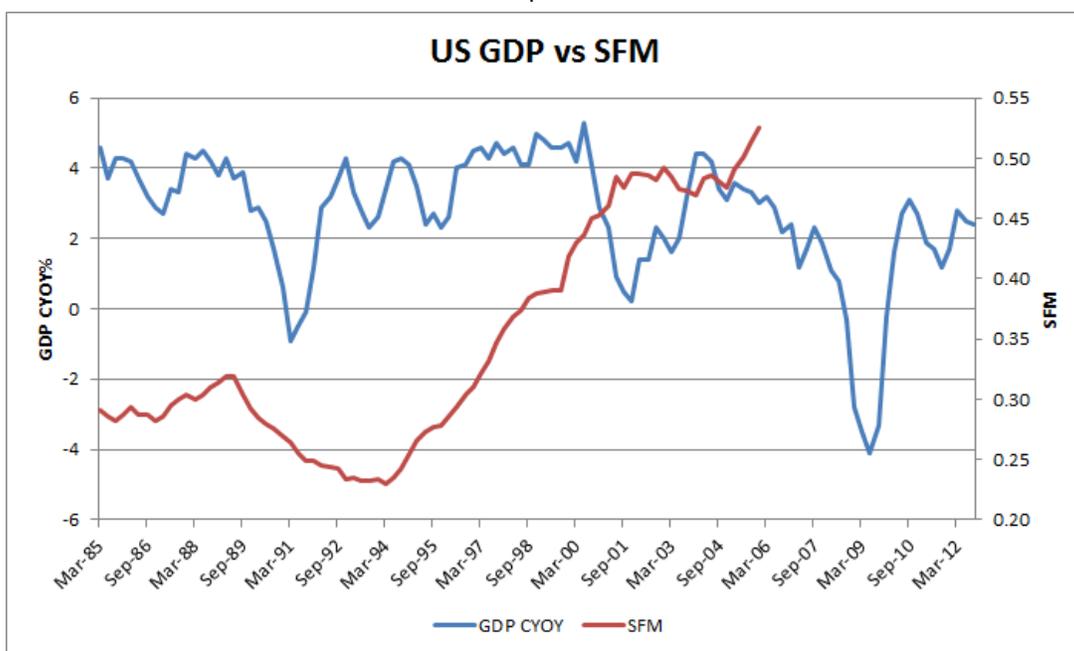
Graph 108



Sources: MBS Mantra, LLC, Bloomberg

The continued rise of US SFM, in contrast to lower and declining US GDP growth rates since 2000 to 2007 indicates that Asset Inflation is likely occurring.

Graph 109



Sources: MBS Mantra, LLC, Bloomberg

Reformulation of the Quantity Theory of Money

The St. Louis Fed article above uses the Quantity Theory of Money, which I had also described earlier in this article.

$MV = PQ$ or $V = PQ/M$

where

- M = quantity of money
- V = Velocity
- P = Price Level

Q = Real GDP - quantity of real goods sold.

This needs to be modified

$M' = M$ plus Money Supply from external sources - foreign purchases of US assets including Investable Capital less outflows to other countries.

$P' = P$ Prices in CPI plus Asset prices including financial assets. (remove rents, add real estate).

So, maybe something like this.

$$V = P'Q/M'$$

$$= (\text{CPI} + \text{Asset Inflation}) * \text{GDP} / (M2 + \text{IC})$$

Obviously targeting GDP gets a lot harder.

This needs further formulation.

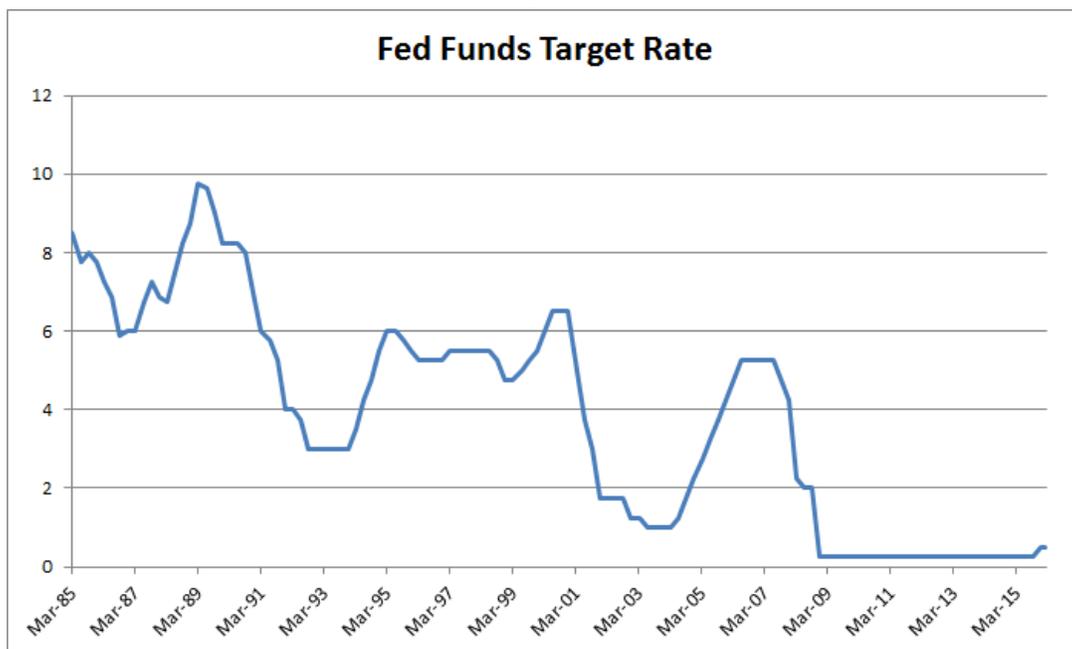
A closer look at Fed Decisions

The charts and data above show that GDP responded well to Velocity in the 1980s and part of the 1990s. Let's visit some Fed decisions to assess the subsequent effectiveness of Monetary Policy.

This wikipedia link describes the recessions in the US.

https://en.wikipedia.org/wiki/List_of_recessions_in_the_United_States

Graph 110



Sources: Bloomberg, MBS Mantra, LLC,

Late 1980s recession and Rate Cuts

Wikipedia has the following to say:

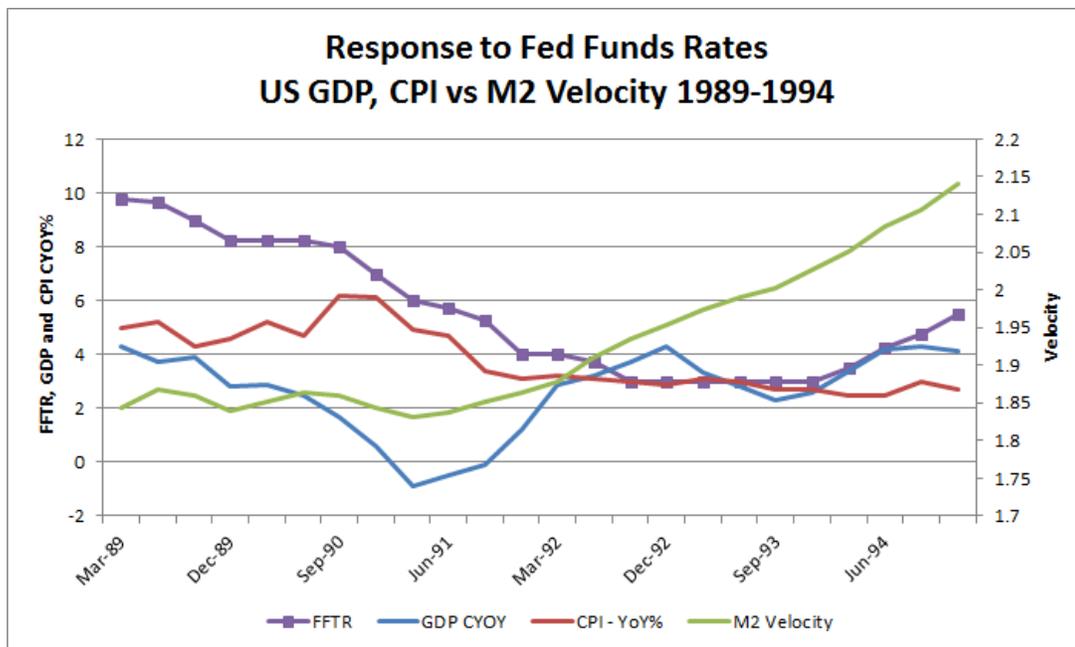
After the lengthy peacetime expansion of the 1980s, inflation began to increase and the Federal Reserve responded by raising interest rates from 1986 to 1989. This weakened but did not stop growth, but some combination of the subsequent 1990 oil price shock, the debt accumulation of the 1980s, and growing consumer pessimism combined with the weakened economy to produce a brief recession.

In September 1989, the Fed Funds Target Rate ("FFTR") was 9. Between December 1989, and September 1992, the FFTR was cut to 3%.

Response: Velocity turned upwards from 1.85, when FFTR was still 6%, in Q2 1992. Velocity rose to over 2.1 by the end of 1994, at which time GDP stopped declining and reversed course. Inflation continued to decline.

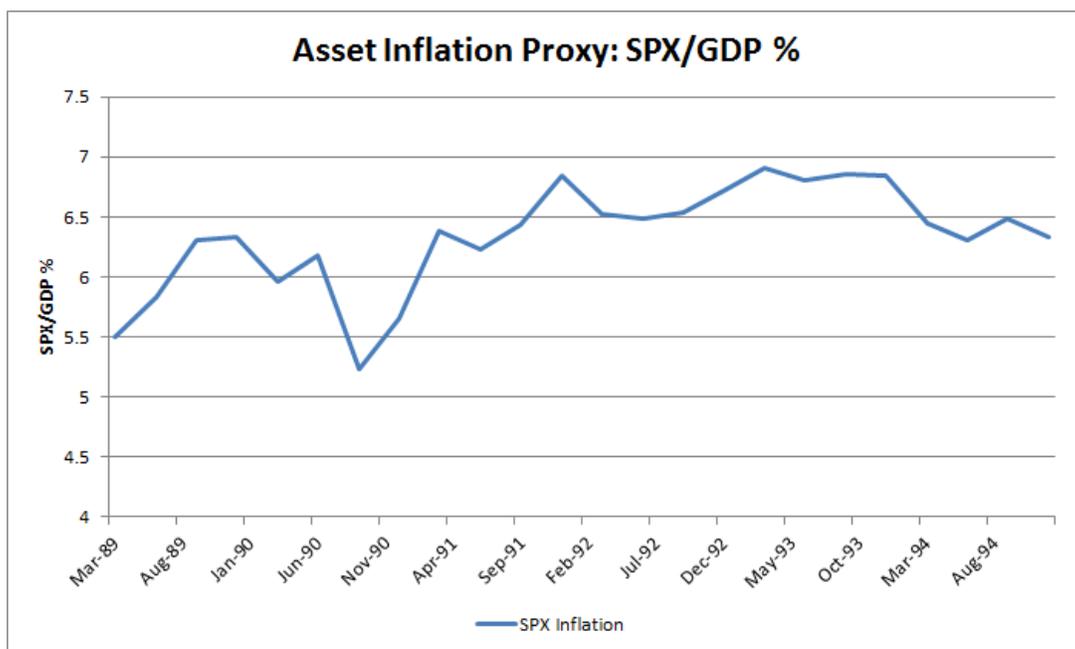
Conclusion: Monetary Policy was working.

