September 2012

SEATTLE | 206.622.3700
LOS ANGELES | 310.297.1777
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Does Economic Growth Still Matter?

Victor Zarnowitz, an economist from the 1960's, observed that an economic recovery is proportionate to the size of the preceding contraction (named the Zarnowitz rule). The 2007-2009 Great Recession was the most severe economic recession since the Great Depression, and according to the Zarnowitz rule, it should be followed by a robust recovery. But global growth has been modest, peaking over 2 years ago with most components trending lower. Why has the global economy failed to generate sustainable above potential growth? How has the lack of economic growth led to changes in fiscal and monetary policy, and how sustainable are those policies?

US Debt – "Debt Is the Worst Poverty"

The primary driver of US economic growth has been debt; particularly consumer debt. The Federal Reserve (Fed) encouraged the expansion of debt with easy monetary policies and readily accessible credit. Total debt in the US relative to GDP (debt/GDP) expanded rapidly from the 1980s and reached a peak of 382%. Once credit peaked and began to contract, US economic growth followed suit. Despite continued easy monetary policies, total consumer debt has been unable to expand due to the lack of wage growth and prior borrowing has exhausted current demand.

The Fiscal Trap – Where's Jiminy Cricket for Our Pinocchio?

The U.S. is facing two issues surrounding fiscal policy; the debt ceiling limit and fiscal cliff. Both are coming, but not until after the election. The administration slowed the sales of debt to avoid hitting the debt ceiling limit until after the election, and nearly 100% of surveys polled expect the fiscal cliff to be resolved. The only question is, in what form will the compromise take, and how much will it restrain future growth?

The Fiscal Trap – I Will Gladly Pay You Tuesday…

Most consider 7% cost of funding as the threshold point at which countries can no longer fund debt obligations. In truth, 7% is a rather arbitrary point and the actual level depends upon not just the cost of funding, but also the total debt outstanding and nominal GDP growth. For a country with a larger debt/GDP, the threshold cost of funding could be much lower than 7%. For the US, nominal growth has trended lower since the early 1980s. With consumers no longer able to expand debt, the government has been supporting the economy via deficit spending, increasing total debts. At the same time, interest rates have steadily declined with a resulting decline in total interest cost as a percent of GDP from 1996 to 2002, and it has remained roughly flat since then. When interest cost as a percent of GDP is greater than nominal GDP growth, the country's debt load becomes unsustainable. While the US has not crossed the breakeven point yet, it is fast approaching. Furthermore, if we assume that interest rates normalize back to the two decade average of 5.7% and debt/GDP is 88% by 2015 (IMF estimate), interest cost as a percent of GDP rises to 5% and nominal GDP growth would have to increase to 5% to avoid interest payments pulling the economy into a recession.

The US is not alone in the fiscal trap. Several countries (including the PIIGS and Japan) have crossed the breakeven point where their debt is unsustainable relative to GDP. Japan is an interesting example in that their debt/GDP is the highest in the world, though they have been below the breakeven point for an extended period of time. The breakeven point only tells us of the risks. If investors do not require a premium for the risks, interest rates on the debts may stay low and allow the country to continue to finance the debt obligations at unsustainable levels.

QE Infinity – Fire Everything

With consumer debt past its peak and developed market sovereign debt peaking, how will the global economy grow? The global central banks have responded with QE Infinity, designed to try and generate growth via wealth effect. QE Infinity is the 4th phase in a series of QE programs implemented since 2008 that injected nearly $7 trillion in stimulus. Phases 1-3 (discussed in prior Quarterly Research Reports) were finite in scope (limited in size and duration) and had very little economic impact, but greater financial/market impact. Phase 4 (QE Infinity), is infinite in scope (unlimited in size and duration) and its impact to the economy and markets is still unknown.

With QE Infinity, the Fed will purchase $40 billion in MBS securities until the labor market improves substantially. This raises several important questions:

1. Why now?
2. How will QE Infinity Lower Unemployment?
3. Is the Fed abandoning its 2% inflation target?
4. Is the Fed risking its credibility with QE Infinity?

Why Now?

Timing may not always be everything, but it is in this case. The success of a QE program greatly depends on its timing. QE 1 was announced at the bottom of the credit crisis when the Market Vane Bullish consensus was near a low of 31%. Following the announcement, stocks rose 47% in the first 3 months. QE 2 was announced after a ~15% drop in the S&P 500 from its recent peak. Bullish consensus rose to 50%, but was still not near the 71% seen at the 2007 peak. Stocks rallied 21% in the first 3 months, a good rally, but lacking when compared to the strength of QE 1. QE Infinity was announced when the S&P 500 was **at** its peak (following a 30% rally since October 2011). Bullish consensus was near its peak at 69%, and stocks have held flat since the announcement.

If stocks fail to rally after QE Infinity, the Fed's reputation could suffer. Given the unlimited nature of QE Infinity, there is no need for another QE program, which eliminates an important aspect to Fed policy; the ability to jawbone, or talk, the market higher.

How Will QE Infinity Lower Unemployment?

How does QE work in theory? The central banks purchase AAA assets to both lower interest rates and reduce the debt burden on fiscal spending. Lowering interest rates results in making the high quality assets unattractive and investors respond by moving out the risk curve (buying credit, equities, commodities, etc.), increasing higher risk asset prices, and ultimately creating a wealth effect. The higher wealth effect encourages increased consumption, higher growth and lower unemployment.

How does QE work in reality? In line with theory, interest rates do move lower and investors do move out the risk curve, however, the impact of the wealth effect is not guaranteed unless it is perceived to be permanent. If the wealth gains are only offset by rising food and gas prices, the economic impact is muted and unemployment is unaffected. This is why it is critical that consumers view any gains in wealth as permanent.

The Fed's Dueling Mandate

By committing to providing unlimited amounts of QE until the labor market improves substantially, the Fed is clearly signaling the greatest economic risk to be higher unemployment rather than inflation. Has the Fed abandoned the 2% inflation target? No, but the Fed shifted the focus away

from the price stability (inflation) mandate toward the full employment mandate. Why? Despite $3 trillion in monetary stimulus since 2009, inflation remains below the 2008 peak and is still trending lower. As discussed in prior QRRs, the lack of inflation is due to the decline in wages and velocity of money. The Fed is directly targeting the labor markets because without wage growth, not only will consumption and GDP fall, but inflation will as well.

Fed policy usually targets a policy instrument (interest rates or money supply), and not a specific economic outcome. By targeting the unemployment rate, the Fed is making a historic shift in monetary policy approach. An explicit target of an economic outcome now ties the Fed to the results. In the past, if the unemployment rate continued to rise despite the Fed Funds rate being held at 0% and the implementation of QE programs, the Fed could state they were doing all they could. Now, no such statement will suffice. How will the Fed's reputation hold up if the unemployment rate continues to rise after QE Infinity?

Europe – No Easy Way Out

In Europe, the trend continues; GDP is either contracting or slowing in most countries, debt to GDP levels are trending higher, and the ECB makes broad commitments followed by little action. The latest round of ECB promises was the Outright Monetary Transactions (OMT). The OMT provides for unlimited bond purchases of a country that requests a bailout from the ECB. In order to activate the bond purchases, the country requesting the bailout must agree to allow the ECB to dictate the priorities and budgets of the country. The results have essentially been the same as the other programs (SMP, LTRO) where the markets recover (PIIGS' yields fall) and the Euro leaders feel less of a need to follow through promises. Will it last? Recent comments of "no urgency" suggest that the cycle of all talk/little action is repeating and PIIGS yields will move higher.

EM – A Mixed Bag

While GDP is generally been trending lower, Russian growth is continuing sideways. Despite Russia's overall slowing pace, it remains high relative to developed countries. Even in emerging markets, only Brazil is currently at near recessionary levels. In terms of inflation, emerging market inflation levels have been mixed. Russian inflation in particular has been trending higher after bottoming in early 2012. The emerging market central banks kept policy rates unchanged with the exception of Russia who raised rates 0.25%.

One area of real concern for emerging markets is China where nearly all aspects of the economy and markets have been moving lower. Recognizing the economic/market slowdown, the Shanghai Stock Exchange has moved below the 2010 low and is approaching the 2008 low.

Stocks and Cars

Human behavior in decision making can be seen in the financial markets, for example, in the cars we drive. The shape, style, colors, and size of cars change relative to the stock market. During periods of rising stock prices, the shapes of cars are "boxier" with the hoods and roofs more rectangular. Car colors (much like clothes) are brighter and chrome becomes a popular feature. Cars tend to have larger and less efficient engines with greater horsepower. Individuals "wanna go fast" and speed limits also tend to be raised during bull markets.

During periods of falling stock prices, car shapes tend to be more rounded with bodies and roofs shaped more like a bubble. Colors become darker and earthier, windows tend to be smaller, and horsepower is reduced. Chrome disappears and we are left with a smaller and simpler car.

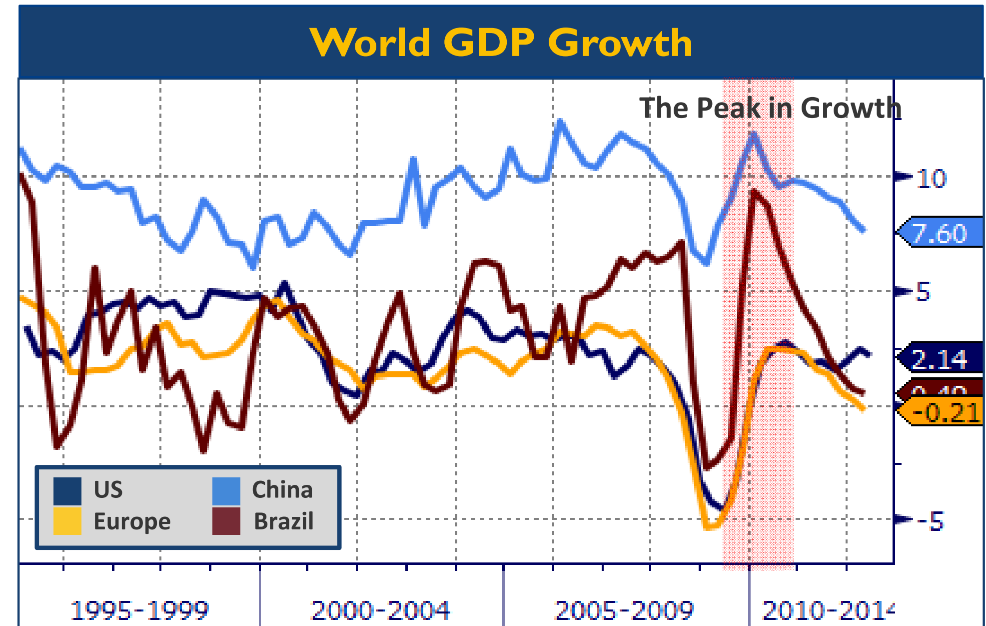
MACROECONOMICS

Global growth peaked over 2 years ago

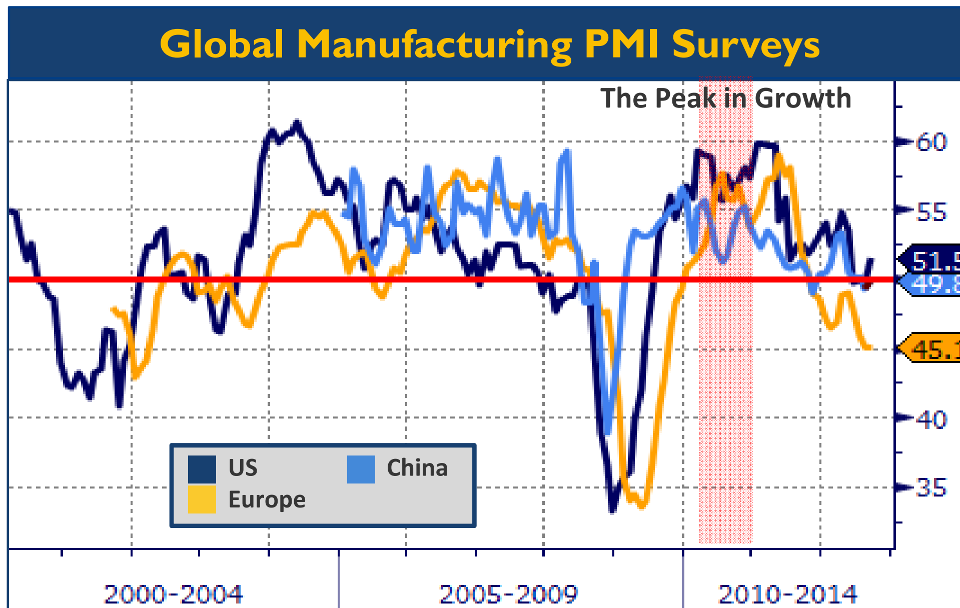
- GDP growth peaked in early 2010 and has since trended lower.
- Manufacturing showed a double peak in 2010 and 2011 and has been declining since.
- Global consumption continues to trend lower
  - The US remains the exception as consumption remains near its cycle peak.

According to the Zarnowitz rule, an economic recovery is in direct proportion to the preceding recession.

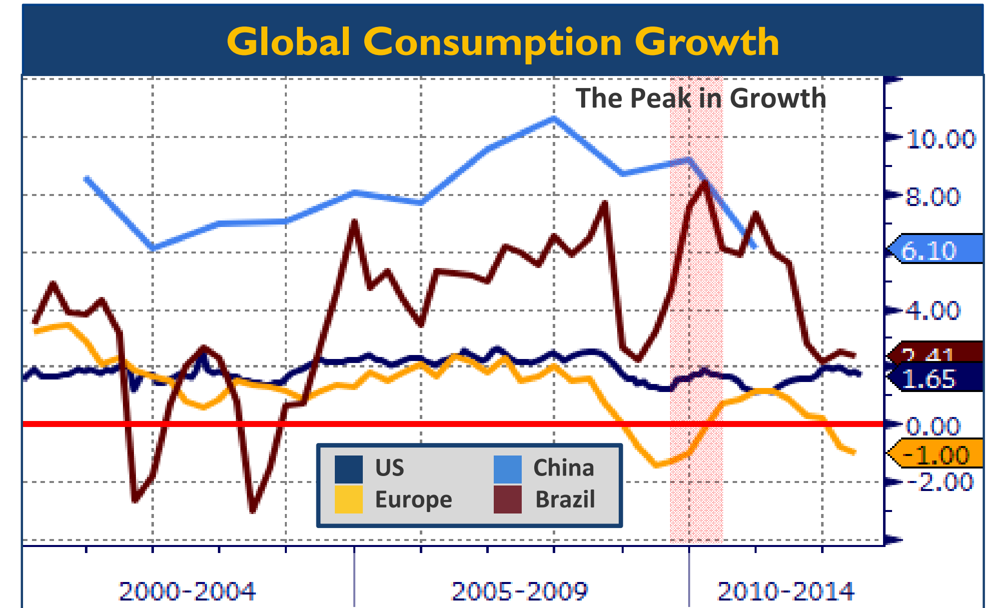
If the Great Recession was the most severe economic contraction since the Great Depression, why has the recovery been so weak?



