Are Financial Bubbles Building?

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Developed country policy produced massive amounts of liquidity

The US equity market has appreciated 160% in the past six years, and contemporaneously 10-year Treasury yields have fallen from 4.85% to 2% providing large positive returns to bond holders. All this occurred while the Federal Reserve kept its official rate near zero and purchased $3 trillion of outstanding Treasury and Federal agency backed mortgage securities. Now the European Central Bank has belatedly decided to join the acquisition race and announced that it intends to purchase 1 trillion Euro of government-issued Euro bonds.

The ECB’s actions have rescued the Euro stock market and it has appreciated by 28% over the past 6 months. More importantly their actions have pushed Euro sovereign bond yields close to mind numbing low levels.

Meanwhile, the Bank of Japan has continued in its efforts to improve Japan’s economic growth and rescue the economy from the long-term grip of deflation by purchasing enormous quantities of Yen-denominated government bonds. Naturally, yields on Japanese bonds are near zero.

The Fed funds futures market discounted rate hikes for 1 year

All of these developed country central bank actions have created an enormous pool of liquidity that have flowed throughout the world without igniting rapid economic growth anywhere. However, they have
boosted financial asset values quite high, maybe a bit too high.

**What can we expect in the near term?**

In the US the Federal Reserve is on the threshold of raising its official policy rate. This intended action has been telegraphed for many months and should be integrated into all asset prices. Chart one reveals that the market for Fed funds futures has clearly discounted this move and several more this year. Consequently, there should be very little movement in bond yields as the Fed gradually sends official rates back to some semblance of normal. In the process the Fed will continue to extend the maturity of its portfolio by purchasing long government bonds as present holdings mature.

**Implied Inflation Expectations from 10-year TIIPs**

![Chart](attachment:chart.png)

Moreover, investor’s expectations for future inflation as determined from the Treasury 10-year TIPS market imply that inflation will remain low (1.65%) and more importantly, below the Fed’s inflation objective for the next ten years. As long as inflation expectations remain mired in such low territory, it will probably cause the Fed to adjust rates upward very slowly, thus preventing bond yields from rising very much.

**The ECB hoping for a Repeat a la Japan**

In Europe, the ECB is committed to keep purchasing Euro sovereign bonds until it sees economic growth materialize and inflation begin to rise. Therefore, yields on Euro sovereign bonds are bound to decrease further making them very unattractive to long-term institutional investors that need interest income to support their liabilities. In their search for yield more fixed income investors will gravitate to fixed income investments in the higher yielding US bond markets.

The ECB is hoping that the unattractiveness of Euro bond yields and the precipitous depreciation of the Euro triggers a similar response by European investors that accompanied the same policies made by the Bank of Japan (BOJ): a rush to equities. The Nikkei jumped 75% in the first year of Japanese easing. Thus far the Euro market index has appreciated by 28% since the start of aggressive QE by the ECB. More appreciation is very probable.
Sovereign Bond Yields in US Greatly Exceed Others

Yields no competition for stocks
Consequently, yields on bonds in the developed world will not offer realistic competition for stocks. Therefore, investors will probably retain their over weight positions in equity securities for a while longer. Even if the analysis is inaccurate and yields rise faster and higher than expected, returns on bonds will be negative penalizing investors that choose bonds instead of stocks.

S&P Forward PE Ratio slightly above average

Are stocks presently overvalued?
It is hard to determine whether equity markets are overvalued a priori. One traditional benchmark is the price earnings ratio. Presently, the P/E ratio of the S&P 500 index is hovering around its historic average whether trailing or projected earnings are used. Naturally this implies that the S&P500 index is not overvalued at its current level.


The ‘Fed model’
Another old-fashioned measure of stock value is the ‘Fed model’. This model developed in the 1990’s and used on occasion by former Chairman Greenspan to describe the stock market has lost much of its analytic worth. This model postulates that the S&P 500 index should trade around the ratio of its projected earnings divided by the yield on 10-year Treasury securities. For a long time (1970-2000) this quarterly ratio was reasonably consistent with the index’s value, and then it began to diverge. In the following chart I estimated this ratio using data from 1970 to 1990 and as expected the correlation was quite strong. I then used the coefficients and projected the S&P 500 index through 2014 out of sample. This ratio remained quite useful until the debt
crisis in 2007. It then completely lost its relevance to the S&P 500 in the debt crisis and its aftermath.

**An Improvement in the model**

One simple attempt to make the model more relevant was to use the after-tax corporate bond yield instead of the yield on 10-year Treasury securities. The reason underlying this choice was to capture a change in the SEC’s ruling on capital structures that made corporate stock share buy backs legal in 1982. Gradually more corporations engage in financial engineering to improve their return on equity in the following decades. Using this yield in the model’s ratio the relationship to the S&P500 improves significantly, as shown in chart 6, as corporate financial experts engaged in more diverse capital structure engineering.