Graph 111



Sources: MBS Mantra, LLC, Bloomberg

Graph 112



Sources: MBS Mantra, LLC, Bloomberg

1994 Rate Hikes to 1998

In response to 10yr yields starting to rise in September 1993, Greenspan proactively hiked rates up from 3% in March 1994, to stem inflation before it raised its head. He raised the FFTR to 6% in March 1995. Presumably, he saw M2 velocity rising. While 10yr rates kept going up till September 1994, Velocity flattened out in 1995, and

remained stable for most of the 1990s. However it appears that the rate rises caused GDP growth to slow in 1994, and Greenspan eased again starting in 1995 to compensate.

Inflation remained stable during this period until it started declining in 1997.

In 1998, after LTCM, Greenspan cut rates again, to 'save financial markets', as CPI appeared tame, and Velocity was slowing.

There continues to be much discussion about this, but I do not believe it to be relevant. For example:

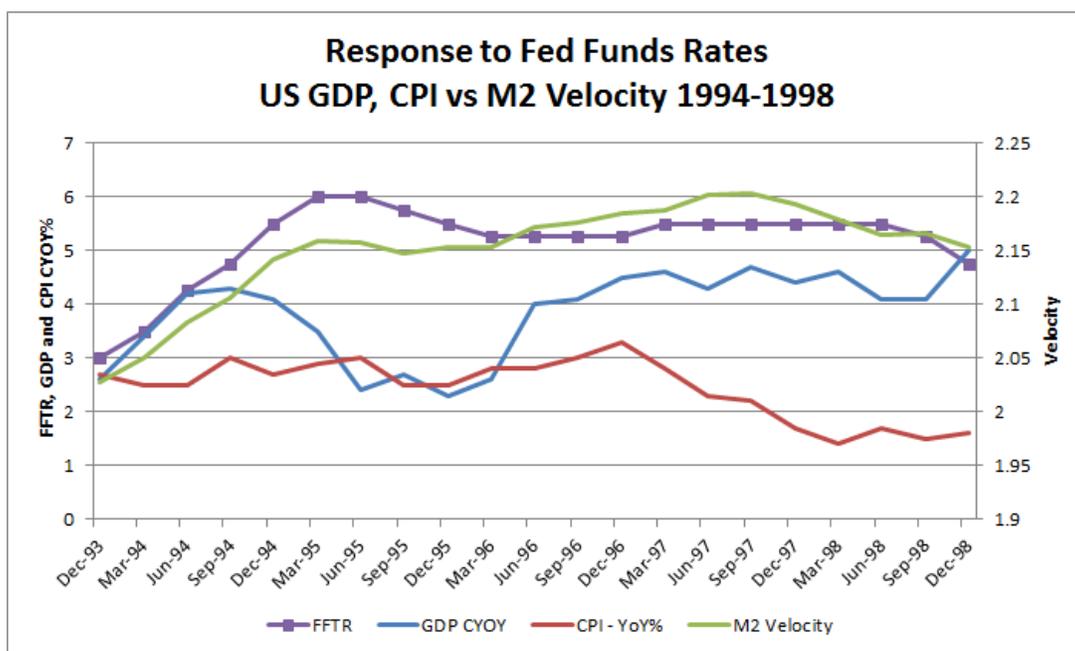
<http://www.macroresilience.com/2013/03/04/the-greenspan-feds-biggest-mistake-the-ltcm-rate-cuts/>

Of course, what had been missed was the start of the Yen Carry Trade, triggered by the March 1994 rate hike, inflating assets, with capital gains seeping into M2 and GDP, even though CPI was declining.

Response: Velocity and GDP both appear to be responding to FFTR changes during this period, even though Velocity was higher than it had been for a long time.

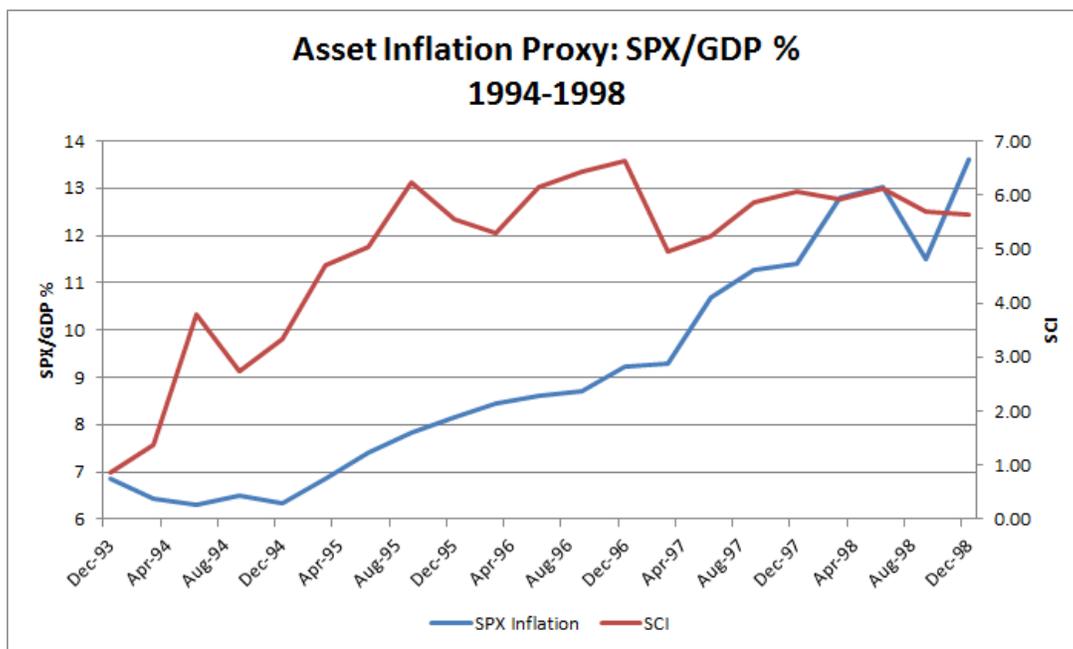
Conclusion: Monetary Policy was working, but less effectively, as the Yen Carry trade was also influencing the US Economy, creating the asset inflation, volatility and deleveraging that resulted in the Asian Flu/Tiger/LTCM blowups.

Graph 113



Sources: MBS Mantra, LLC, Bloomberg

Graph 114



Sources: MBS Mantra, LLC, Bloomberg

1999 to 2005 - This is a very interesting and important section.

In 1999, Japan entered its Liquidity Trap, and Economics changed. Understanding this period will allow you to understand everything that has followed since, including the Financial Crisis, and the current Global worries, and fear of Negative Rates.

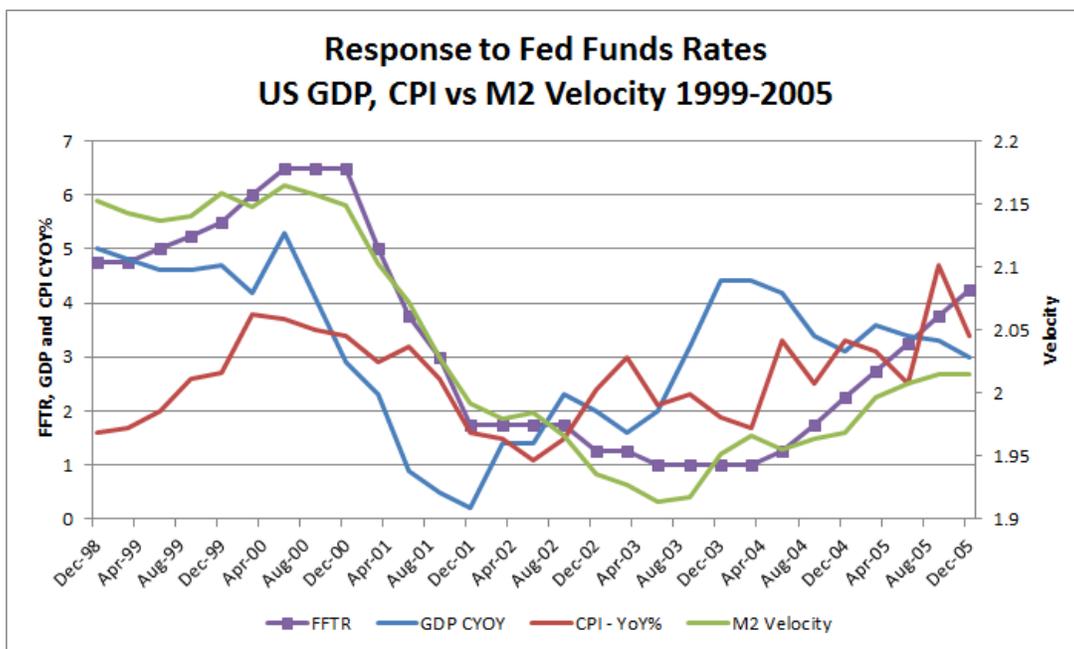
From this moment on, the Japanese Economy was directly connected to the US Economy (as well as others) in a completely unanticipated manner. **Essentially, the Fed ceded control of its monetary policy to Japan, without knowing or understanding that it had done so.**

A common phrase one hears nowadays is that the Central Banks are 'Pushing on a String'. This is incorrect. The real analogy is 'Tugging on a Rope'. If Japan pulls, the US gets yanked, and if Japan lets go, the US falls back, as in a game of Tug-of-War. Or, one could call it a See-Saw - each side's movements are mirrored on the other side.

Let's see what the US economy and Greenspan did first. I will then explain how events in Japan determined outcomes in the US Economy.

We can see that Greenspan cut rates in 2001.

Graph 115



Sources: MBS Mantra, LLC, Bloomberg

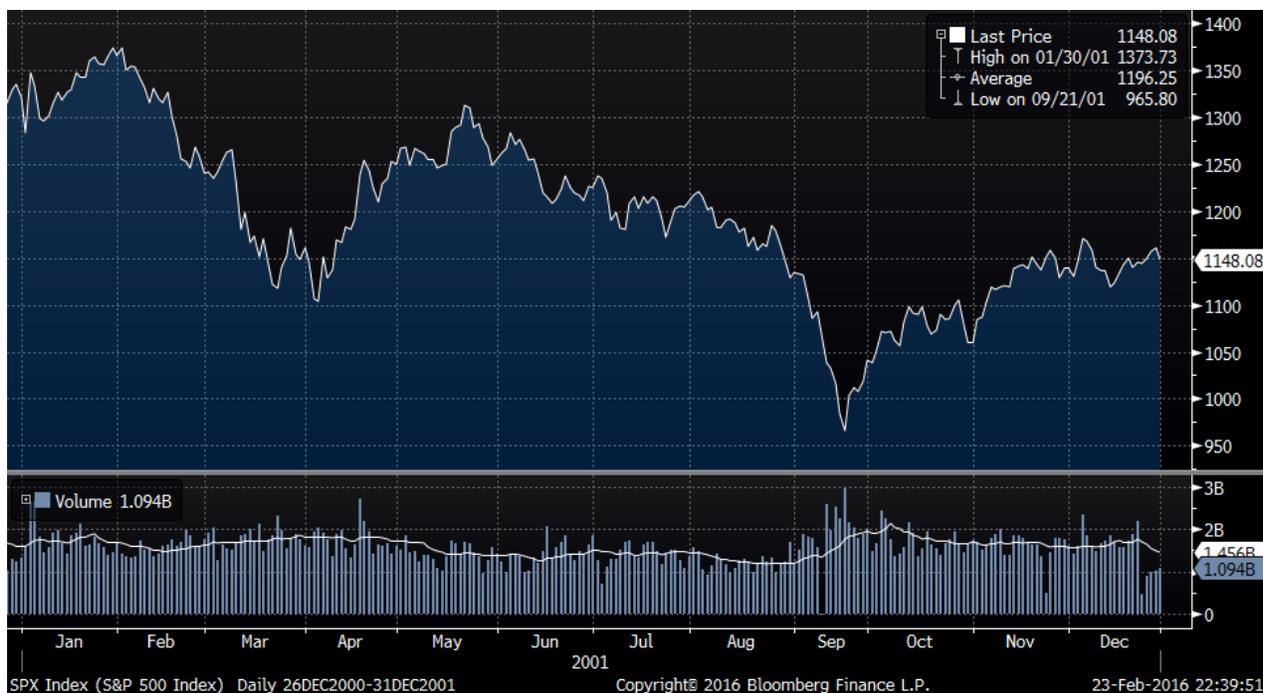
From this CNN article on Jan 3, 2001: <http://money.cnn.com/2001/01/03/economy/fed/>

In a surprise move, the Federal Reserve slashed short-term interest rates Wednesday and signaled it is ready to make further cuts to keep the U.S. economy from sliding into a recession.