Sources: BEA, Eurostat, IBGE, Bloomberg, Wurts



Sources: Federal Reserve, ECB, Banco Central do Brasil, The Peoples Bank of China, Bloomberg, Wurts



Sources: Federal Reserve, ECB, Banco Central do Brasil, The Peoples Bank of China, Bloomberg, Wurts

THE US DEBT - "DEBT IS THE WORST POVERTY"*

The driver of US economic growth has been debt; particularly consumer debt.

Total debt/GDP expanded rapidly from the 1980s to its peak of 382%. As credit fully expanded and then began to contract, the US economy struggled to engineer even modest growth.

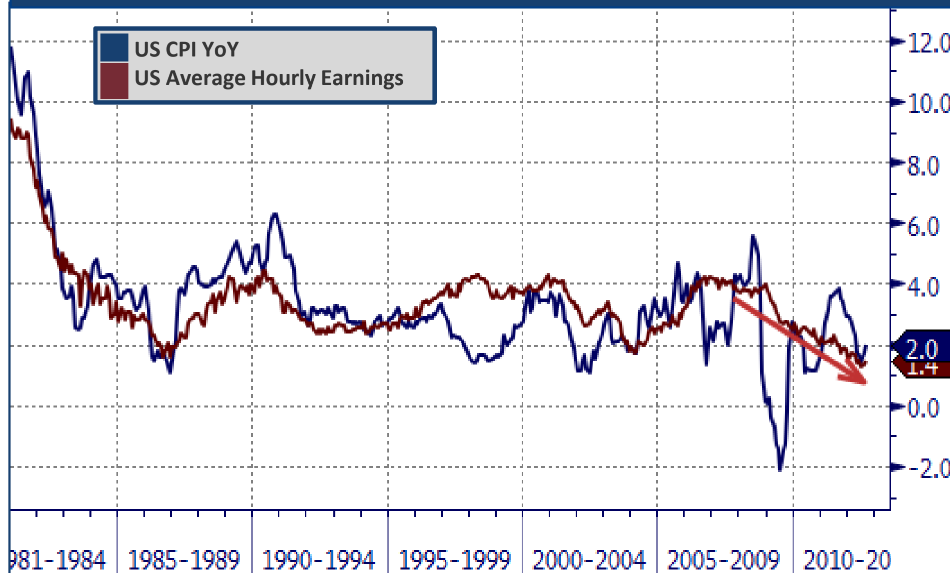
Since the 1950s, the impact of $1 of new debt on GDP fell from $0.75 to $0.25. In other words, for every $1 in new debt, the economic impact is only $0.25.

Consumer debt has been unable to grow due to the lack of wage growth and prior borrowing and consumption has exhausted current demand.

Total Credit Market Debt As % of U.S. GDP

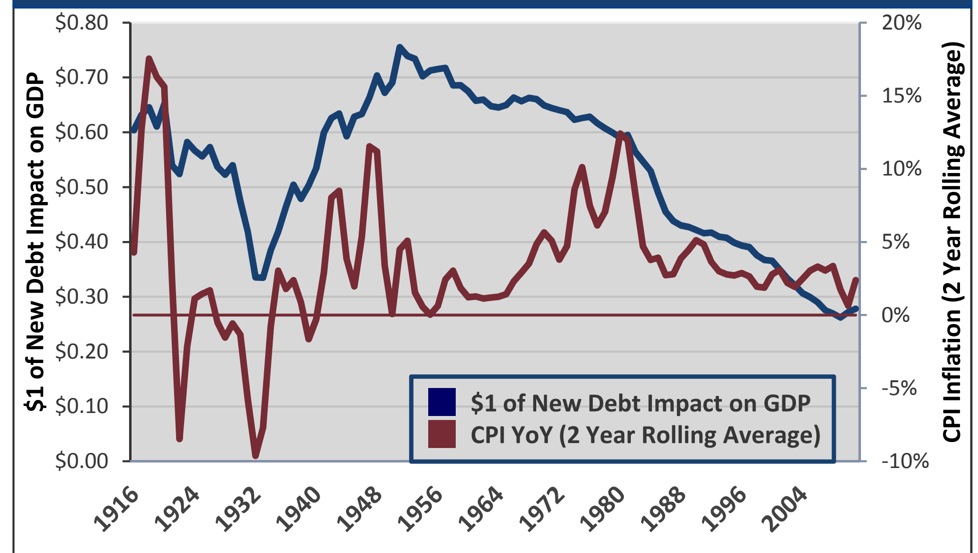
Sources: Before 1945: US Census Net Public and Private Debt; After 1945: Federal Reserve Board, Flow of Funds, Wurts

US CPI & Average Hourly Earnings



Sources: BLS, Bloomberg, Wurts

$1 of New Debt Impact on US GDP/Inflation



Sources: Before 1945: US Census Net Public and Private Debt; After 1945: Federal Reserve Board, Flow of Funds, Wurts

**Quote: Thomas Fuller*

As consumers are no longer able to expand debt, the government stepped in and filled the gap with deficit spending.

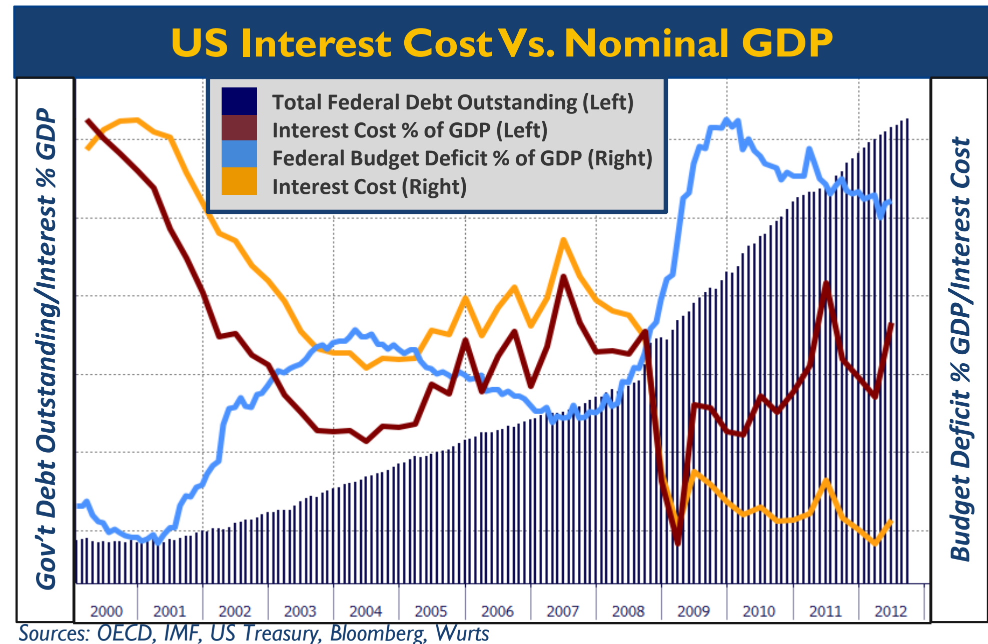
The deficit spending resulted in dramatic growth for total federal debt. While total debt outstanding increased, interest rates decreased. As a result, total interest cost as a percent of GDP rose only modestly since 2009 (from ~1.5% to ~2%).

Does a country have unlimited ability to borrow? At what point can an economy no longer support its debts?

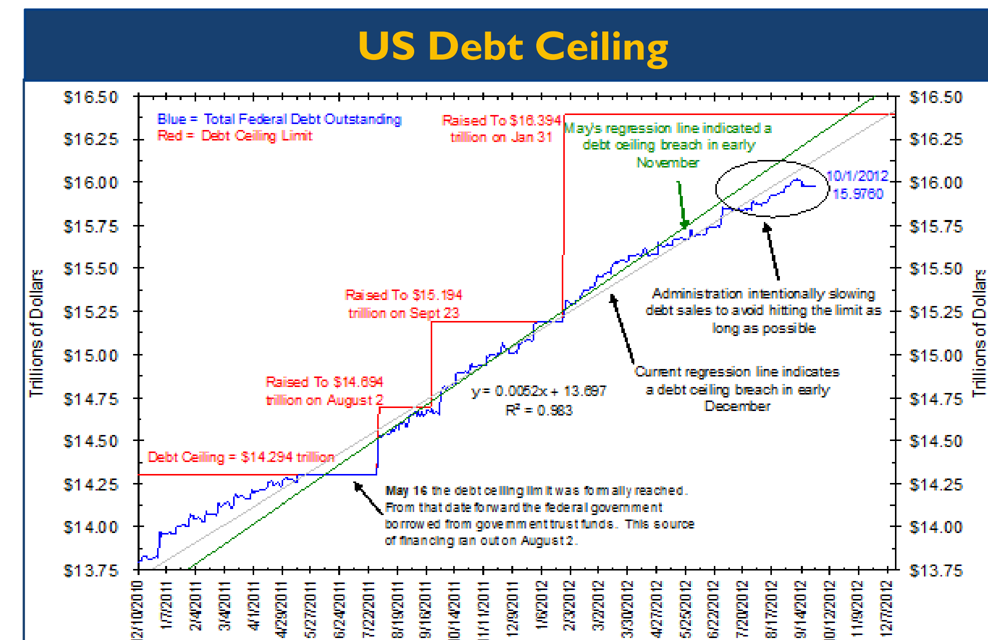
The debt ceiling limits and fiscal cliff are coming, but we have a reprieve until after the elections.

- According to the chart from Bianco Research, the administration has been slowing debt sales to avoid hitting the debt ceiling until after the election.
- Nearly 100% of the surveys expect the fiscal cliff to be resolved.
- The only question is, what form will the compromise take? How much will growth be restrained in 2013?

The resolution of the fiscal cliff is not the greatest concern, the interest burden associated with the debt is of much greater consequence.



Sources: OECD, IMF, US Treasury, Bloomberg, Wurts



Sources: Bianco Research

At what point can an economy no longer support its debt?

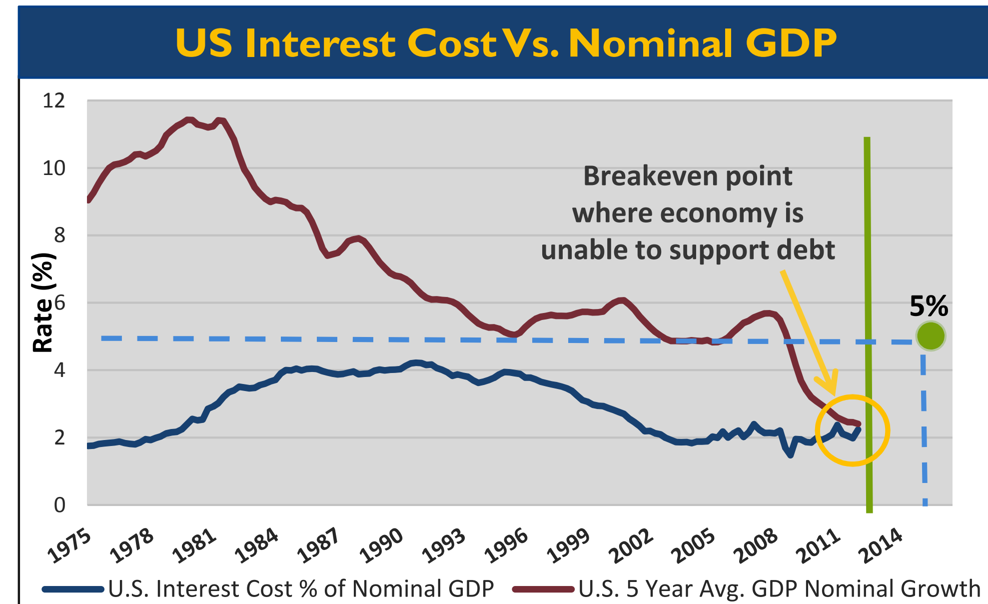
- 7% cost of funding has become a popular threshold
- It really depends upon 3 factors:
  - Cost of funding (current rates);
  - Total outstanding debt; and
  - Nominal GDP growth.

For the US, we can observe several trends:

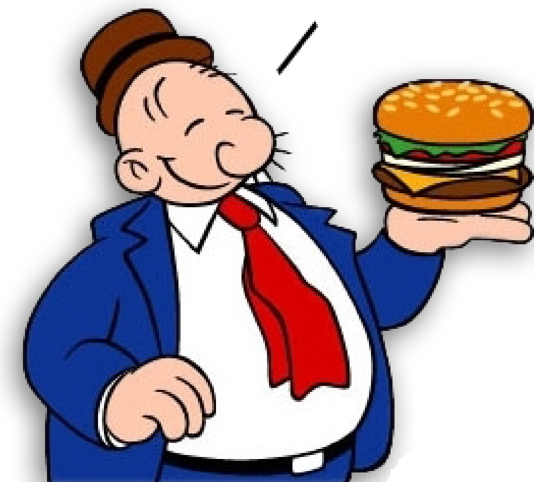
- Nominal growth has been trending lower since the early 1980s (using a 5 year rolling average).
- Despite the increase in total debts, total interest costs as a % of GDP has been flat since 2002.
  - Increased government borrowing is offset by lower interest rates.
  - Lower rates have been both an objective and criticism of QE.