![Original Fed Model Becomes Irrelevant](image)

While it is a better relationship with the S&P500, it continues to highlight the effects that abnormally low interest rates have had on stock price models. If this model has any present use, it does indicate that current stock prices are below this model’s value.

**The rise of the dollar**

As central banks in all the developed countries continue to create liquidity through massive amounts of quantitative easing and simultaneously lower the structure of interest rates, they depreciate their currencies against the dollar. Emerging market countries’ central banks have followed the lead and lowered their interest rates to avoid attracting international funds and to prevent their currencies from appreciating. Consequently, the currency that has appreciated the most is the US dollar.

![US Profits Stumble When TW$ Appreciates](image)

In past periods of significant dollar appreciation there has been a tendency for US corporate profits to deteriorate. If a stronger dollar does inhibit US manufacturers’ global competitiveness and the US trade deficit widens causing GDP growth to decelerate, then it will probably also prompt the Fed to slow its efforts to raise their official policy rates. A weaker
economic growth trajectory will also harm growth in most emerging markets as the US is most countries biggest customer. This will only lead to further monetary ease in the affected emerging markets and greater capital flow to the US. This is not an encouraging spiraling outcome for equity bubbles.

**It is the era of deflation**

The deflation era we are in creates a new issue for investors that have coped with uncertain outcomes and how to hedge against them. Deflation is an unknown. Investors have not had much experience with deflation. The most important example of deflation in the modern era has been in Japan when deflation prevailed over the past two and one half decades. For nearly that entire time period stock prices declined and remained at extremely low levels. In the past year the Japanese equity market mounted a partial recovery because the Bank of Japan engaged in unrestrained quantitative easing.

**What about the future**

In the past 6 months the BOJ and the ECB announced and executed aggressive QE. There actions have depreciated their currencies, lowered long-term bond yields slightly further, encouraged investors to anticipate that their respective businesses’ competitiveness will improve and therefore profits will rise. Along with this improved expectation investors have jumped into Japanese and European stock markets. Their returns have recently dwarfed equity returns in the US stock markets. As long as central banks continue creating liquidity and depreciating their currencies expect that equity returns will continue to rise in both markets.

**In conclusion**

In the US just the opposite reactions are occurring: the dollar soared, manufacturing output growth has stalled and competitiveness is suffering. Slower economic growth and rapid expansion of employment will cause productivity to fall, and pari-passu corporate profits will follow. If economic growth falters in Q1 and Q2 to rates well below potential, as current economic data indicates, market participants will have to rethink their expectations for the timing and extent of Fed rates hikes this year.

Moreover, in spite of present neutral valuation measures, US equity market returns in 2015 are most likely to stall and return far less than returns in the other major developed markets. If financial bubbles are building in developed equity markets, they are more likely to grow bigger than to burst during the next year, or two.

*For more information, please contact camri@nus.edu.sg*
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Source: Bloomberg

APPENDIX

GLOSSARY OF KEY TERMS (Source: Bloomberg, with tickers in parenthesis. In US$ where applicable)

S&P500: capitalization-weighted index of the prices of 500 US large-cap stocks (SPX)

FTSE: capitalization-weighted index of the prices of the 100 largest LSE-listed stocks (UKX)

NIKKEI: capitalization-weighted index of the largest 225 stocks of the Tokyo Stock Exchange (NKY)

HANG SENG: capitalization-weighted index of companies from the Hong Kong Stock Exchange (HSI)

STI: cap-weighted index of the top 30 companies listed on the Singapore Exchange (FSSTI)

EUR: USD/EUR exchange rate: 1 EUR = xx USD (EUR)

YEN: YEN/USD exchange rate: 1 USD = xx YEN (JPY)

CMCI: Constant Maturity Commodity Index (CMCIPI)

Oil: West Texas Intermediate prices, $ per barrel (CLK1)

3MO LIBOR: interbank lending rate for 3-month US dollar loans (US0003M)

10YR UST: 10-year US Treasury yield (IYC8 – Sovereigns)

10YR BUND: 10-year German government bond yield (IYC8 – Sovereigns)

10YR SPG: 10-year Spanish government bond yield, proxy for EU funding problems (IYC8 – Sovereigns)

10YR SGS: 10-year Singapore government bond yield (IYC8 – Sovereigns)

US ISM: US business survey of more than 300 manufacturing firms by the Institute of Supply Management that monitors employment, production inventories, new orders, etc. (NAPMPMI)

EU PMI: Purchasing Managers’ index for the 17 country EU region (PMITMEZ)

JP TANKAN: Bank of Japan business survey on the outlook of Japanese capital expenditures, employment and the overall economy, quarterly index (JNTGALLI)

CHINA IP: China’s Industrial Production index, with 1-month lag (CHVAIOY)

LC: Local Currency

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