The move, which came nearly four weeks ahead of the Fed's regularly-scheduled policy meeting, caught most investors off guard, triggering a mighty rally on Wall Street with the Nasdaq composite posting its best day ever and the Dow industrials surging nearly 3 percent.

The stock market rally was short lived, and stocks continued declining till 2003.

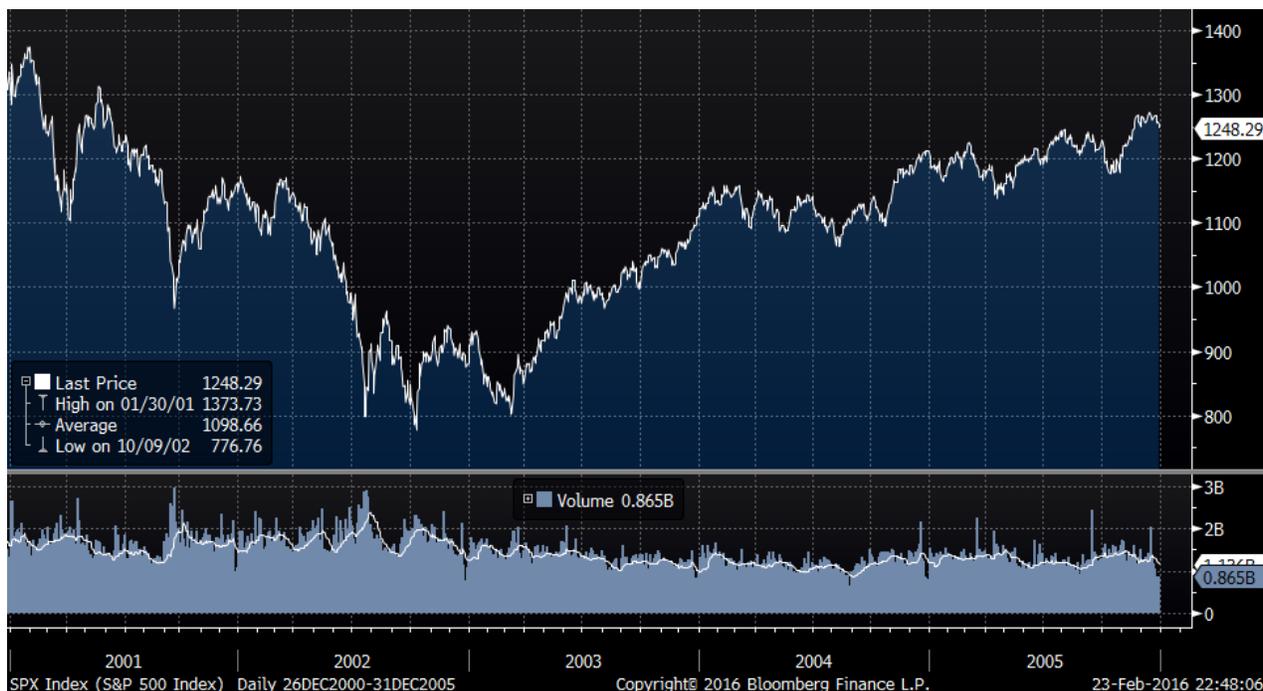
Graph 116
S&P Index 2001



SPX Index (S&P 500 Index) Daily 26DEC2000-31DEC2001 Copyright© 2016 Bloomberg Finance L.P. 23-Feb-2016 22:39:51

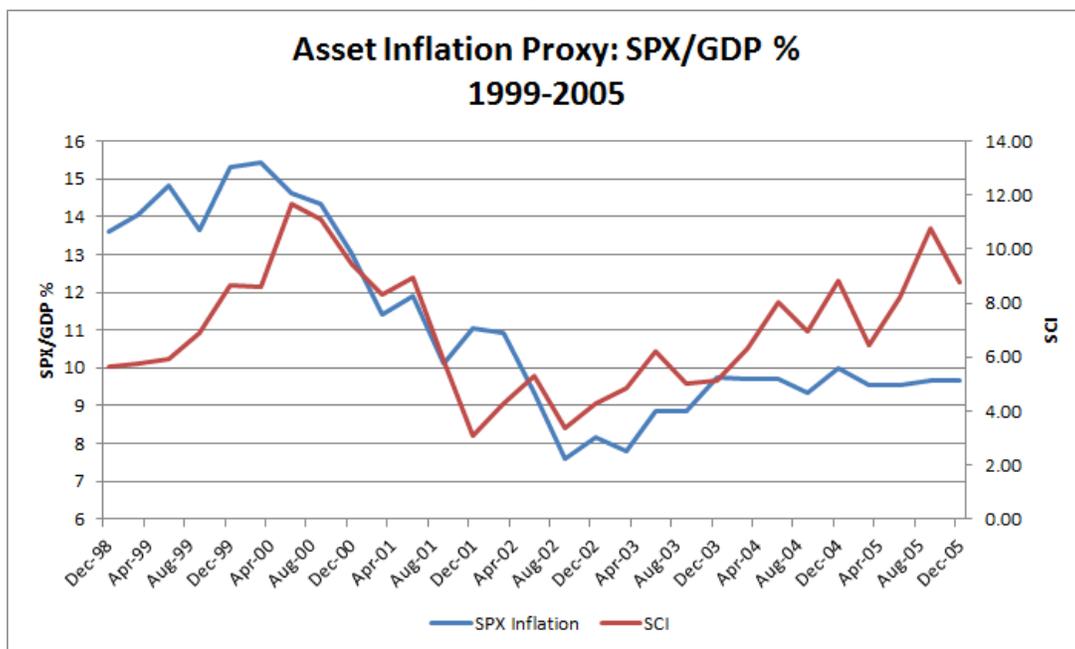
Sources: MBS Mantra, LLC, Bloomberg

Graph 117
S&P Index - 2001-2005



Sources: MBS Mantra, LLC, Bloomberg

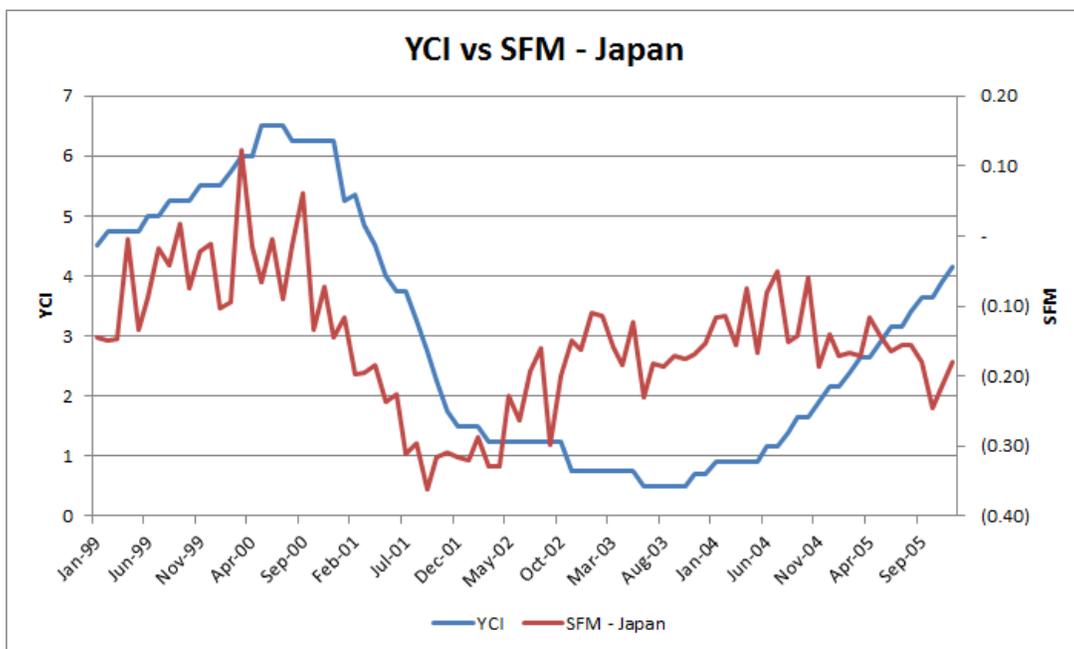
Graph 118



Sources: MBS Mantra, LLC, Bloomberg

What had happened was that, **by cutting rates, Greenspan had inadvertently turned the Yen Carry trade around** - YCI dropped, and SFM in Japan not only declined, but turned negative - **without an incentive, Japan not only stopped exporting capital, but withdrew it.**

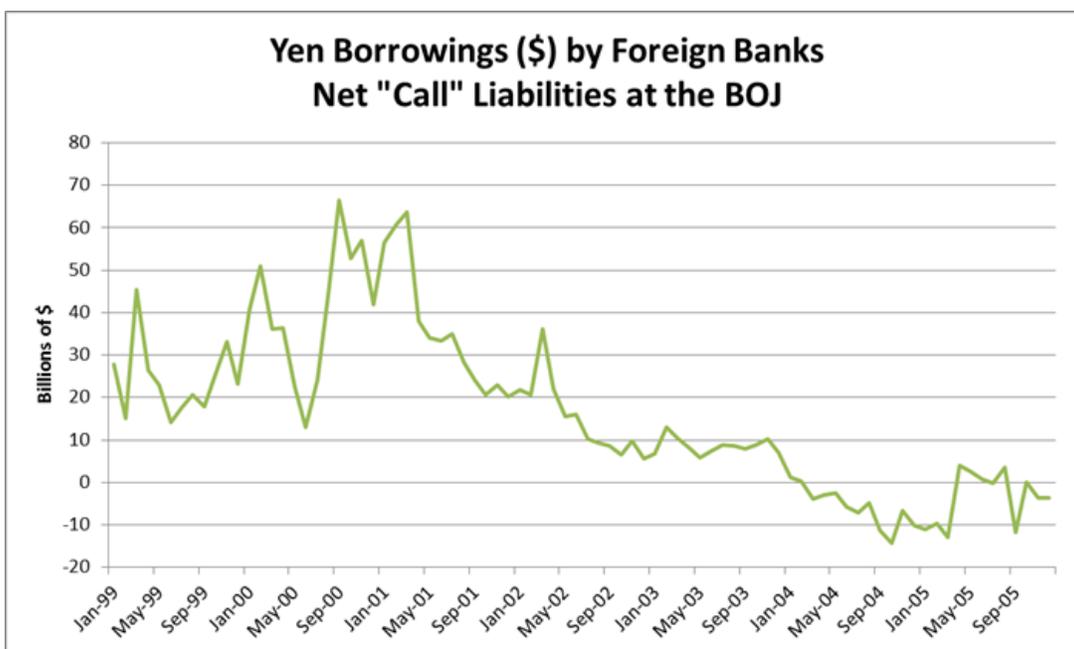
Graph 119



Sources: MBS Mantra, LLC, Bloomberg

US Banks also stopped borrowing from Japan - both Net Call liabilities and Samurai bonds dropped, further reducing US Money Supply. M2 Velocity dropped from 2.15 to 1.95, and GDP kept declining.