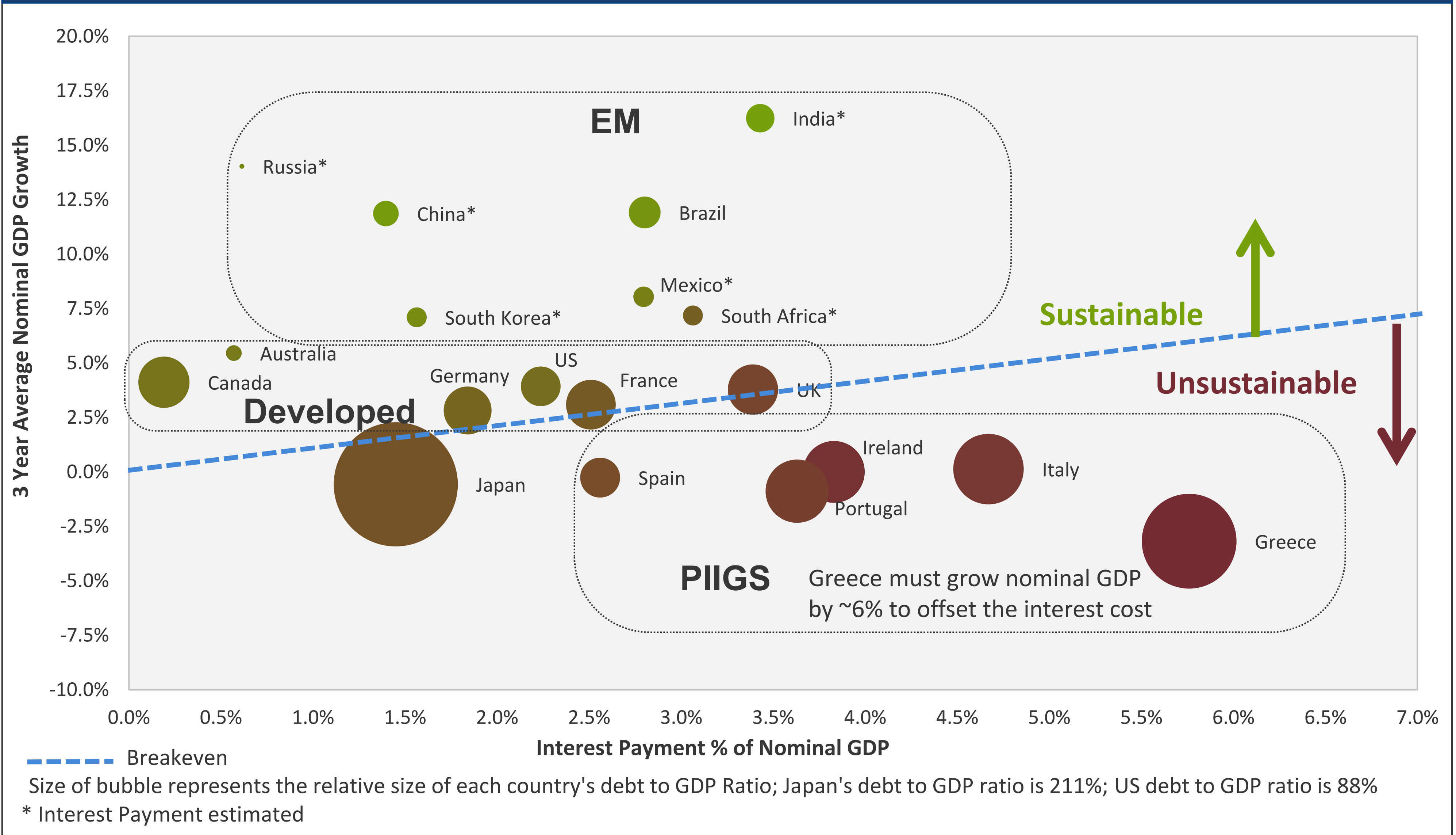
When interest costs as a % of GDP is greater than nominal GDP, the economy is no longer able to support its debt load.

- The US has not yet crossed the breakeven point, but will do so over the coming years.
- If we assume:
  1. Interest rates normalize back to their two decade average of 5.7%;
  2. Debt to GDP is 88% by 2015 (IMF estimate); and
  3. The interest cost as a % of GDP rises to 5%; then
- Nominal GDP growth would have to increase to 5% to avoid having interest costs pull the economy into a recession.

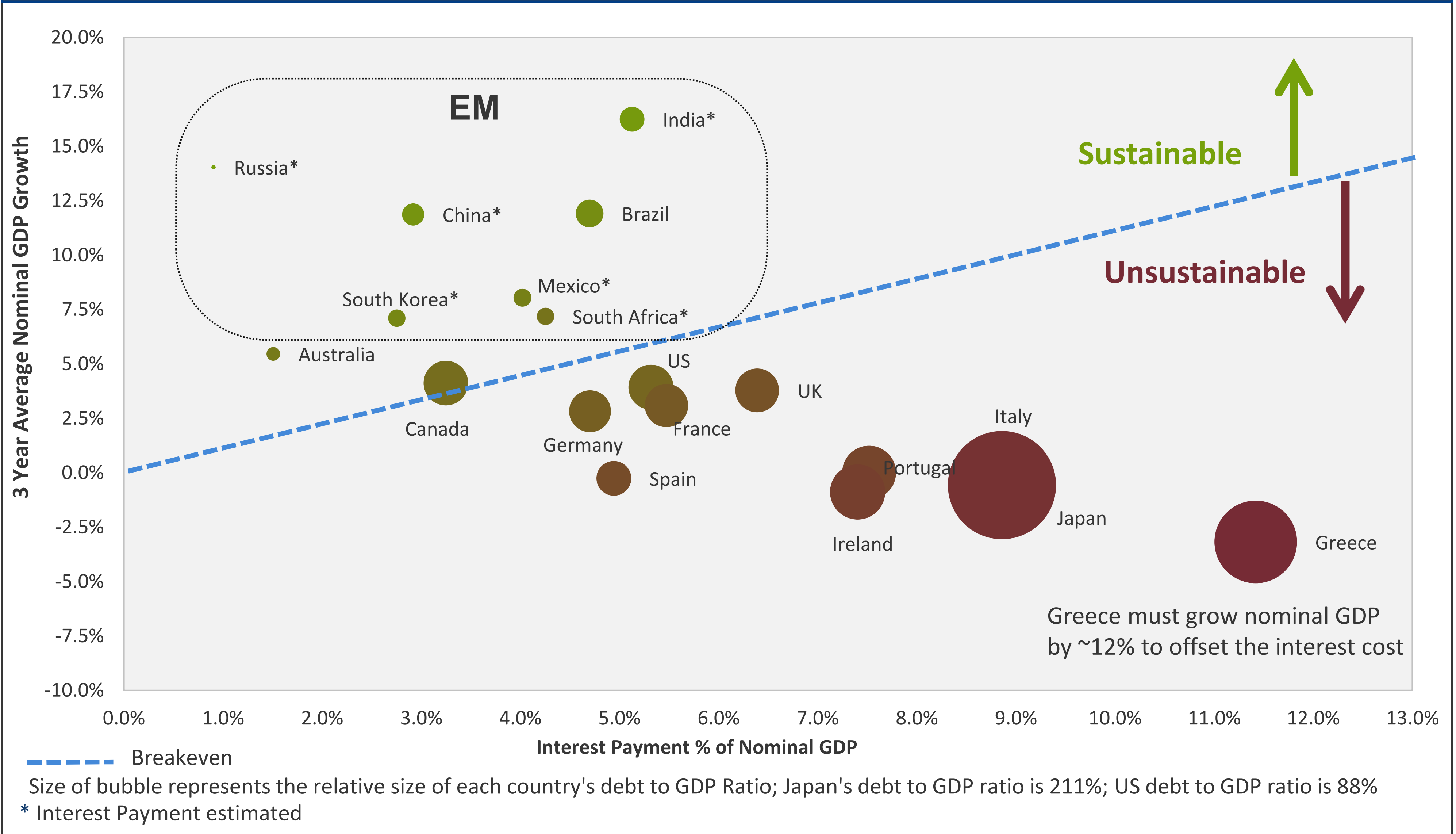


Sources: OECD, IMF, US Treasury, Bloomberg, Wurts





Source: Bloomberg, Wurts



Source: Bloomberg, Wurts

QE INFINITY – FIRE EVERYTHING!

With consumer debt already peaked and developed market sovereign debt peaking, how will the global economy grow?

The global central banks have responded with QE Infinity, designed to try and generate growth via the wealth effect.

QE Infinity is the 4th phase in a series of QE:

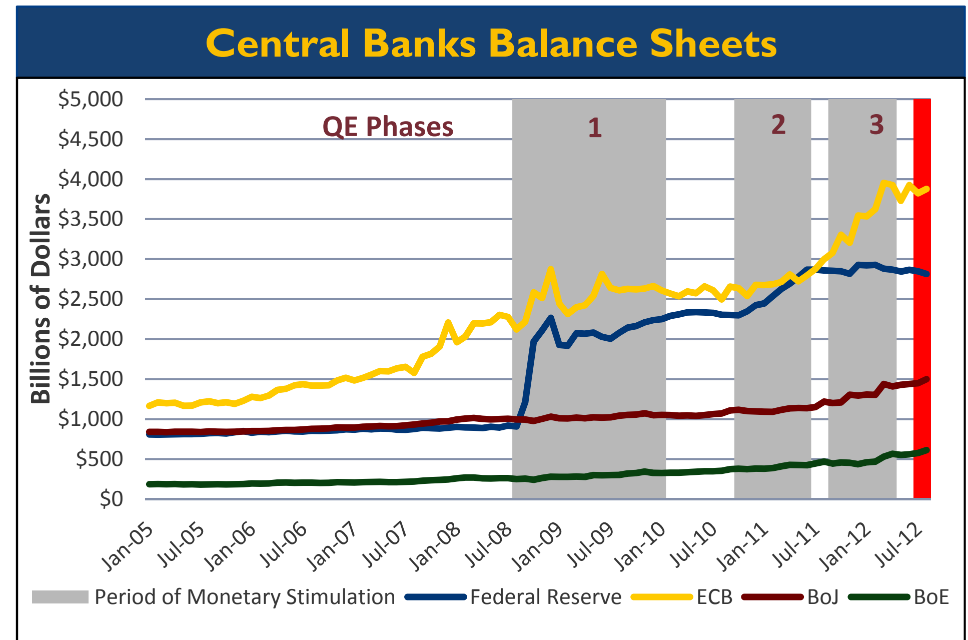
- Phases 1 -3:
  - Finite in scope (limited in size and duration).
  - Economic impact has been slight (see prior QRRs for details) but the market impact is more significant (equities rose 10% on average).
- Phase 4 (highlighted in the red column):
  - Infinite in scope (unlimited duration).
  - US equities rose 30% **PRIOR** to QE3 (QE Infinity).

Fed QE Infinity:

- The Federal Reserve (Fed) will purchase $40 billion in MBS each month until the labor market "improves substantially".
- Questions:
  - Why now?
  - How will QE lower the unemployment rate?
  - Is the Fed abandoning the dual mandate?
  - What is the impact of the Fed now targeting a specific economic outcome?

ECB Outright Monetary Transactions (OMT):

- Unlimited purchases, will it help?
- Will policy statements translate into action?



Sources: Federal Reserve, ECB, Bank of Japan, Bank of England, Bloomberg, Wurts

Why engage in QE Infinity now?

QE 1:
- Announced at the bottom of the credit crisis.
- Market Vane Bullish consensus was near a low of 31%.
- 3 months post QE1, stocks rose 47%.

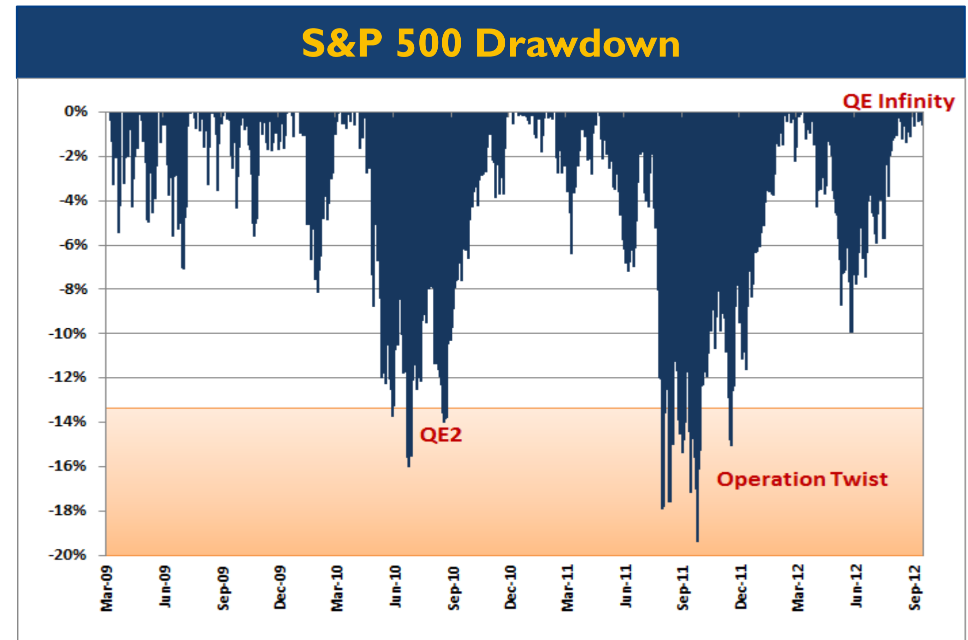
QE 2:
- Announced following a ~15% drop in the S&P 500 from its recent peak.
- Bullish consensus had risen to 50%.
- Stocks rallied 21% in 3 months following QE3.

QE 3 (QE Infinity):
- Announced when the S&P 500 was **AT** its peak – after a greater than 30% rally since October 2011.
- Bullish consensus at 69% (near the all time peak reached at the 2007 top).
- Stock returns are nearly unchanged.