Graph 120



Sources: MBS Mantra, LLC, Bloomberg

To review, Japan had cut its rates to 0% in 1999 as wages were now deflating. This triggered a turn in Japan's SFI, which started declining rapidly and has not stopped since - see graph 67 - from over 60% of M2 to 35% by 2015.

Once Japan entered a Liquidity Trap, the Japanese had nothing to lose, and invested overseas with all their excess money supply (65% of IC), dominating the money supply and policies of all other economies.

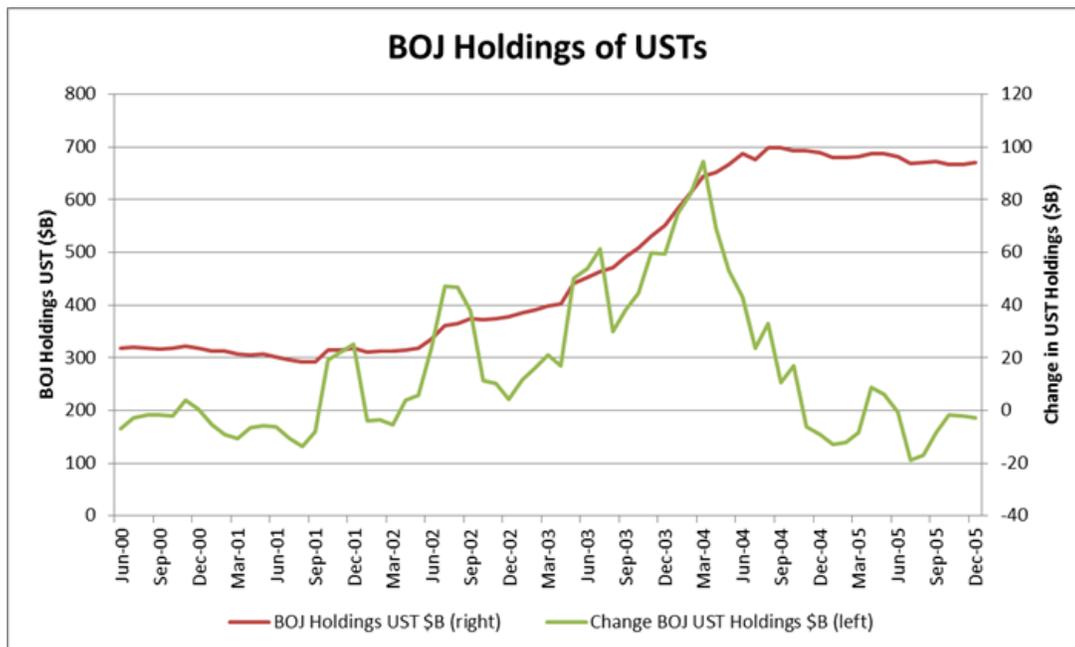
Coming back to the US, the common perception is that Greenspan's cuts finally worked in 2003, and Money Supply Velocity starting rising again in September 2003. **This is an incorrect understanding of the events. Greenspan did not create the recovery in 2003.**

Japan's economy had continued to deteriorate, and in 2002, **Japan embarked on more QE, this time increasing**

its purchases of US Treasuries, which increased by \$400B, an astounding amount! QE must not have been well understood by Japan's economists, as this resulted in QE for the US instead of for Japan, and was responsible for turning the US Economy around!

You can see this capital export in SFM-Japan, which rose in spite of a low YCI.

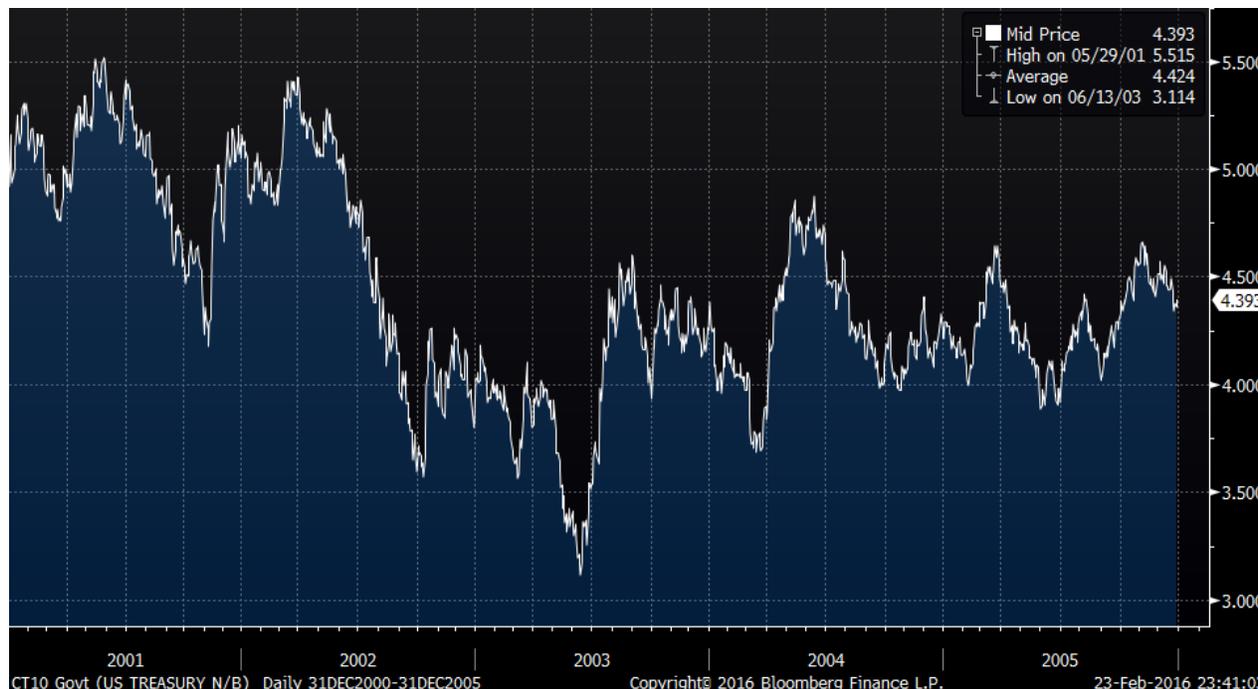
Graph 121



Sources: MBS Mantra, LLC, Bloomberg

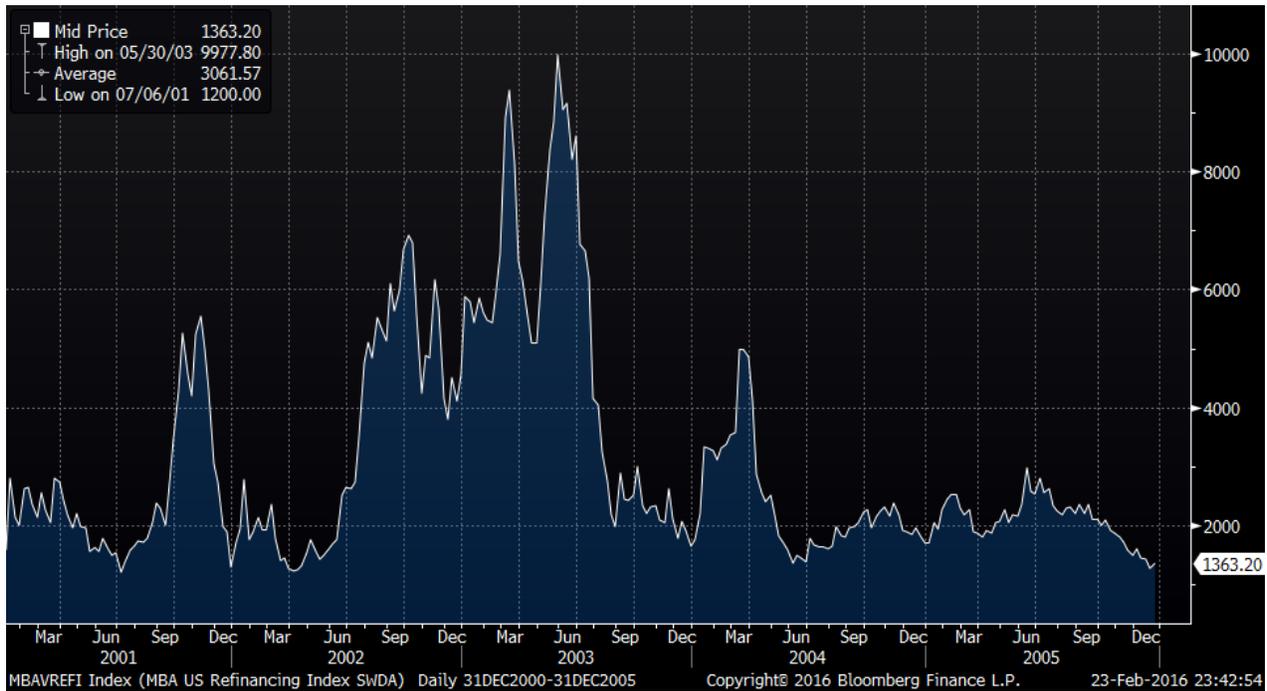
The results for the US were spectacular! **The purchases of USTs led to a drop in 10yr yields and mortgage rates, triggering a mortgage refinancing boom that lasted into mid-2003, when Japan stopped buying USTs. This also resulted in US GDP, CPI and M2 velocity all rising.**

Graph 122
10yr US Treasury Yield



Sources: MBS Mantra, LLC, Bloomberg

Graph 123
MBA Mortgage Refinancing Index



Sources: MBS Mantra, LLC, Bloomberg

Graph 124
FNMA "Current Coupon"



Sources: MBS Mantra, LLC, Bloomberg

The 2003 recovery forced Greenspan to raise rates to curb inflation and the increasing Money Supply (unknowingly from Japanese QE).

The BOJ stopped buying USTs when Greenspan raised rates. This led to 10yr yields rising, and the end of the Refi boom.

However, this resulted in the YCI rising again, and Japan took the cue, as SFM-Japan rose, and the Yen Carry trade was on again!

Along with higher rates, GDP, M2 velocity and inflation also started going up - CPI increasing must have surprised Greenspan, since his prior policy decisions had not impacted CPI.

This had the opposite effect to the one desired by the Fed: the increased money from Japan, led to increased Samurai bond issuance, resulting in the ballooning of bank balance sheets to maximize the usage of their increased capital base, and once again driving up the prices of stocks and other assets.

This ballooning of bank balance sheets ultimately resulted in the creation of assets to meet the need for investments, resulting in the ballooning of Subprime loans, not to mention CDOs and other asset classes. We know what happened next. As discussed in the Crisis Notes, there were other factors, such as Basel, that facilitated the creation of securities.

The construction boom that started in 2002 continued till the Great Financial Crisis, fueled first by cash out refinancings originating in Japanese QE, and then by the Yen Carry Trade.

It is important to understand that there were two sources of Carry that impacted this period: first QE from the BOJ's UST purchases, followed by Yen Carry from Greenspan's rate increases in 2003.

- Without the BOJ UST purchases, I think we would have entered a deeper recession at that time, given the multiple of the S&P to GDP. This period's negative economic performance could have been avoided if Greenspan had not cut rates in the first place.

- Without the Greenspan rate hikes in 2003, we might have reverted to a recession, assuming that the stoppage of the BOJ UST purchases was an exogenous event - they had already purchased about \$400B USTs. These rate hikes can be blamed for creating the fuel for the Great Financial Crisis.

Once Japan was in its Liquidity Trap, Greenspan's rate cuts had the opposite effect to what was predicted by Macro Economic Theory.

- Rate Cuts resulted in declining Money Supply in the US;
- Rate Hikes resulted in increasing Money Supply in the US.

An Economy does not need to be in a Liquidity Trap to receive QE. QE results from any external country purchasing your bonds, and can increase your Money Supply, and vice versa. This can allow you to also lose control of your Money Supply, and increases in foreign purchases of bonds results in Asset Inflation, but can also result in Price Inflation.

The US was now fully a Carry Recipient Economy, and had lost control of its Money Supply, and thus Monetary Policy. Or at least, did not understand it anymore. Almost all other Economies were in a similar situation.

Traditional Macro Economics Policy had inverted, thus proving the [Shah Theorem postulated in 2009](#):

"When One Economy Enters a Liquidity Trap, All Monetary Policy Fails Globally".

This resulted in the YCI rising again, and Japan took the cue, as SFM-Japan rose, and the Yen Carry trade was on again!

2005-2015 - The Great Financial Crisis to the present

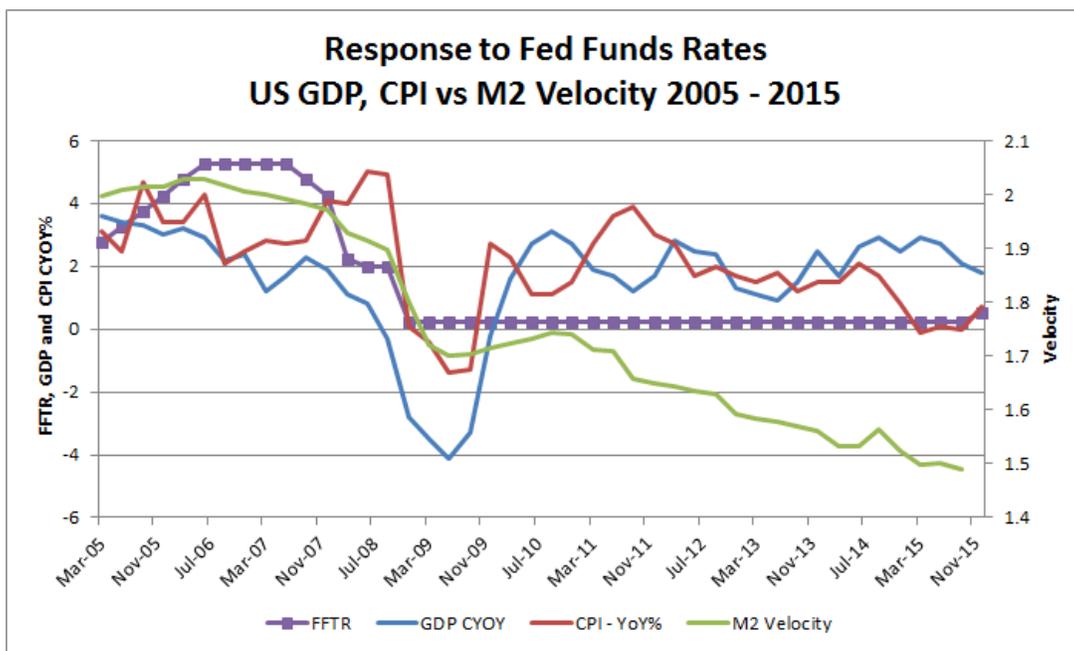
I have described above how Greenspan created the fuel, using money from Japan, for the Great Financial Crisis.

Let's now examine how the fire was started, and who sparked the match that got the wildfire going.

In January 2006, Ben Bernanke was appointed Chairman of the Fed, replacing Alan Greenspan.

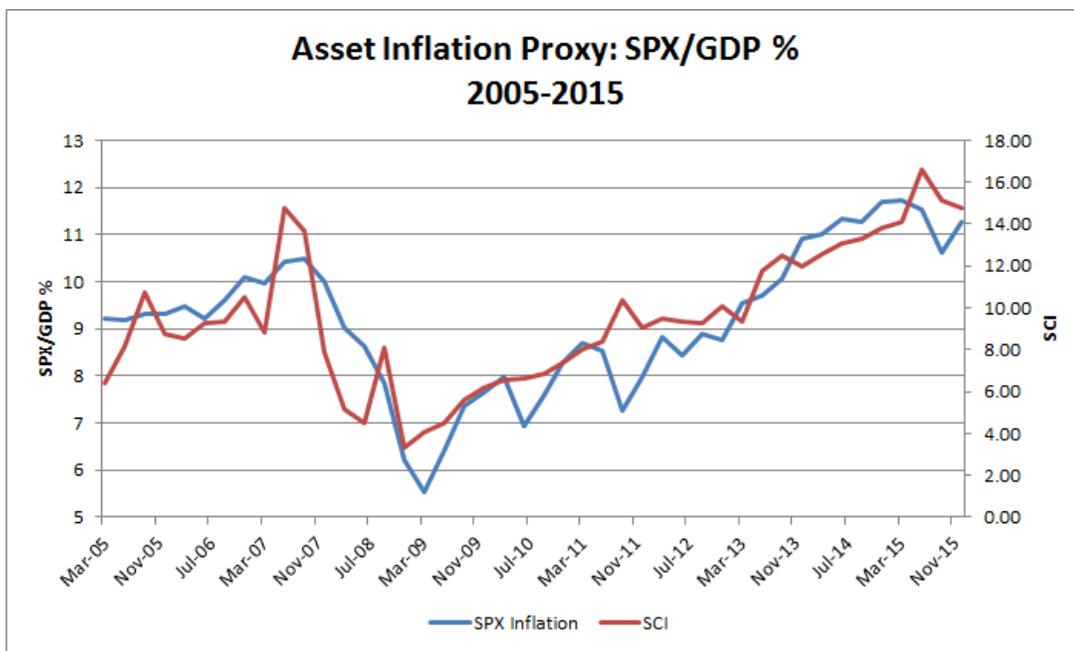
The start of the next graphs show the situation in 2006 - Asset Inflation was high at approximately 9% of GDP; Money Supply Velocity was still rising, CPI was stable, but GDP was declining. And of course, the Yen Carry Trade was still pumping money into the system.

Graph 125



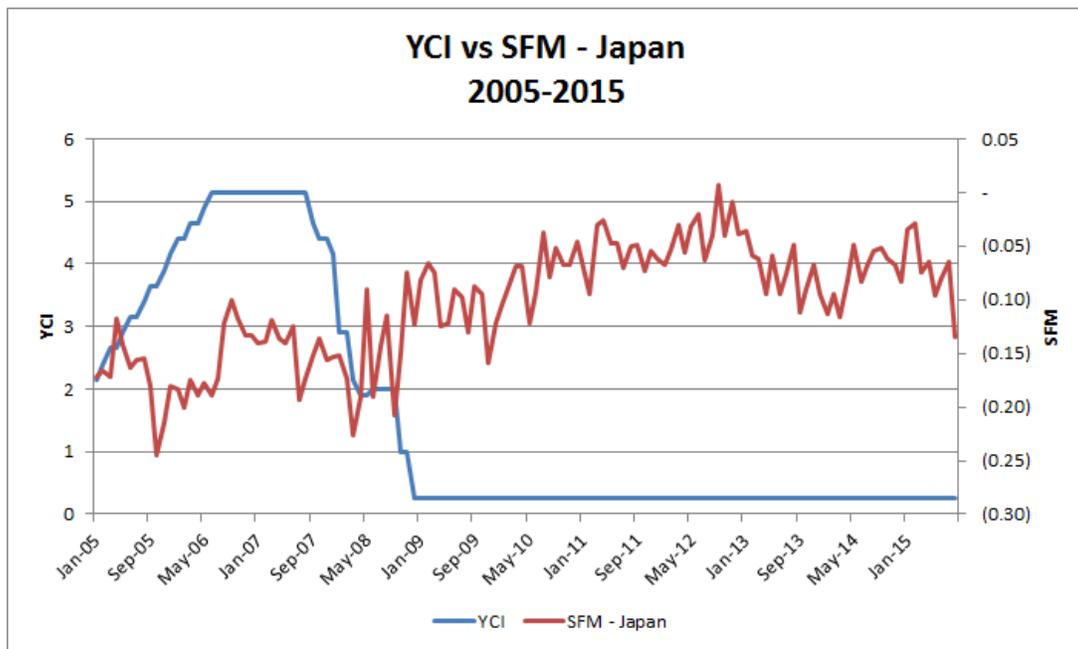
Sources: MBS Mantra, LLC, Bloomberg

Graph 126



Sources: MBS Mantra, LLC, BEA, Bloomberg (I have switched to a different GDP series, since the IMF series used in previous graphs, only went to 2012.)

Graph 126



Sources: MBS Mantra, LLC, Bloomberg

In 2006, SFM started showing signs of fatigue, and in August 2006 it rose to -0.10 from from -0.16 in June. This likely resulted in a slowdown of M2 velocity and GDP.

On August 17, 2007, Bernanke cut the Discount Rate for banks to borrow.

On August 29, 2007, I wrote a [Crisis Note](#), giving the correct policy prescription for avoiding a Crash.

On September 18, 2007, Bernanke cuts the Fed Funds rate aggressively by 50bps, triggering the Crash (or striking the match, using the analogy above).

"Today's action is intended to help forestall some of the adverse effects on the broader economy that might otherwise arise from the disruptions in financial markets and to promote moderate growth over time," the Federal Open Market Committee said in a written statement.

I will now prove to you that Bernanke triggered the Crash

We have already seen the strong relationship between the SFM-Japan and the Yen. While we cannot directly observe the daily micro-economic decisions in Japan in response to US rate moves, we can infer them from the Yen/\$, which determines the price for money movements between the US and Japan, and reflects demand (Japan lends) and supply (Japan withdraws lending) for the US Dollar.

The following chart shows the Yen prior to and after these rate decisions. Basically, after the rate cut, there was a knee-jerk reaction as the market believed that the Fed could control things.