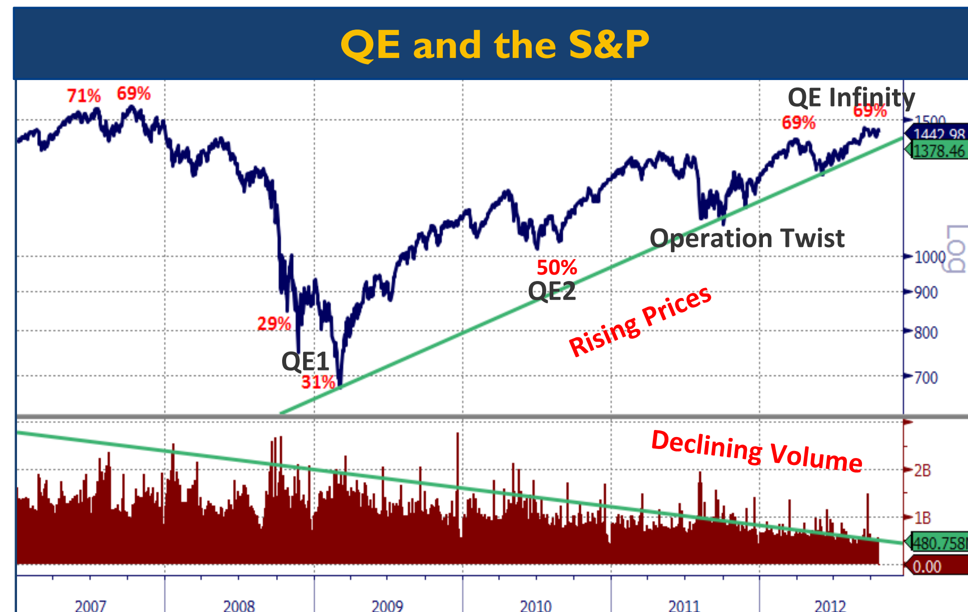
The success of QE 1 and a portion of QE 2 can be attributed to timing. Market sentiment was not bullish and the market had experienced significant declines.

Will the timing of the announcement of QE Infinity hinder its success?

If QE Infinity is seen as being unsuccessful, what will the impact be to the Fed reputation?



Sources: Bloomberg, Wurts



Sources: Bloomberg, Wurts

QE INFINITY – THE WIZARD OF OZ

How does buying MBS reduce unemployment?

- The theory behind QE:
  - Fed buys AAA assets to push rates lower, accomplishing two goals:
    1. Makes investments unattractive to investors, and
    2. Reduces interest rate burden on fiscal spending.
  - Investors respond by moving out the risk curve (buying credit, equities, commodities, etc.).
  - High risk asset prices create a wealth effect.
  - Higher wealth effect increases consumption and generates growth (and thereby lowers unemployment).
- The reality behind QE:
  - Interest rates do move lower and investors do move out the risk curve;
  - The impact of the wealth effect is not guaranteed unless it is perceived to be permanent; and
  - If wealth gains are only offset by rising gas and food prices, the economic impact is muted (unemployment is not impacted).
- Does the unlimited duration of QE Infinity mean consumers will view the gains as permanent?
  - Fed Reserve Bank of San Francisco posed a question on its Facebook page:

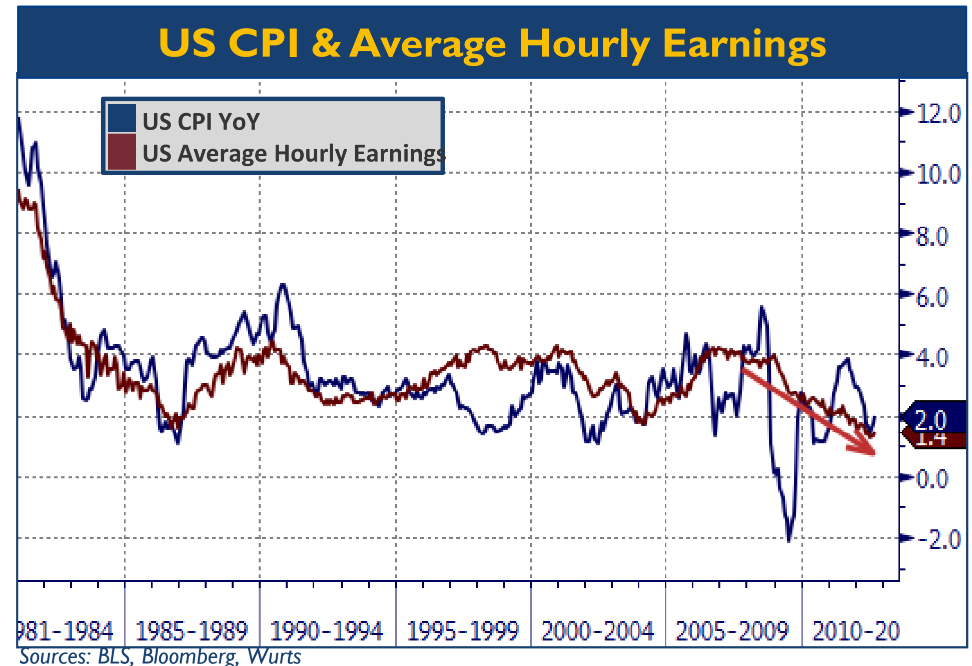
"What effect do you think QE3 will have on the economy?"

  - The responses were less than positive:
    - Top response: "Long term, disastrous"
    - Other top responses:
      - "Negative",
      - "Thanks for $5 gas", and
      - "Fire Fed Chairman Ben Bernanke".
  - Do consumers see QE Infinity as generating permanent wealth gains? Not according to this and many other surveys.

The Fed will purchase $40 billion in MBS until the labor market "improves substantially".

- Is the Fed abandoning the 2% inflation target?
  - Clearly the Fed is signaling the greatest economic risk is higher unemployment, not inflation. Why?
  - After $3 trillion in stimulus since 2009, inflation is not increasing. Why?
    - Wages/earnings continue to decline.
    - Impact on GDP of new debt continues to decline (lower velocity of money).
- Thus, **<u>the Fed is now targeting lower unemployment</u>** in hopes to generate economic growth.
  - The Fed has moved from using policy tools (interest rates, money supply) to targeting an economic outcome.
  - The Fed cannot control the unemployment rates.
  - How will QE Infinity help lower unemployment?

US CPI & Average Hourly Earnings



Sources: BLS, Bloomberg, Wurts

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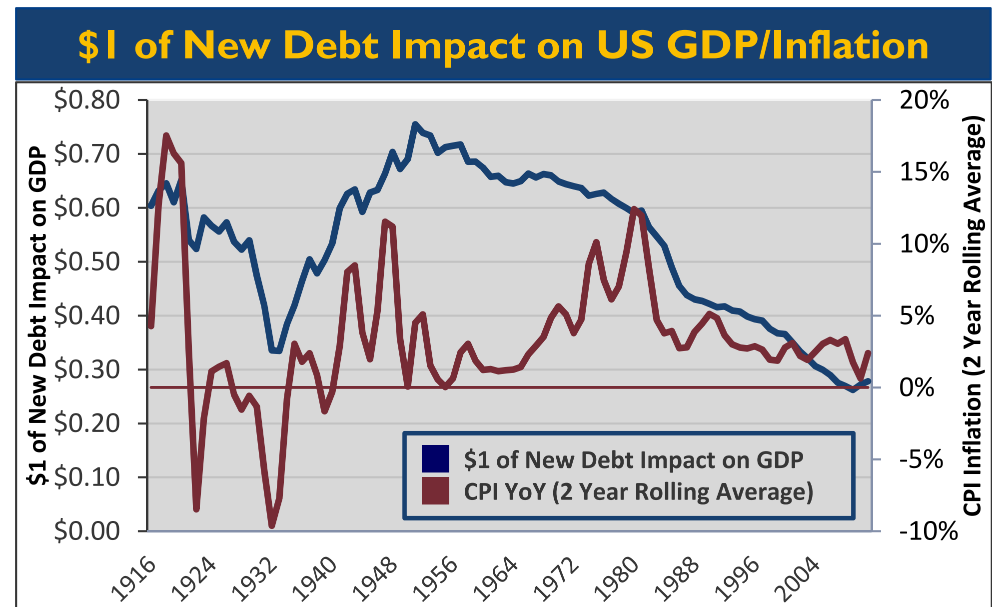
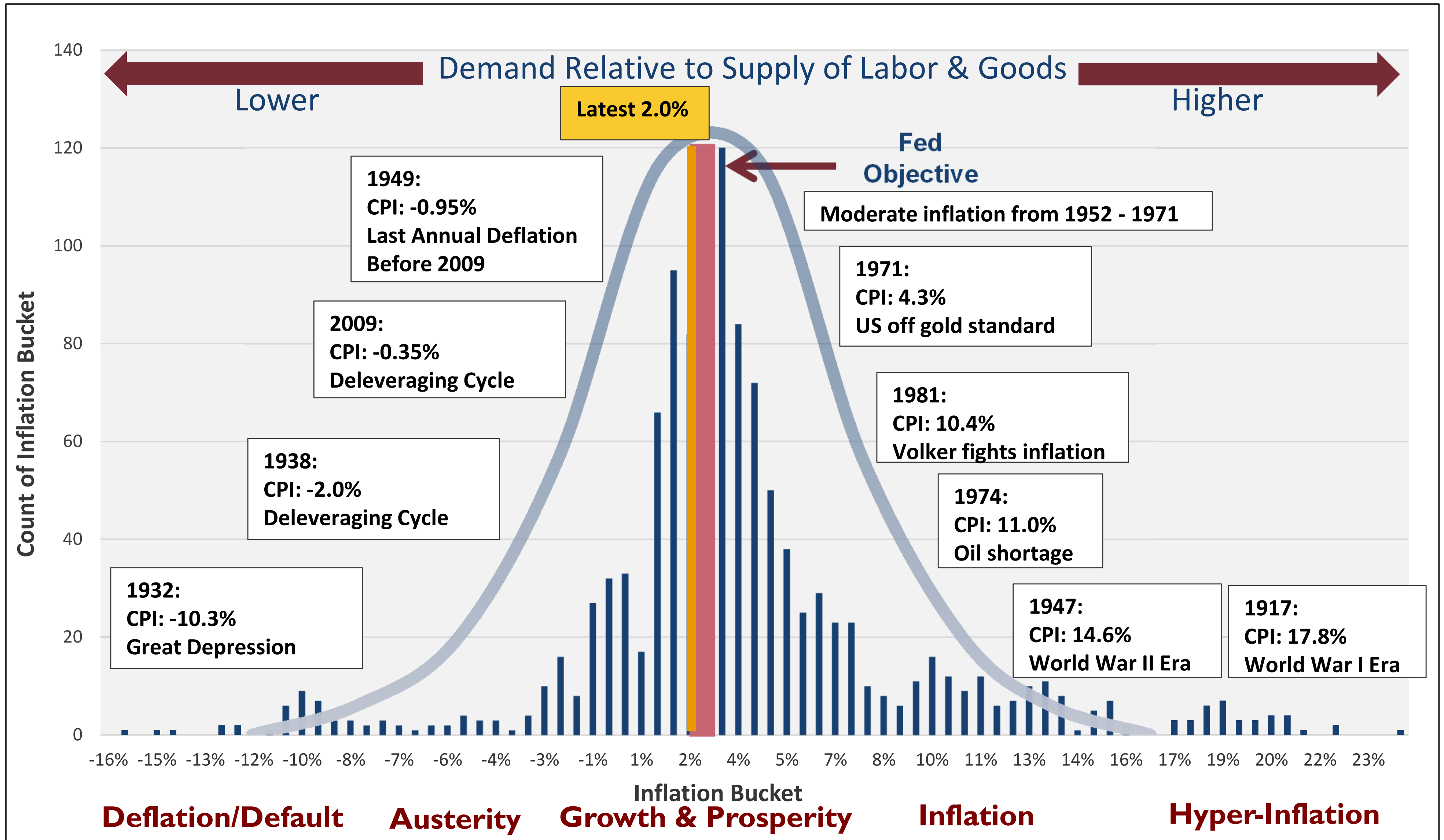


Sources: Before 1945: US Census Net Public and Private Debt; After 1945: Federal Reserve Board, Flow of Funds, Wurts

US ANNUAL INFLATION DISTRIBUTION SINCE 1914



Sources: Bloomberg

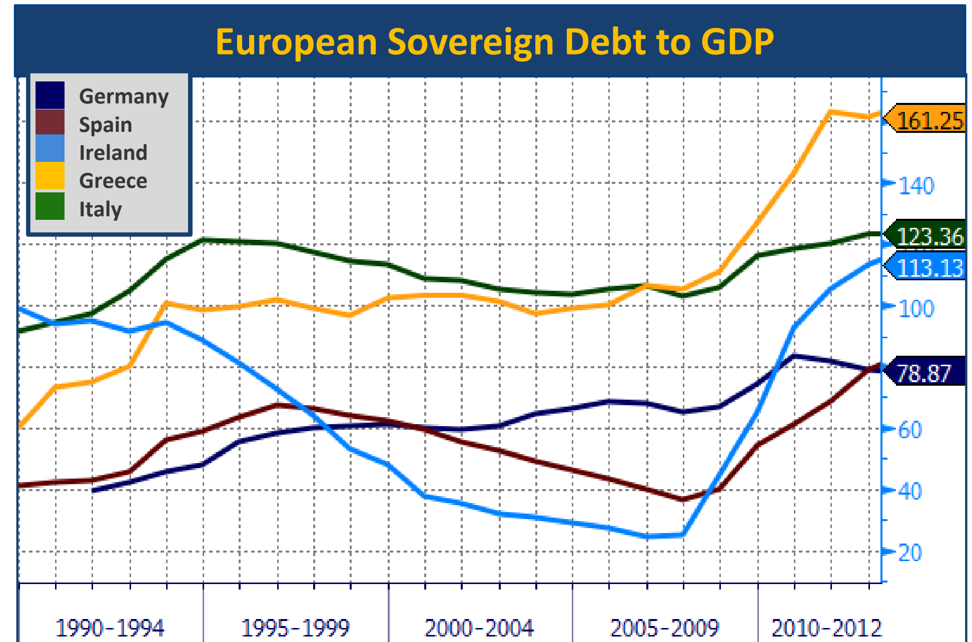
EUROPE – NO EASY WAY OUT

Sovereign debt-to-GDP levels continue to trend higher.