However, in a month (and I don't understand why there is this lag, maybe when the Japanese get their monthly brokerage statements?), **the Japanese reacted to the reduction in YCI, and started unwinding USD positions, seen in the Yen/\$, resulting in the the Great Financial Crisis, and a withdrawal of an estimated \$1.5T in leverage.**

Graph 126

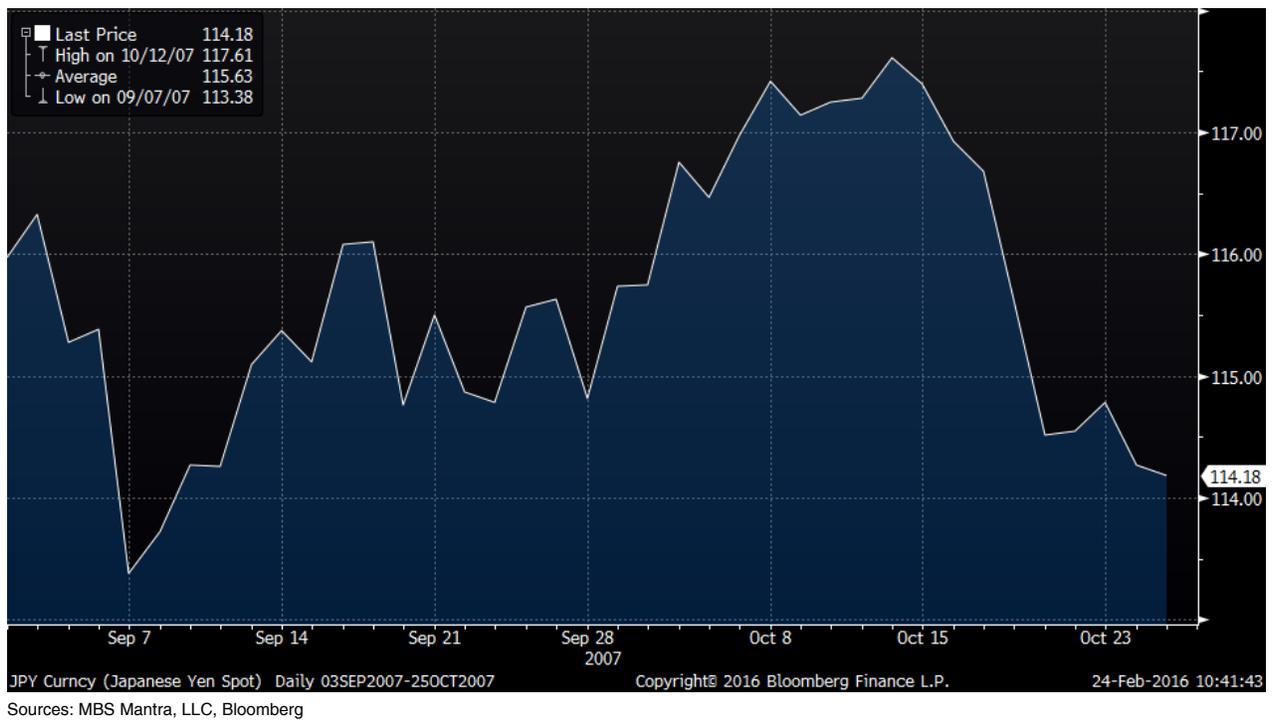
Yen/\$ - June 2007 to November 2007 - Daily close



A closer look at the days following the rate cut - Yen/\$.

Graph 127

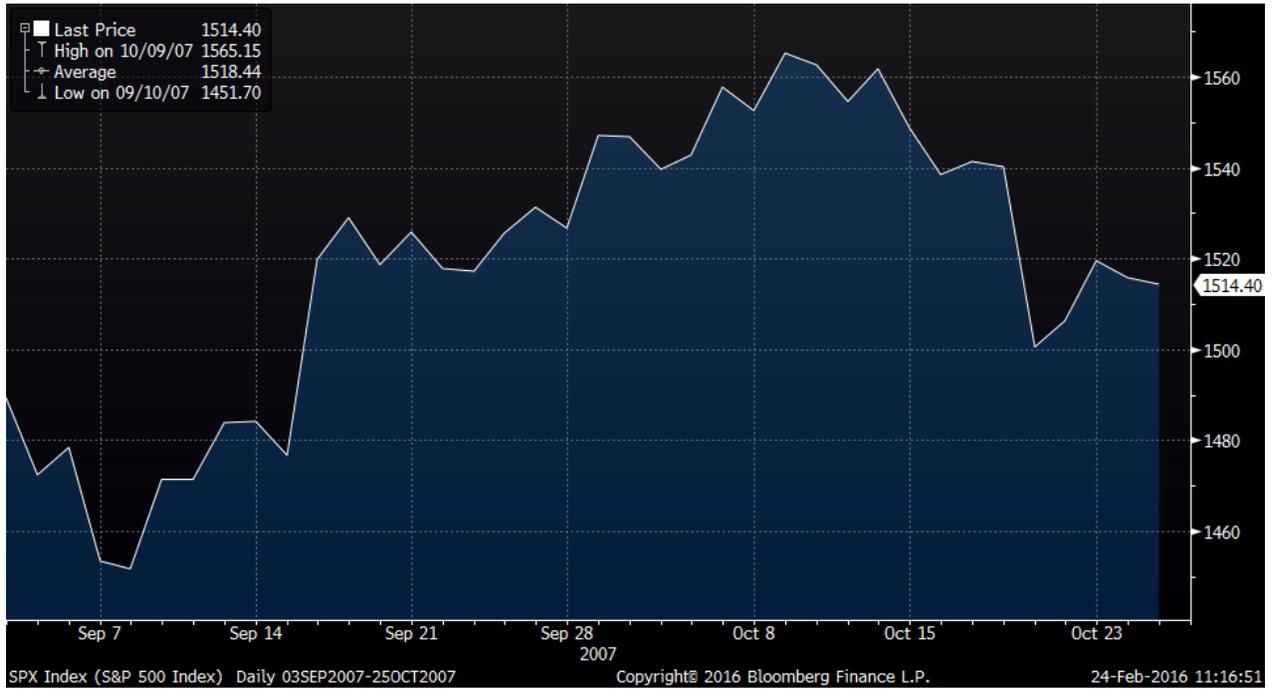
Yen/\$ - September 2007 to October 2007 - Daily close



A closer look at the days following the rate cut - S&P.

Graph 128

S&P Index - September 2007 to October 2007 - Daily close

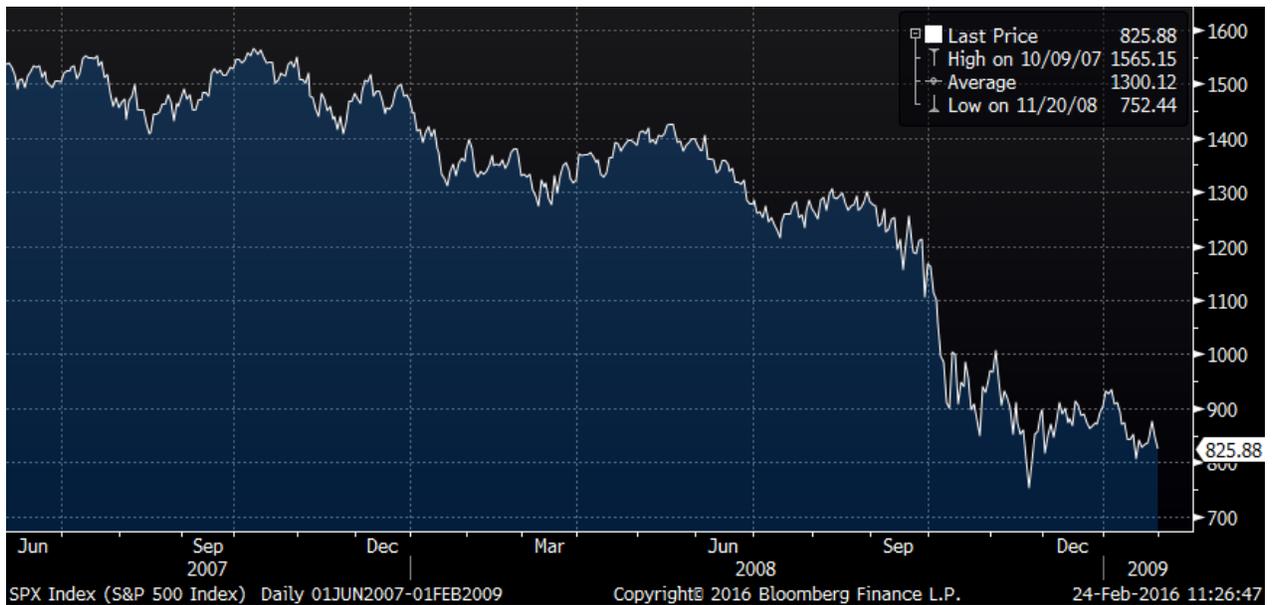


Sources: MBS Mantra, LLC, Bloomberg

The rest, as they say, is history!

Graph 129

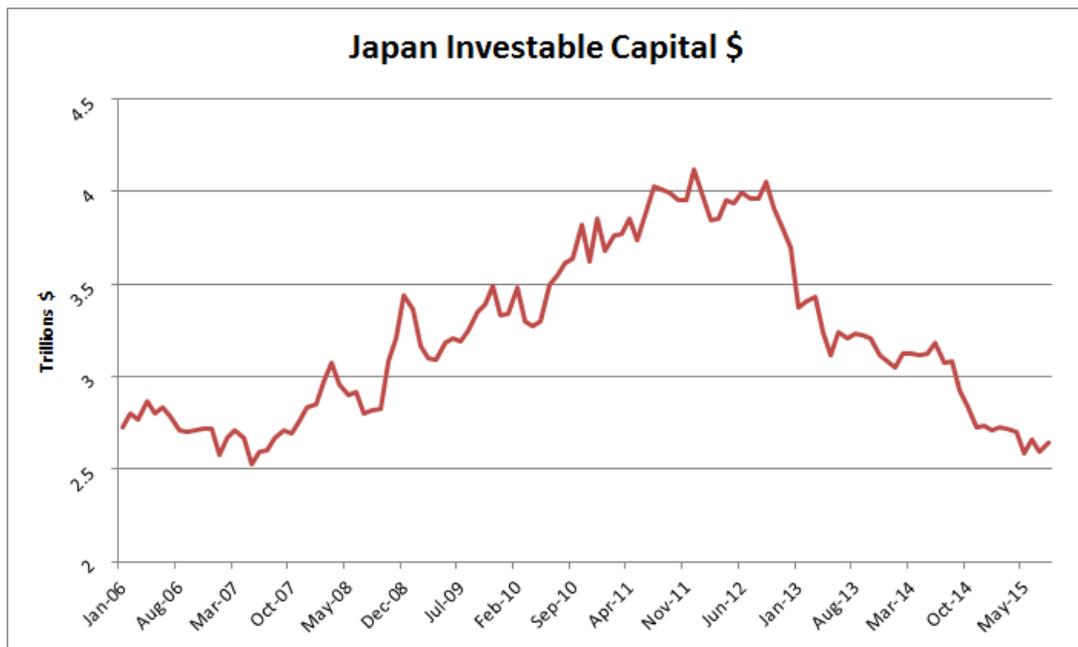
S&P Index - June 2007 to February 2009 - Daily close



Sources: MBS Mantra, LLC, Bloomberg

Once again, this graph shows the resulting Japanese withdrawal of capital from world markets.