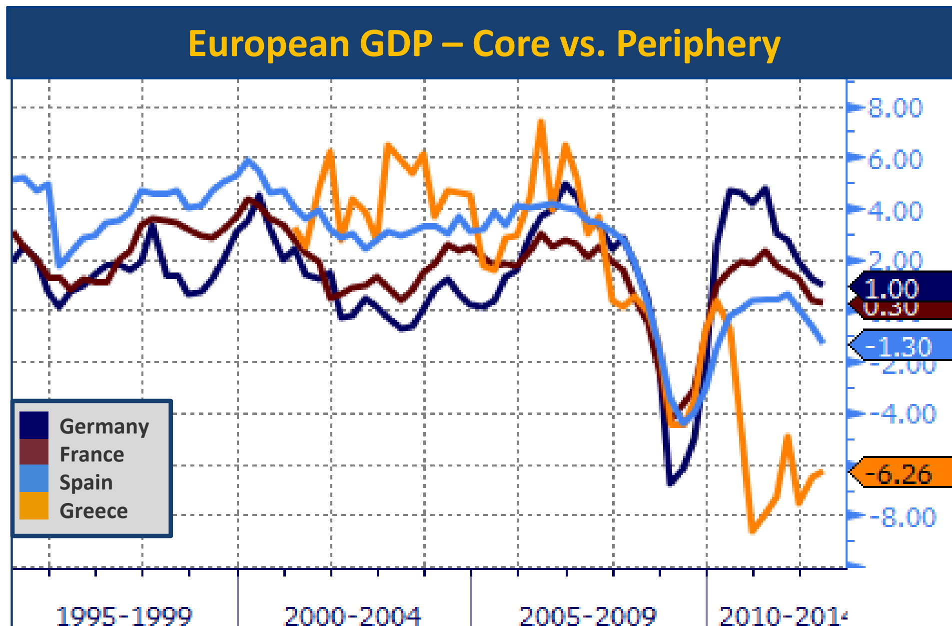
Periphery growth problems have spread to the core countries.

Nearly all aspects of GDP growth are contracting and likely to grow in severity with austerity.

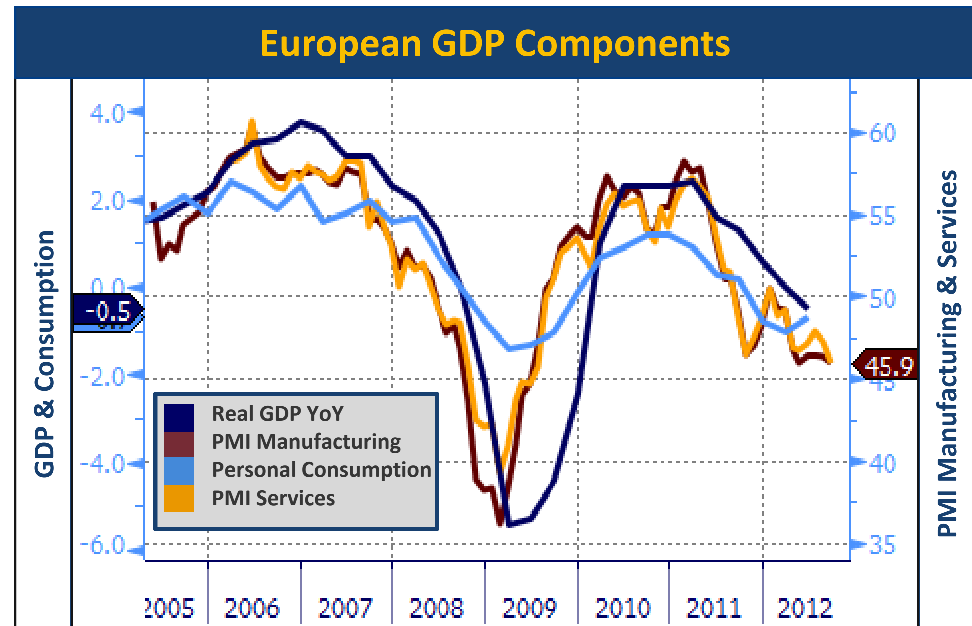
The ECB has responded with another round of promises – the most recent being the Outright Monetary Transactions (OMT).



Sources: IMF, Bloomberg, Wurts



Sources: Eurostat, ECB, Bloomberg, Wurts



Sources: Eurostat, ECB, Bloomberg, Wurts

The ECB cycle continues

- When markets contract, European leaders promise anything and everything (reference 18 Euro Summits).
- After a promise to solve all the problems, the market recovers and the Euro leaders feel less of a need to follow through on promises.
- With no follow through, the market slumps once again.

The latest plan, provided by ECB President Draghi, provides for unlimited bond purchases via a program called Outright Monetary Transactions (OMT).

- In order for OMT to begin, a country (Spain) must request a bailout and accept the "conditionality" which allows the ECB and its partners (Germany) to dictate the priorities and budgets of the country (Spain).
- The market reaction to OMT has been similar to other programs (SMP and LTRO) with yields in the countries under pressure (PIIGS) falling in relief or hope.
- Will it last?
  - Spain Prime Minister Rajoy told Parliament it's not clear if Spain needs help as the ECB OMT plan has cut borrowing costs and there is "no urgency".
  - Further, a country is going to be resistant to agreeing to the conditionality of the program as it will be giving up some of its sovereignty.

Sources: Bloomberg, Wurts

The solution for Europe has been austerity.

Austerity ensures a decline in tax revenues and slower GDP.

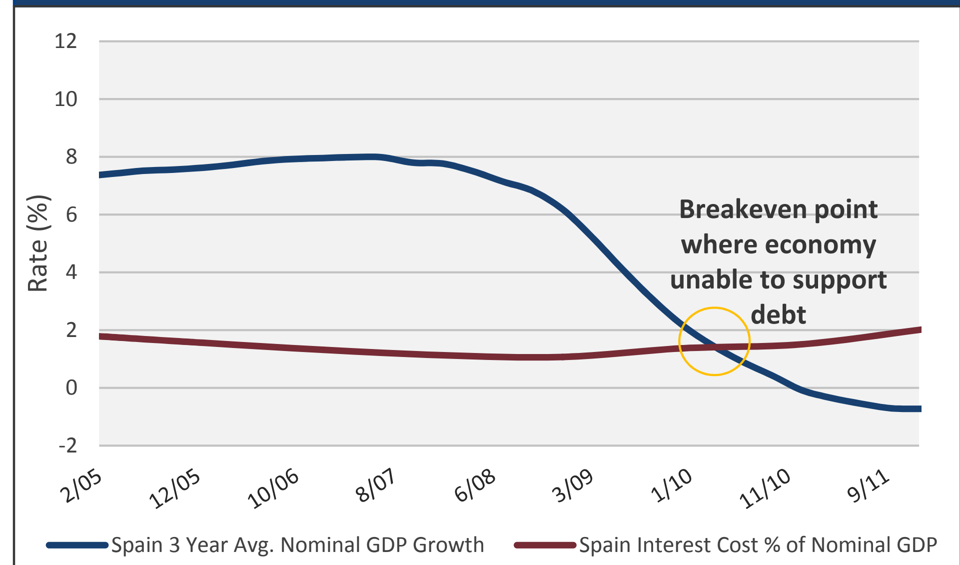
How can a country with decreased revenues support a growing interest rate cost? It is simply impossible.

For Spain we can observe the following trends:

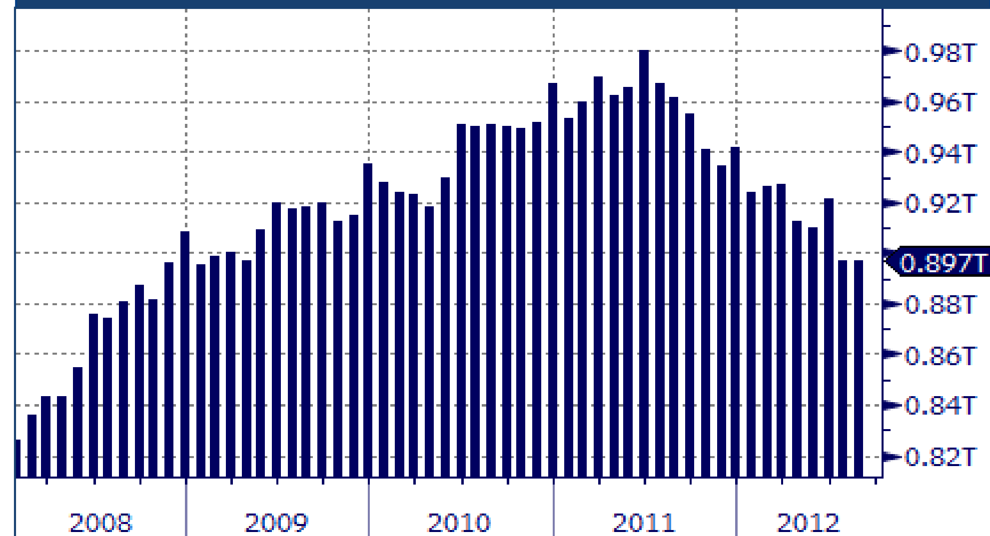
- Nominal GDP growth continues to trend lower;
- Interest rate costs as a % of GDP have been rising since 2009 and will continue to go higher as debt is rolled over into higher rates;
- Interest cost as a % of GDP moved above the break even point, making austerity impossible; and
- To fill the gap (between interest costs and GDP), Spain will have to rely upon the ECB. Is continued ECB support likely?

Due to these concerns, investors have been removing deposits from Spanish banks at a steady pace since 2011.

- €26 billion was removed in July 2012 alone.
- Loan/deposit ratio increased from 183% in December to 187% in July.
- A crisis in confidence yes, but also a crisis of economic reality.



Sources: IMF, Bloomberg, Wurts



Sources: BI, Bloomberg, Wurts

EMERGING MARKETS – A MIXED BAG

Inflation has become mixed:

- Flat in Brazil,
- Falling in China, and
- Rising in Russia.

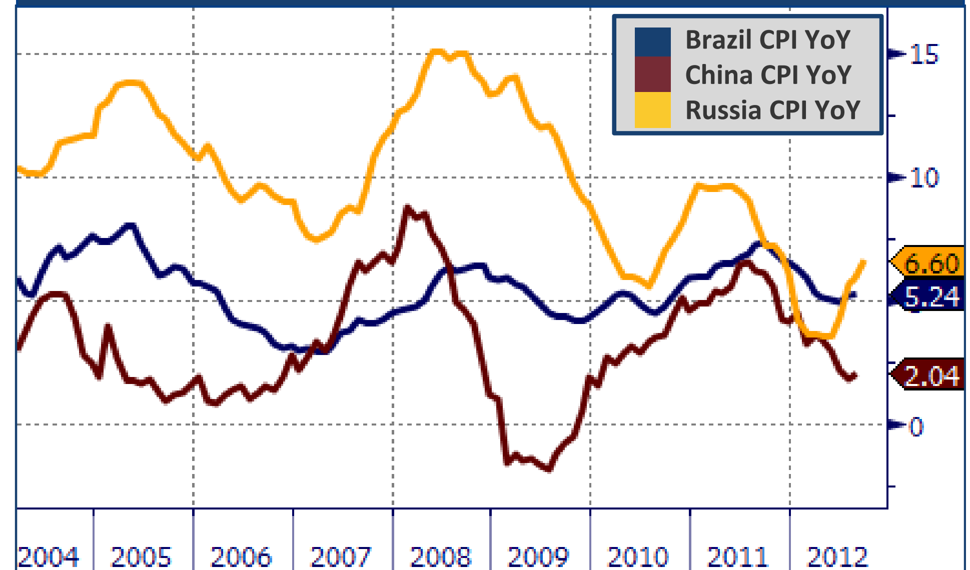
GDP growth generally continues to trend lower.

- Exception: Russia GDP growth has been flat.

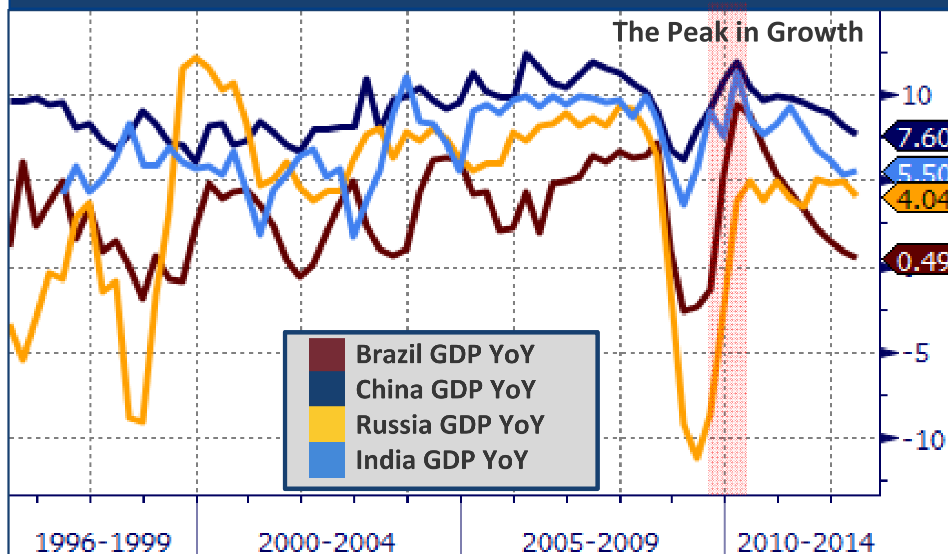
Central banks response is mixed:

- Russia raised rates 0.25%,
- Brazil and China kept rates unchanged.

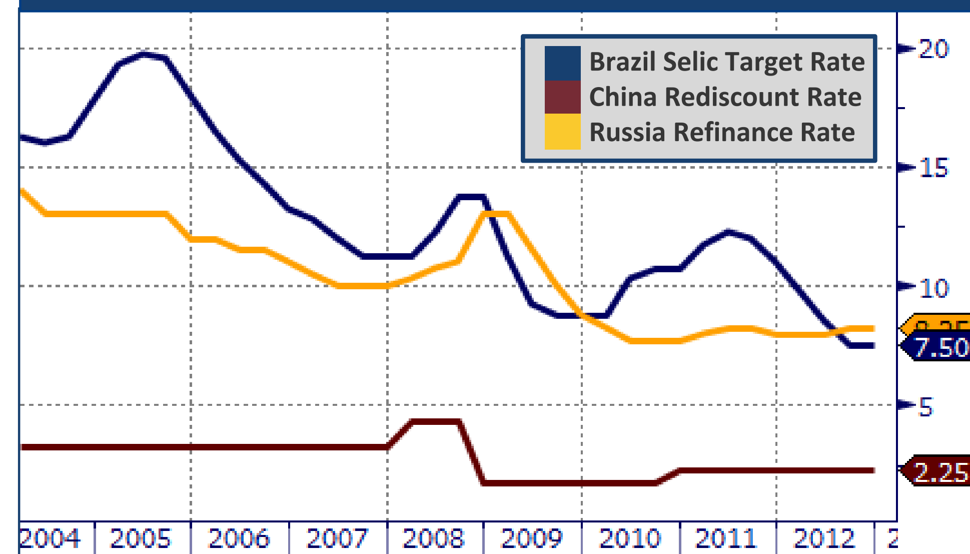
While growth has slowed, EM growth continues to outpace developed and EM central banks are in a far better relative position.