Graph 130



Sources: MBS Mantra, LLC, Bloomberg

The data presented above convinces me that my unconventional view, originally expressed in my Crisis Notes, is still the right way to think about Economics and Financial Flows.

- **Macro Economics has changed - Interest Rate Policy is now inverted.** All traditional responses to economic conditions will have the opposite to desired effect.
- **Alan Greenspan allowed the bubble in US Assets to form** (note, not just subprime but all US assets, especially equities) by not understanding that the US was a Carry Recipient Economy, not understanding the sources of US Money Supply, and not understanding that traditional Macro Economic Policy theory and management had failed, and had in fact inverted.
- **Ben Bernanke triggered the Great Financial Crisis by cutting rates**, due to Bernanke and the Fed not understanding the change in Macro Economics, and instigating a rational response from Japanese investors to unwind the Carry Trade.

What could Bernanke have done differently?

In the [Crisis Note](#) I referenced above, titled 'Rate Cuts Will Not Work', I made the following two recommendations, on August 29, 2007. Selecting excerpts:

- 1) **What's needed is a Reserve Requirement Cut.** A cut in this will allow banks to lend more and increase the size of their balance sheets. It will also lead to a drastic expansion in money supply, and will probably lead to inflation.
- 2) Well, how about **RAISING the Fed funds rate simultaneously.** Now, I'm not only out on a limb, but over a precipice!

The reserve requirement cut will allow banks to find the balance sheet for all the trillions in excess assets that we've created over the past 5 years. And the RATE RISE, will help dampen inflation, and also allow Mrs Watanabe (and the hedge fund community) to happily continue shorting the yen to support our stock markets. This will defer the yen carry trade liquidity problem for some time, and allow the central banks of the world to deal with it later. In fact, it may allow the BOJ to raise rates, as it's been hinting it wants to do.

I still believe that these recommendations, especially to keep the Fed Funds rate stable, or even raising it, would have prevented the Global Great Financial Crisis, and would have instead localized it as US Real Estate or Subprime Crisis.

Conclusion Section 3: The Failure of Macro Economics

In a global market for capital, where capital can move between economies, management of the economy through Interest Rate Policy no longer works for a country attempting to boost investment, money supply, and inflation. The traditional monetary policy models, as exemplified by the ISLM concepts, cannot achieve their desired results to increase domestic money supply, and thereby inflation, as money supply flees overseas to seek higher returns. Such Policy Management results in stagnation and deflation in the domestic economy.

When a large Economy enters a Liquidity Trap, its citizens rationally export much of their available capital to seek higher yields, thus linking Micro-economic decisions with Macro-Economic implications. Recipient Countries of this Carry-driven money supply lose control of their domestic interest rate policy, and their attempts to control money supply result in outcomes that are the opposite of what is desired. Economic output in these countries rises to the point of saturation of needs (a subject for further research), after which the money supply results in Asset Price Inflation, Bubbles, and creation of excess assets to meet the need for investment. Traditional financial valuation models cease to be useful and rationalizations abound for investing in assets with inflated prices.

Quantitative Easing is not well understood. While QE, as executed by Central Banks, is a special type of asset purchase to inject Money into the Banking System in order to increase Money Supply, QE is more simply understood as a form of Carry that is unrelated to interest rate differentials.

Domestic QE can perform the same function as a higher interest rate (which would attract traditional Carry), as it can cause Asset Inflation. Even without an Interest Rate differential between two countries, Asset Inflation leading to positive total return performance will attract foreign money for those asset classes. Thus, recent US QE has led to Yen weakening and SFM-Japan going down, in spite of no rate differential between the 2 countries, and thus the high correlation between US Stocks and Yen persists.

Any form of foreign asset purchases from a creator of money is a form of Carry, serving the same function as domestic QE to the Recipient Economy. An example would be the purchase of US Treasuries by a Foreign Central Bank, such as the BOJ, but if the BOJ purchased US stocks, or US Real Estate, or took a US company private, that would count as well.

Failures of Macro Economic Policy occur due to the failure of Central Bankers to fully comprehend the global nature of Finance and Economics. Economists appear to be too specialized to look up at the world and see how it has changed since they studied the theory. This results in misuse of Economics, at the expense of the world. Until there is a dramatic rethinking of currencies, asset flows, trade imbalances, price levels, and interest rates, the world is headed into a quagmire that it will not easily be able to extricate itself from.

Section 4: Topics of Present Concern

"The New Normal"

I had forgotten that Dr. El-Erian had coined this phrase. Quoting from his book, "The Only Game In Town", I agree with him that the current state, of "low growth, rising inequalities, political dysfunction, and social tensions" is here to stay.

However, I do not agree that this Normal is "New". I do not believe that he or other economists have looked at all the factors or linkages that I discuss in this monograph. In all fairness, I have not found a single other economist that has looked at monetary policy and its implementation in the manner that I have. Once you join the links, you

should find that the path the world started on in 1999 would have predictably led us to where we are today.

In my view, there is no "New Normal". The "Current Normal" is the same as the "Old Normal". The Normal did change, but that was in 1999 when Japan entered its Liquidity Trap. PCE peaked in 2004, which is maybe another alternative date you could use for when the New Normal was born. 12 years or 17 years is splitting hairs - both are long enough for the New Normal to be called just Normal today.

The proof? SCI. The Shah Carry Indicator explains almost all Economic Activity and Pricing for the past 20 years. Almost everything that happens can be modeled and understood using this framework.

Negative Interest Rates

Negative Interest Rates are no different from any other policy rate, except they have a societal dimension to them.

From a pure Economics perspective, they will have the same effect as any other rate cut, which which is to say none, since Japan is already in a Liquidity Trap, and the monetary policy of most other countries has already failed. In such a situation, the only thing that can lead to Asset Inflation is QE.

However Negative Interest Rates do have a significant Societal impact. As long as a citizen is free to invest in other markets with higher returns, people will tolerate zero domestic returns. Such has been the case with Japan.

Think about it as an individual yourself. You have a checking account that earns zero - how much do you keep in it? I keep enough for my near term transactions. As I described above, this is M2, with some additional near-cash buffer in M3, for example, to tide you over in case of job loss. You are willing to invest the rest, overseas if necessary. This explains, for example, why Japan's IC can go down to 35% of M2.

If however, your government is penalizing you for having a checking account then, no matter what you do, your resources dwindle with time, and you have no control over it. You cannot tighten your belt and reduce your expenses to compensate. To an individual citizen, this appears to be theft by the government - you worked, paid taxes, and saved your money, and now it is being taken away. This gives citizens rage and can result in government overthrows.

I suspect a country can only implement negative rates without political consequence if they a strong social backstop and pension system. Not that any country should want to, since it won't have any impact on Money Supply.

Negative rates in Japan will have the opposite effect and force more assets out, which will likely benefit the US. Populations of retirees might migrate making the real domestic economy worse.

Deflation, and why Global GDP has stalled - "Peak Stuff"

Most comments I have read about deflation discuss central bank negative rates as indicating that central banks are not in control and therefore, if inflation does not result, then deflation will. These are mostly sound bites, without foundation.

When people are discussion Deflation, they are usually referring to the CPI, and often GDP growth. They should also be discussing Wages and Asset inflation and deflation.

Deflation occurs as Money Supply is diverted from the domestic economy, either into Asset Inflation, or Overseas Capital Markets, or Asset Inflation overseas. You can follow M3 and M2 Money Supply to see if this is happening inside or outside an Economy, by using SFM and Stock/GDP ratios.

If money supply is retained in an economy, then it will be divided between GDP creation and Asset Inflation creation. This split will be determined by whether the economy has satiated its demand for goods through the purchasing of goods during previous expansions. Wage growth will also play a factor, and that will be determined by supply of labor through population growth, relative wages between countries for manufacturing, and other

factors. This is not a trivial topic for a sound bite.

However, observing historical GDP trends is likely to be enough to judge when an economy has peaked, after which additional money supply will lead to Asset Inflation. I suspect that the US is in this latter camp. Without GDP growth, we are unlikely to get wage growth either.

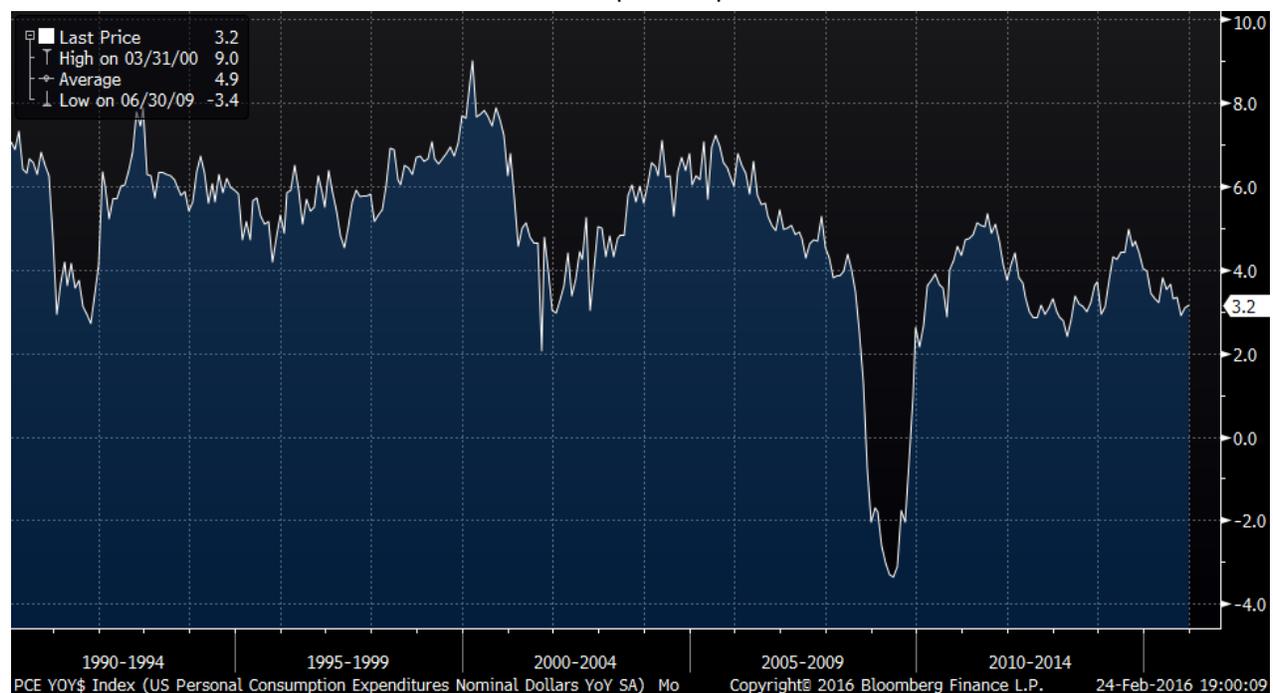
In today's world, Asset Inflation and Deflation are determined purely by QE.

As long as Asset Inflation is not part of CPI, CPI is likely to remain stable, since GDP today is being determined by a replacement cycle (my opinion - we built and own enough stuff in the years leading up to the Great Financial Crisis), not an investment cycle, and is unlikely to grow very fast any more.