Sources: IBGE, China Economic Information Network, Federal Service of State Statistics, Bloomberg, Wurts



Source: IBGE, National Bureau of Statistics of China, Federal Service of State Statistics, Bloomberg, Wurts



Sources: Banco Central do Brasil, The Peoples Bank of China, Central Bank of Russia, Bloomberg, Wurts

Chinese consumption continues to trend lower.

- Retail sales are approaching the 2009 lows.
- Auto sales have already moved below the 2008 lows.

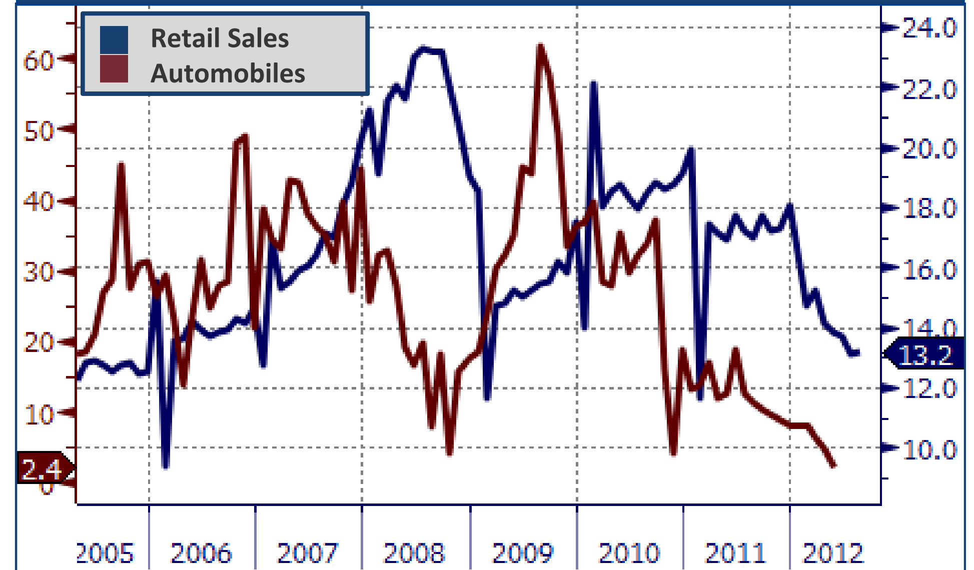
Chinese manufacturing generally trended lower.

- Industrial production is approaching its 2008 low.
- Manufacturing PMI has been weakening, but still well above the 2008 low.

Chinese real estate climate and stocks have declined significantly.

- Chinese real estate climate fluctuated significantly and is down from the 2010 peak.
- Shanghai stock exchange is down 42% since the 2009 peak and 67% from the 2007 peak.

Consumption



Sources: National Bureau of Statistics of China, Bloomberg, Wurts

Manufacturing

Source: China Federation of Logistics & Purchasing, China Economic Information Network, Bloomberg, Wurts

Real Estate & Stocks

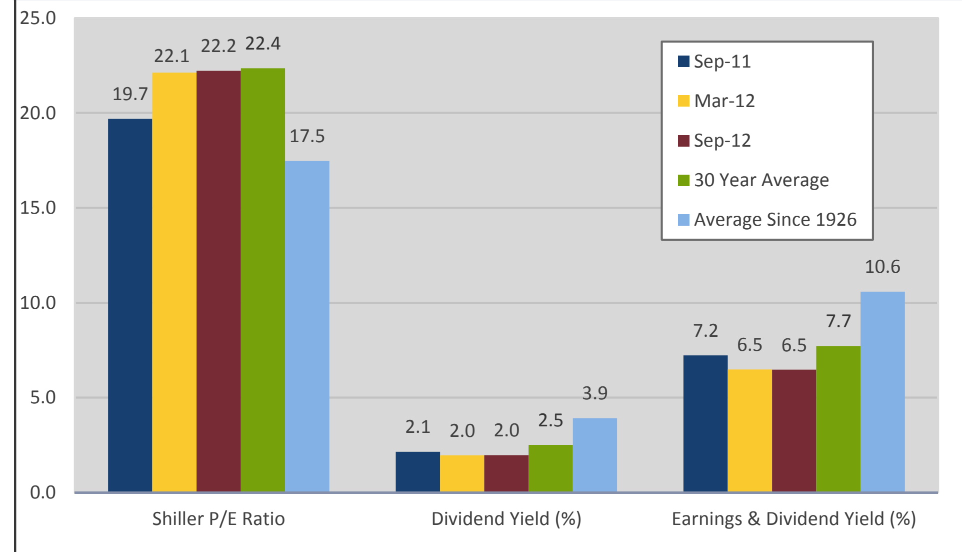
Sources: China Economic Information Network, Bloomberg, Wurts

CAPITAL MARKETS VALUATION

US LARGE CAP EQUITIES

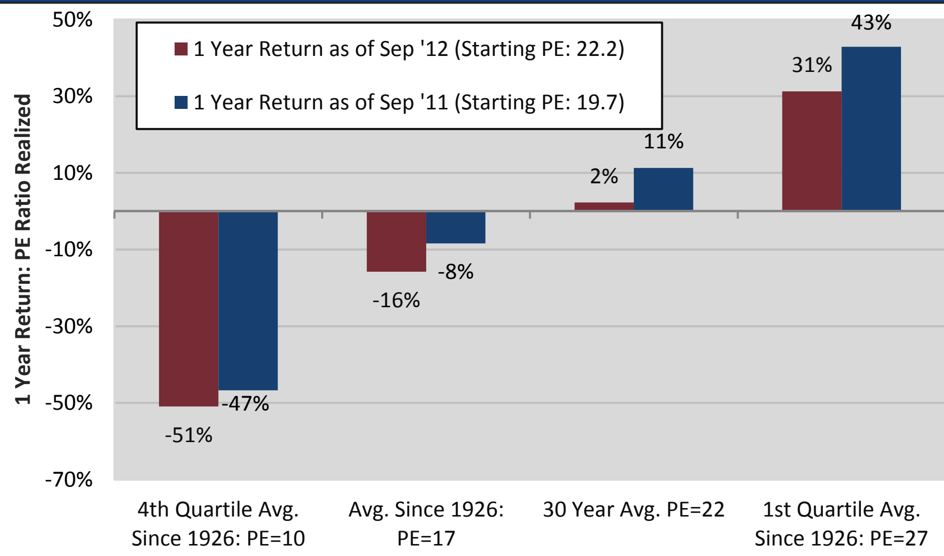
- The S&P 500 gained 6.4% in Q3 and the Shiller P/E is up from 21.0 to 22.2, a 5.7% increase.
- The Shiller P/E is near its 30 year average but well above its average since 1926.
- The S&P 500 one-year return is 30.2% and the Shiller P/E is up 12.7% since last year.
- The current Shiller P/E ratio suggest the market is fairly valued from a 30 year perspective, but overvalued compared to a longer historical analysis.

US Large Cap (S&P 500) Valuation Snapshot



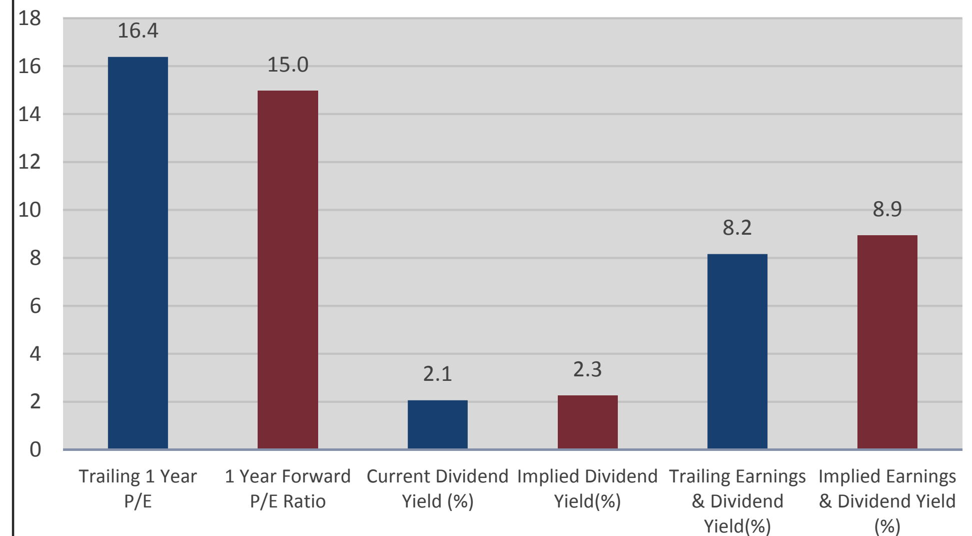
Source: Yale/Shiller, Wurts

Effects of Changes in Shiller PE Ratio



Source: Yale/Shiller, Wurts

S&P 500 Valuation Snapshot (Sep'12)

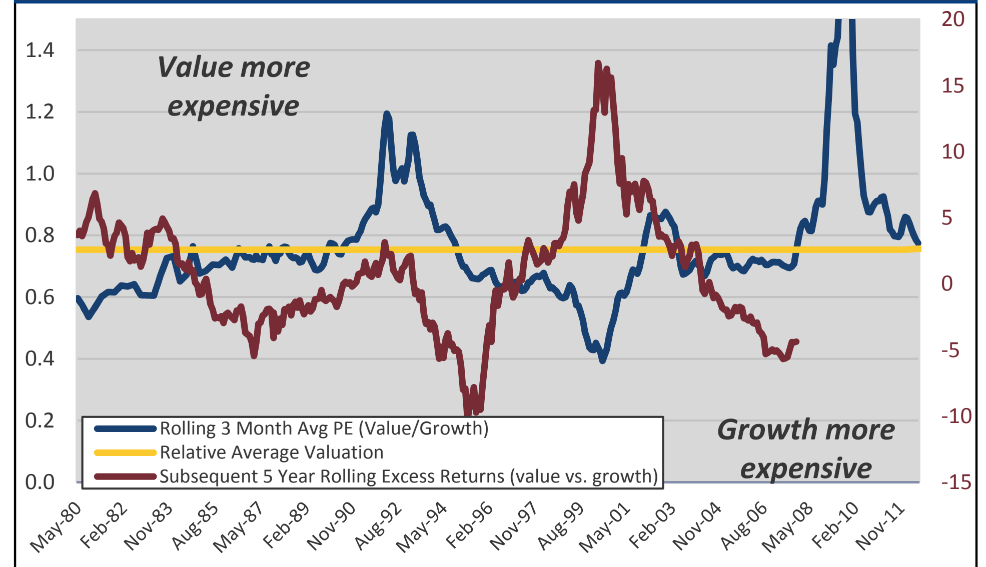


Source: S&P, Wurts

STYLE TILTS: US LARGE VALUE VS. GROWTH

- Both US large cap value and growth equities rose during the quarter, climbing 6.5% and 6.1%, respectively.
- US large cap growth stocks have outperformed value 1.1% YTD.
- Value and growth stocks continue to be fairly valued given the long-run average P/E relationship.
- Value has slightly underperformed growth over the last 10 years

Relative PE Ratio of US Value vs. Growth



Source: Russell

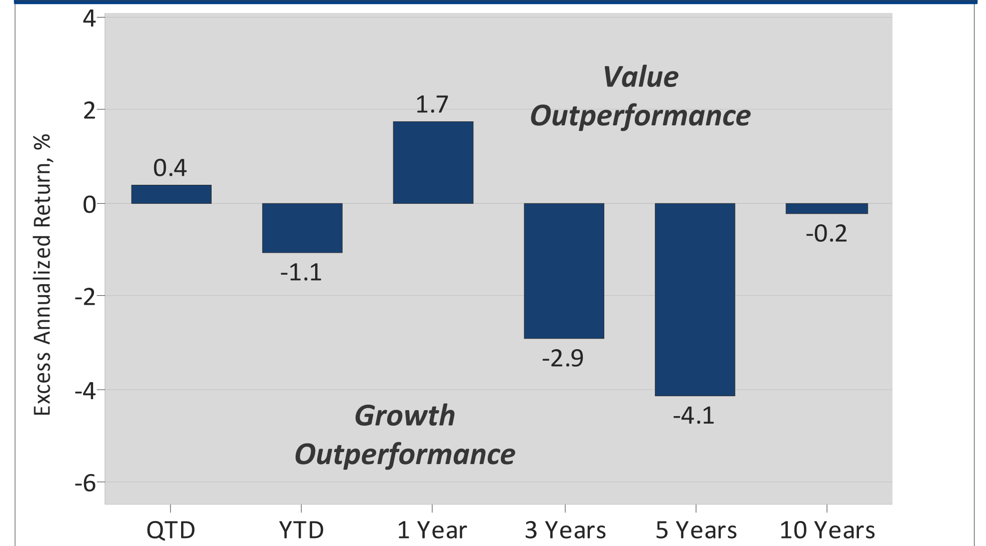
US Value vs. Growth Absolute Performance

	Russell 1000 Growth Annualized Return to date, %	Russell 1000 Value Annualized Return to date, %
QTD	6.11	6.51
YTD	16.80	15.75
1 Year	29.19	30.92
3 Years	14.73	11.84
5 Years	3.24	-0.90
7 Years	5.80	3.28
10 Years	8.41	8.17

	Sharpe Ratio	Sharpe Ratio
3 Years	0.93	0.77
5 Years	0.22	0.02
7 Years	0.31	0.17
10 Years	0.48	0.46

Source: MPI

US Value vs. Growth to Date Performance

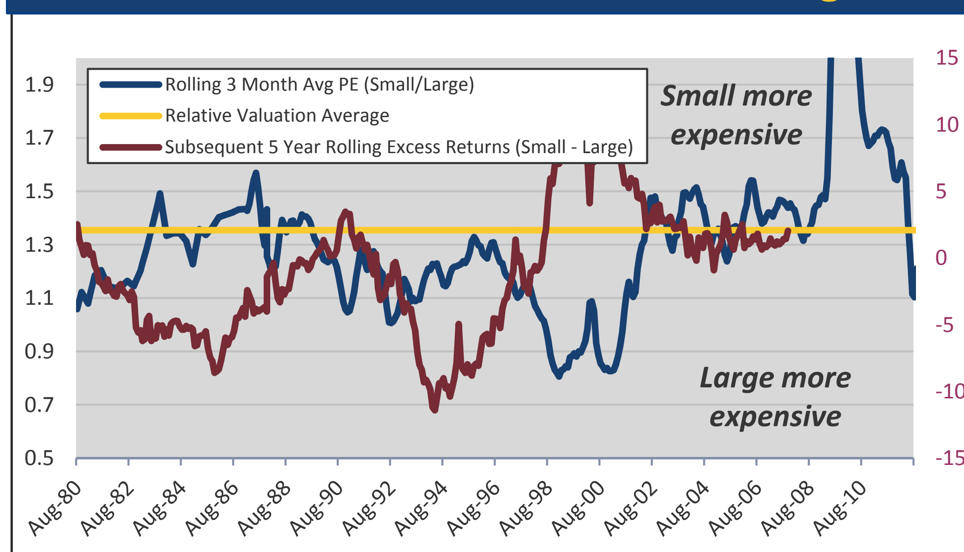


Source: MPI

STYLE TILTS: US LARGE VS. SMALL

- US large and small cap equities rallied during the quarter with the Russell 1000 up 6.3% and the Russell 2000 up 5.3%.
- Small cap stocks have underperformed large by 210 bps year-to-date.
- With US large cap equities outperforming small cap stocks YTD, small cap equities are beginning to become attractively valued on a P/E basis.
- Over the long run, the expected risk premium from investing in small cap companies has been rewarded.

Relative PE Ratio of US Small vs. Large



Source: Russell, Wurts & Associates

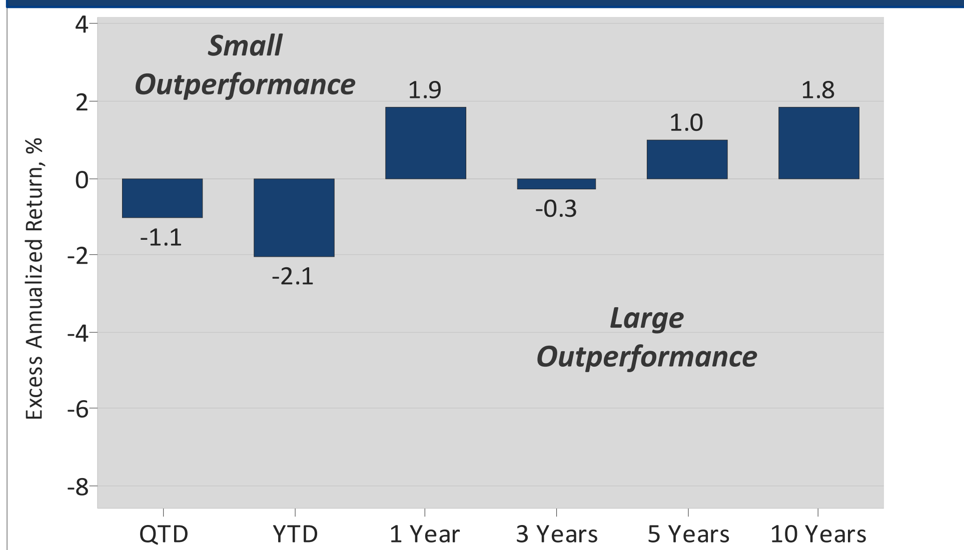
US Small vs. Large Absolute Performance

	Russell 1000 Annualized Return to date, %	Russell 2000 Annualized Return to date, %
QTD	6.31	5.25
YTD	16.28	14.23
1 Year	30.05	31.91
3 Years	13.27	12.99
5 Years	1.22	2.21
7 Years	4.60	4.68
10 Years	8.35	10.17

	Sharpe Ratio	Sharpe Ratio
3 Years	0.86	0.67
5 Years	0.12	0.18
7 Years	0.24	0.23
10 Years	0.48	0.49

Source: MPI

US Small vs. Large to Date Performance



Source: MPI

US EQUITY MARKETS VALUATION

- Assuming US growth remains near 2%:
  - US equities will continue to be slightly cheap, but less so than last quarter as rising prices have grown faster than earnings, dividends and book value.

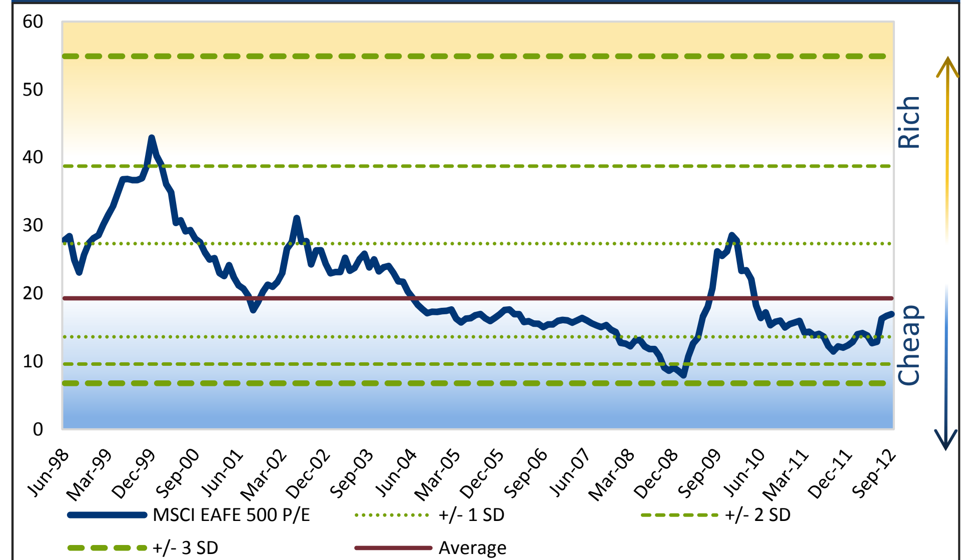
- Assuming US growth falls below 0%:
  - US equities will be fairly valued to slightly rich as earnings and dividend growth flatten or turn negative.

Sources: Bloomberg, Wurts

Sources: Bloomberg, Wurts

Sources: Bloomberg, Wurts

- Assuming European growth remains in a moderate recession:
  - European equities continue to be cheap, but less so than last quarter as equity prices have rallied on ECB policy actions while earnings and dividend growth continue to be weak.
- Assuming European growth falls dramatically:
  - European equities are fairly valued to slightly rich on the basis of fallings earnings and dividend growth.



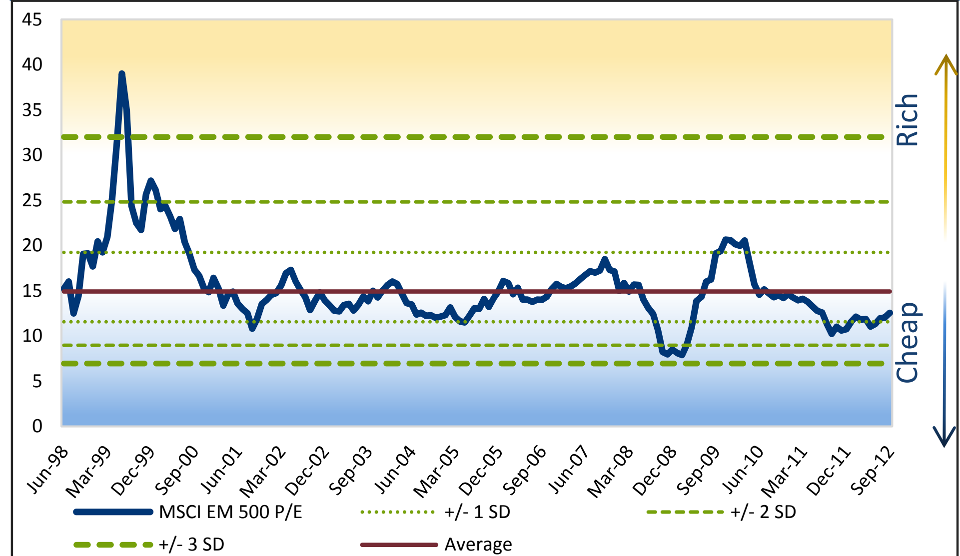
Sources: Bloomberg, Wurts

Sources: Bloomberg, Wurts

Sources: Bloomberg, Wurts

- Assuming EM growth remains near current levels:
  - EM equities are fair to slightly cheap but less so than last quarter as equity prices have increased slightly more than earnings and dividend growth.
- Assuming EM growth continues to decelerate:
  - EM equities are fair to slightly rich:
    - P/E values are likely to move toward -3 SD.
    - Dividend yields are likely to move higher.
    - Price to book to cheapen further.

Trailing P/E and Standard Deviation (SD)

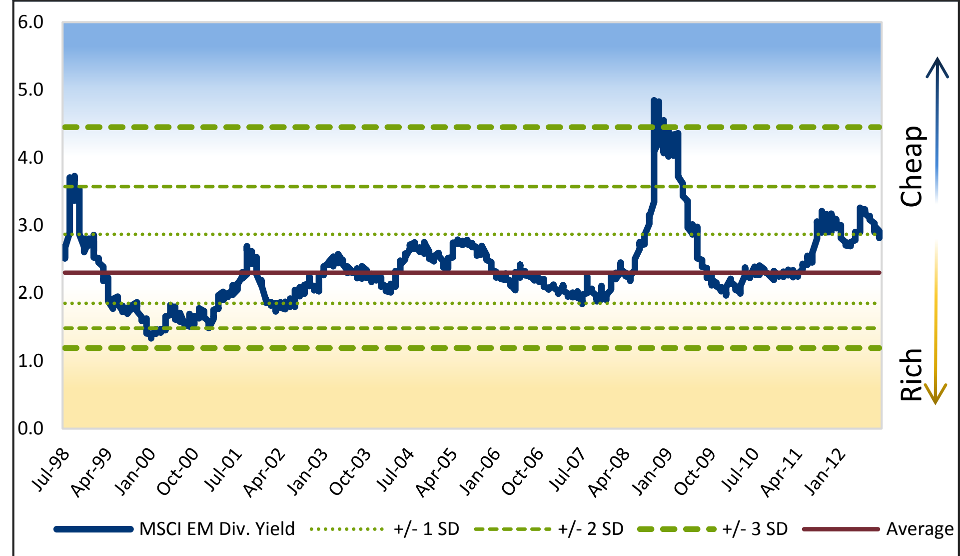


Sources: Bloomberg, Wurts

Price to Book and Standard Deviation (SD)

Sources: Bloomberg, Wurts

Dividend Yield Standard Deviation (SD)

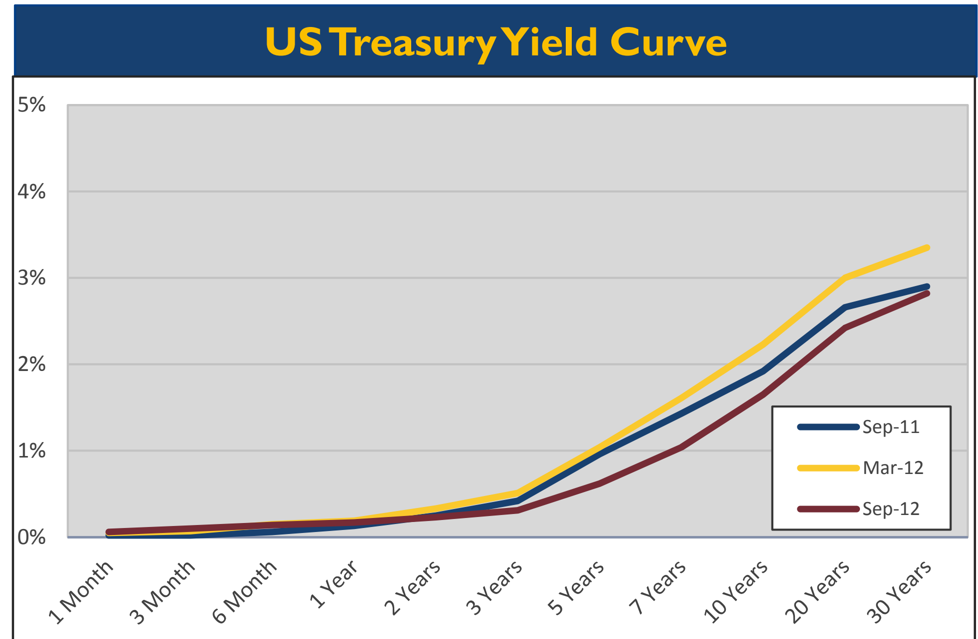


Sources: Bloomberg, Wurts

FIXED INCOME - RATES

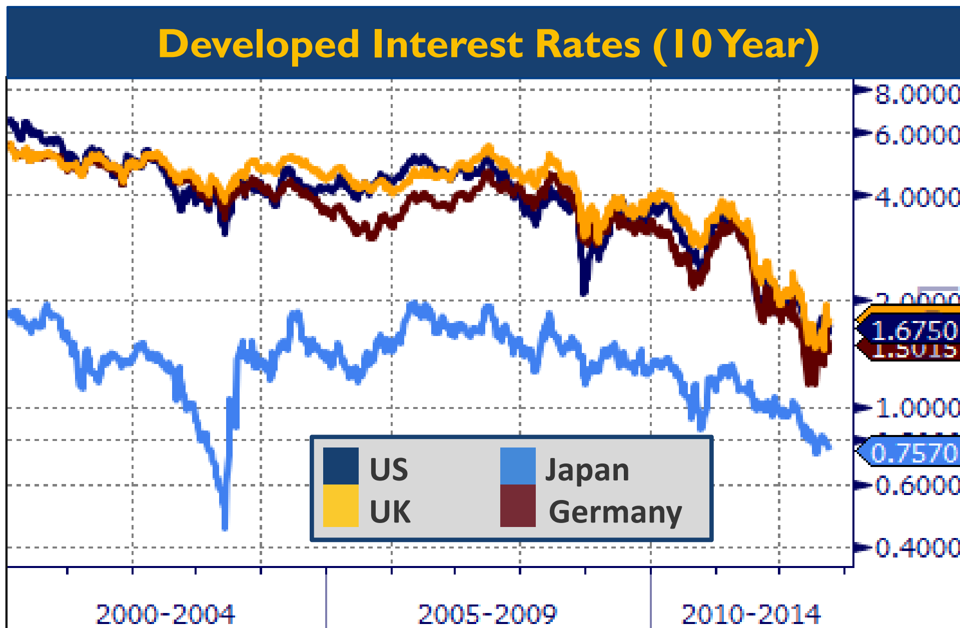
- The US Treasury 30-year yield is relatively unchanged since last quarter and remains below the yield from six months ago.
- The US Treasury rate curve is similar to last year on the short and long end of the curve whereas the belly of the curve has rallied from yields seen last year at this time.
- G10 sovereign debt yields are relatively unchanged from one quarter ago accept for France and Italy where yields fell 50 and 80 bps, respectively.
- Global credit yields are down from last quarter; the EMBI-Global index yield is down 60 bps.