This graph gives hints about what I mean - compare Personal Consumption pre-Yen Carry (pre-1994) - around 6%, post Yen Carry in the 1990s - grew to 8%, 2004-ish grew to 6% and then declined to 4% by 2008. This decline from 2004-2008 is indicating to me that we have hit "Peak-Stuff", and that we did so in 2004 in spite of a growing economy and growing money supply. Currently we are back at under 4% PCE growth. I do not think US GDP growth is going anywhere soon.

This is likely for other industrialized nations too - all benefited from the Yen Carry trade, and their GDPs expanded at the same time ours did.

Graph 131
US Personal Consumption Expenditures YoY%



Too Big to Fail Banks

This is connected to the concept of "Peak Stuff". We should have never bailed out the banks, as we did, and still have too much banking capacity for the size of our economy and GDP growth. We need to get rid of their implicit guaranty by explicitly announcing that it has been withdrawn, and that if a bank takes risk, it does so on its own. This will limit bubble creation, as CEOs of banks and investment banks will have to be more prudent with risk taking. The current Oil debt potential Crisis would be a great time to test this.

Another way to shrink banks is to eliminate Samurai bonds as sources of capital.

I made the following recommendation in [Crisis Note 2008-04](#):

Until we close our economy to foreign financial flows (I don't believe this will happen, I'm a Chicago school geek!), the correct things for the Fed to do is to continue focusing on financial price stability - by taking the things that have worked (TAF, etc. - providing balance sheet and emergency funding to IBs) to their logical conclusion - charge investment banks for the insurance, treat them the same as banks, and deal with the risk and capital requirement issues of off-balance-sheet structures. In other words, eliminate itself as a central bank, and become a regulator.

"Japanese Reflation" - seems to have been a "Trade-du-Jour" of Macro Funds

The "Japanese Reflation Trade" will not work under current economic system and economic policies. In order for this to happen, significant policy changes need to be made to repatriate capital back to Japan in an orderly manner, allowing its money supply to inflate and thus create domestic inflation. Negative rates certainly will not accomplish this.

It will be trivial for Japan to reflate, if it learns from this paper. All the BOJ has to do is raise the deposit/call rate, say to 5%. The world will experience a sucking sound like it has never heard before, as all the capital in the world rushes to Japan.

Doing this, however, will result in huge implosions in global capital markets in the rest of the world, as their assets delever and prices collapse. **This is why I believe that Japan poses the greatest risk to financial markets and economies. One has to follow Japan if one is investing.**

Social Implications

One of the primary effects of Macro Economic failures is Income Inequality. Those that control assets benefit greatly from Asset Inflation, often in a levered manner, leaving others behind. This is increasingly becoming a significant social issue.

I suspect that Birth rates in Trapped Economies stall out because the Economies are in a Liquidity Trap. Such is the case with Japan. Without a vibrant and growing Economy, one does not have hope in the future - people do not marry and do not have children. Birth rates plummet, leading to a downward spiral. A topic to be investigated later. Southern Europe as well?

China

I have not thought too much about China, as their links to the world are not Market Based, and it is hard to analyze. In addition, **I was more interested in analyzing the US economy, but it turned out that the best way to do that was by analyzing Japan.** So what I say about China is an opinion that has not been well researched.

Unlike Japan, whose savings and Trade Surpluses have been invested overseas in Securities and Leverage providing, China appears to have been buying hard assets with its surpluses. The most interesting thing about China, to me, is its UST portfolio - China is the the largest holder of USTs, but barely ahead of Japan. If they are forced to sell this portfolio, it will cause some ripples, but as I discussed in my [Interest Rate Swaps](#) article, negative swap spreads suggest that USTs are cheap. US and European investors will buy them - the US 10yr yields more than Italy's 10yr.

In addition, I view China as a symptom of the Yen Carry Trade - they would not have a surplus if Japan had not lent us the money to boost our GDP for 20 years! That is not to say they are not important. However, I don't think they will add explanatory power to this analysis.

Japan owns, or at least has claims on, far more of our economy's debt than China, once one factors in private debt. One of the things I learned in Merton Miller's class at the University of Chicago was that debt is a call option on equity - Japan has far more power over the US than China in this regard, if it chooses to leverage it. This is why every US dignitary that goes East visits Japan before China.

Some investors are worried about China's banks. I think this is unfounded for multiple reasons. China's

economy and currency do not float. They can easily close their borders to currency flows, buy out all domestic bank debt, and create domestic inflation to create a soft default. They can also mandate debt extensions - replace all debt with 0% perpetuals for example. In the same manner that the US bailed out its banking sector, China can and will likely bail out theirs, especially since it appears that much of the Credit expansion was mandated or at least tolerated by the government in the first place.

Further Analysis and Research

- Trying to identify the trigger points at which Carry Flows reverse.
- Modelling the post 2010 money supply sources to separate effects from US QE, foreign QE, USD Carry, etc, to identify the importance and coefficient of each source of Carry in the SCI.
- Model Japan's SFM more comprehensively.
- Find a substitute for US M3, so current SFM-US can be modelled.
- Investigation of USD Carry exports due to the US entering a Liquidity Trap
- Investigation of Liquidity Traps going viral to other economies in addition to the US

Policy Brainstorming

- **The importance of Japan's debt and equity investments, and capital export in general, cannot be overstated. The result of 22 years of Yen-Carry Capital Export is a world that is extremely out of balance.**
- **The speed with which the global deleveraging occurred in 2007-2009 makes Japan the biggest risk to global economies as well. If Japan raises rates, the world economy will implode.**
- **The only way to rebalance the global system is Very, Very Slowly.**

There are no easy solutions. Every possible measure is likely to meet some resistance. Here are some suggestions. Some of these are from my [2008-06 Crisis Note](#).

- **A recognition from Central Bankers that investors do not respond positively to punishment, only to incentives. If a Central Bank wants more money supply, it should pay for it by raising rates, not punish investors to take more risk by lowering rates. If you have a child, you know that punishment does not work with human beings. Abused children run away.**
- **Limit the damage to Japan.** Japan can easily unwind and cause a huge global meltdown, so treat it carefully.
- **Interest Rate Policy - this does not work. Time to get rid of it globally by getting rid of interest rate differentials. Set a global coordinated rate, say at Inflation + 2%, or some fixed number that is positive.** This will ensure that savers are compensated for lending out their capital, and that Carry Trades become a thing of the past.
- **Penalty and negative rates - this does not work.** You cannot force investors into investments when there are no returns. Leave the market alone, and let it respond to investment opportunities and business plans, if there are any.
- **Set up currency swap agreements between governments.** This will make all currencies equally secure, and eliminate flights-to-quality. I believe some of these were set up after the Crisis.
- **International Trade Pacts to have zero trade surpluses or deficits** - prices and wages will be allowed to adjust to do so.
- **Stop international sales of Sovereign bonds**, that can distort Money Supply in a local economy. No more external QE.
- **Banks only funded with Domestic Capital and Bonds.**
- **Allow Japan to go on a spending spree for Global Equities and hard assets to carefully unwind its capital exports.** Convert its debt into credits, that could allow it to purchase companies that might be strategic partners for it. A good example would have been an Auto company during the Crisis. This would have reduced Carry unwinding by billions of USD, and would not have necessitated US bailouts, and given Japan new export capabilities.

Potential Policy changes for Japan

- **Japan has a very difficult balancing act to perform in the future, if it does take heed of the information in this document.** Japan needs to export, to maintain its manufacturing capability for defence. So, **it cannot afford to destroy its trading partners economies** by withdrawing capital from them. On the other hand, it needs to attract money supply to generate inflation within Japan.
- **The government must make sure that future capital export is limited.** A separate internal currency that cannot be exported - only usable for consumption?
- **Direct deposits into bank accounts** to increase money supply, in conjunction with a currency only usable for local consumption.
- **To generate inflation, Japan could raise rates a little to repatriate money supply, with caveats on the amounts it will allow back.**
- **An inverse death tax - all repatriated money will be multiplied for the next generation. This might increase birth rates.**
- **All domestic bond purchases get an extra principal payment on death from the BOJ.**

Carry Trades in the Press

There has not been much discussion of the Carry Trade in the US press or TV. Various news sources do mention it, but it is so infrequent, that I am not sure how seriously this reporting has been taken. None of seem to quite understand the magnitude and importance it has.

Forbes, on September 4, 2014, finally had an article on Carry trades, to discuss the impact they were having on Emerging Markets.

<http://www.forbes.com/sites/investor/2014/09/04/carry-trade-the-multi-trillion-dollar-hidden-market/#739c63a0761c>

Barron's has discussed it many times, and a google search for "yen carry" found articles from a few days ago, August 2015, 2006 and 2001. The Barron's articles prior to 2007 had some interesting insights and quotes from prominent hedge funds, but the warnings appear to have gone unheeded.

<http://www.barrons.com/articles/rout-reveals-monetary-policy-dependence-1440431848>

<http://www.barrons.com/articles/SB116596521970248130>

<http://www.barrons.com/articles/SB50001424052748704878904578539353020226698>

<http://www.barrons.com/articles/SB116138320226999437>

<http://www.barrons.com/articles/SB984177852792122822>

The Wall Street Journal (WSJ) had a primer in 2007 (that I missed at the time),

<http://www.wsj.com/articles/SB117311273453827125>

followed by this in 2012 - Yen Play is Blast from the Past

<http://www.wsj.com/articles/SB10001424052702303812904577291651949362114>

and some more articles since 2012.

<http://www.wsj.com/articles/SB10001424127887324240804578414470218189706>

<http://blogs.wsj.com/moneybeat/2014/11/17/macro-horizons-japans-weak-gdp-puts-yen-carry-trade-in-focus/>

The FT also does periodically refer to it.

In addition there have been numerous blog postings by a variety of people, so I am not the only one attempting to raise awareness of this issue, even though I discovered it on my own.

Much more discussion of Carry Trades occurred in the 1990s, especially after Tiger Management blew up in 1998 ([discussed below](#)). However, most of today's current market participants, especially in the US, appear to be unaware of it.

Most economists that study the Yen and Japanese Financial Policies do so in the context of why Japan cannot create inflation, Liquidity Traps, Japan's Lost Decade(s), and Japan's fight against Deflation. Very few make the connection to the Carry Trade. For example:

<http://www.nber.org/chapters/c0092.pdf>

Paul Krugman is an US economist who is a Japan Expert, and he has discussed all the topics listed above, and the Carry Trade, but once again, does not appear to have connected them.

<http://web.mit.edu/krugman/www/jpage.html>

http://www.slate.com/articles/business/the_dismal_science/1999/11/tigers_tale.html

Prior to 2012, the Yen, or Japan, were rarely mentioned in the Wall Street Journal or on American business TV, or acknowledged by economists, displaying American belief and even arrogance in the American economy being the dominant global economy and being isolated from other global forces, and having its own valuation metrics. As Paul Krugman points out, most economists in the 2000s, including Ben Bernanke, believed the Business Cycle and Macro Economics to be “solved”.

During the Great Financial Crisis, Australian newspapers and economists (especially Gerard Minack) were far more keenly aware of the underlying economic events than American papers and TV. There has been some progress on awareness of Yen (it now shows up on TV sidebars nowadays), with journalists still ignorantly identifying it as a ‘Safe Haven’ on days the markets are selling off, as opposed to THE cause for movements in US Stock markets.

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