US Treasury Yield Curve



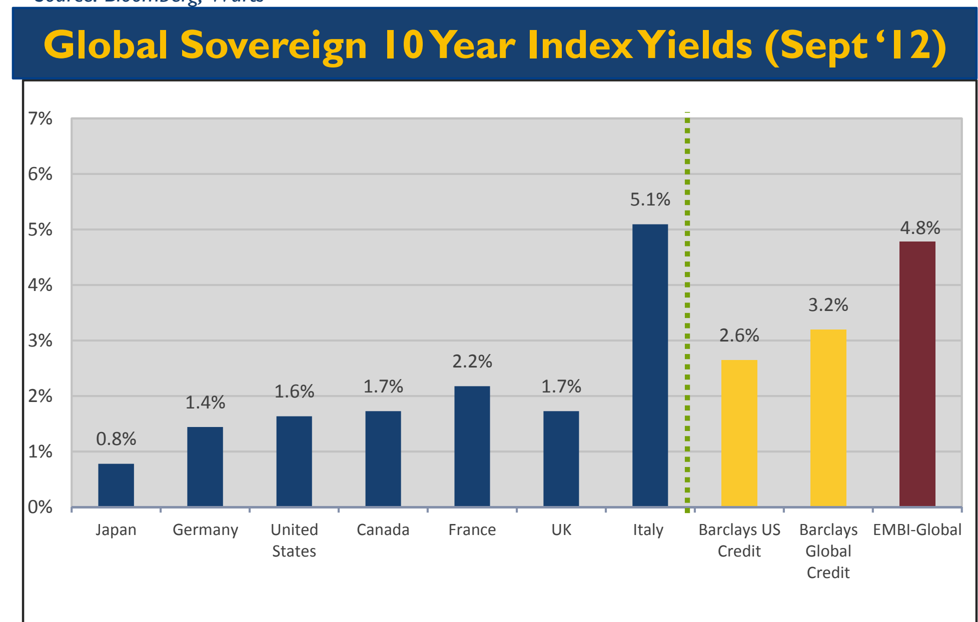
Source: Bloomberg, Wurts

Developed Interest Rates (10 Year)



Source: Bloomberg, Wurts

Global Sovereign 10 Year Index Yields (Sept '12)

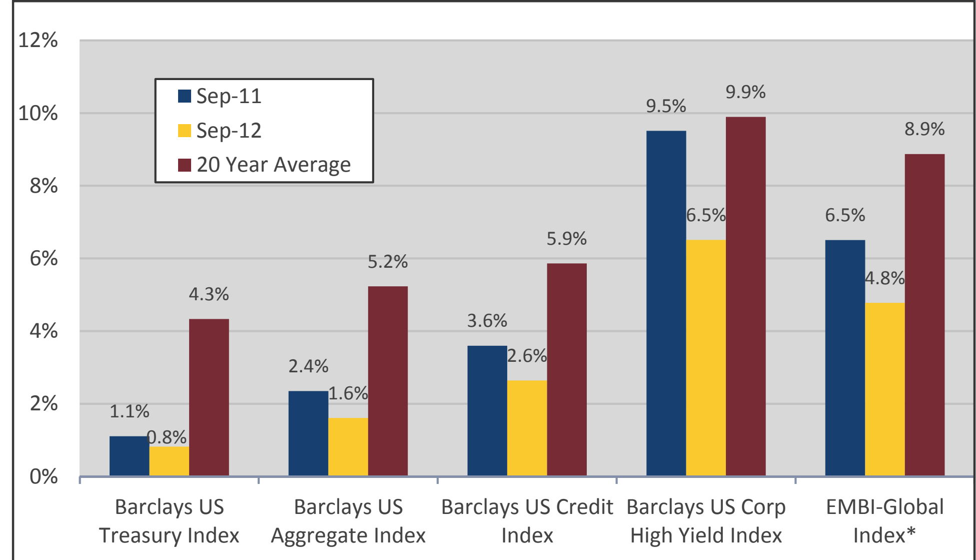


Source: Bloomberg , JP Morgan, Wurts

FIXED INCOME - CREDIT

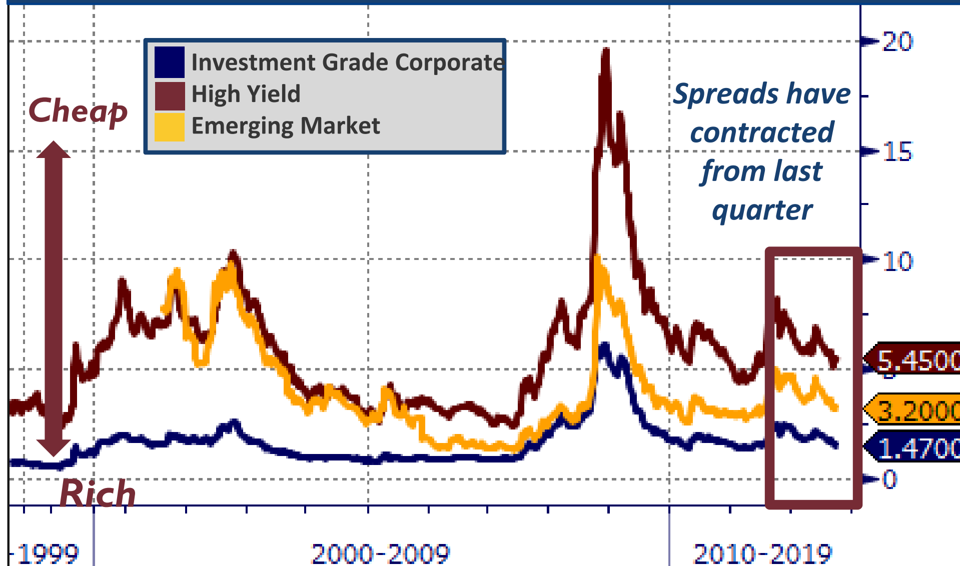
- Yields fell more in high yield and emerging markets than higher quality investment grade and Treasury indexes.
- The BC US Corp. High Yield index yield is down 90 bps from last quarter and 300 bps from last year.
- The BC Corporate High Yield index and BC EM index were up 4.5% and 6.8% for the quarter, respectively.

Nominal Fixed Income Yield to Maturities



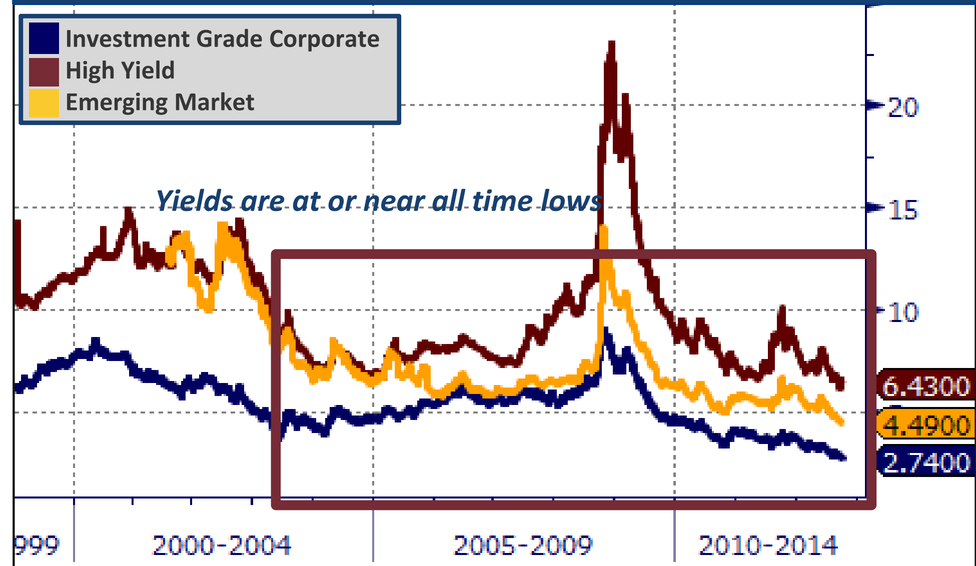
Source: Ibbotson, JP Morgan, Wurts

Credit Spread Markets – OAS Spread



Source: Barclays Capital, Bloomberg, Wurts

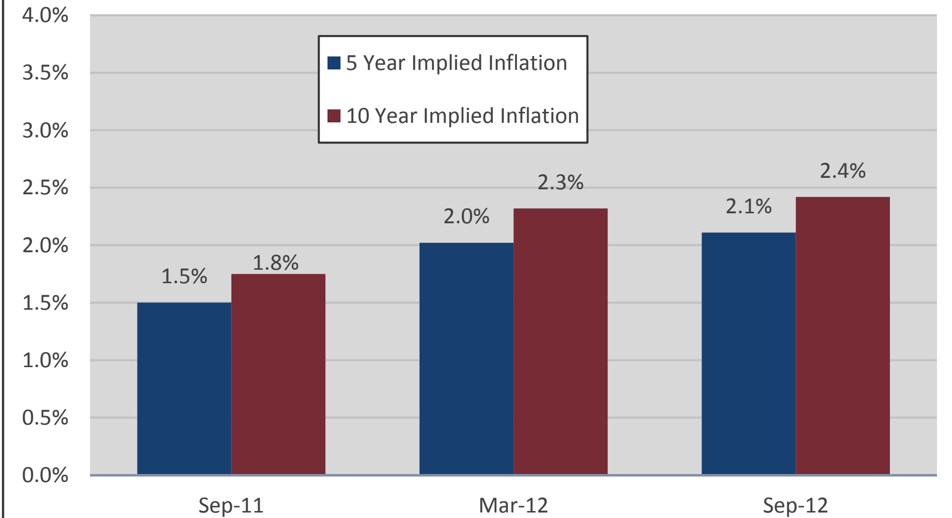
Credit Spread Markets – Yield to Worst



Source: Barclays Capital, Bloomberg, Wurts

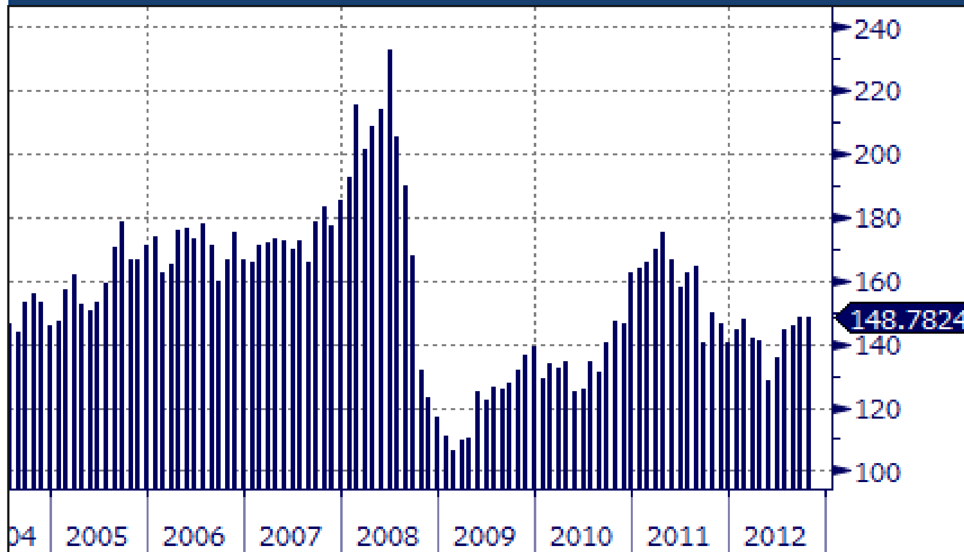
- TIPS 10-year breakeven rates are trending higher as commodity prices rose during the quarter.
- Commodities were up 9.7% for the quarter and 5.6% year-to-date.

Inflation Expectations (Nominal less Real)



Source: US Treasury, Conference Board, Bloomberg, Wurts

DJ UBS Commodity Index



Source: Bloomberg, Wurts

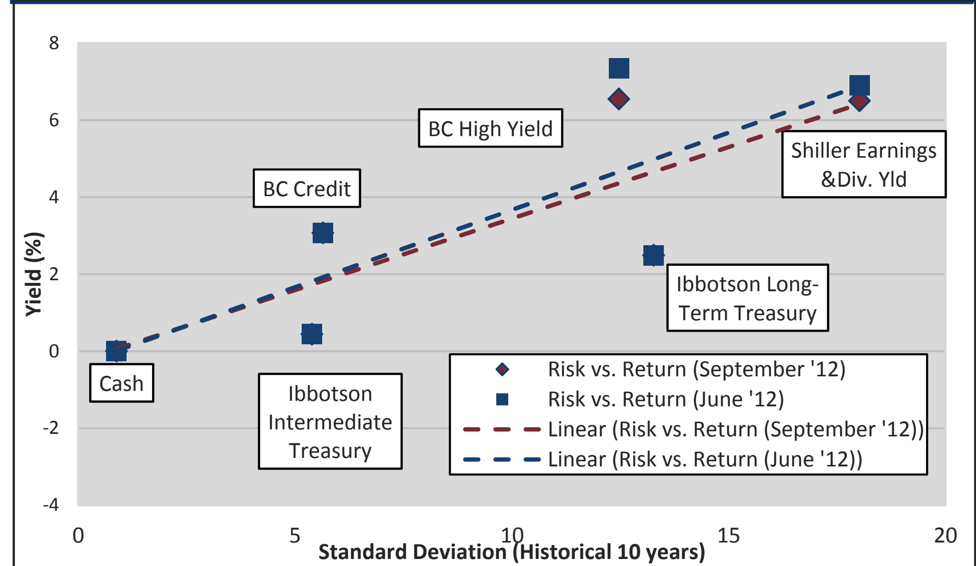
TIPs 10 Year Breakeven vs. Nominal Treasury

Source: Bloomberg, Wurts

RISK VERSUS RETURN

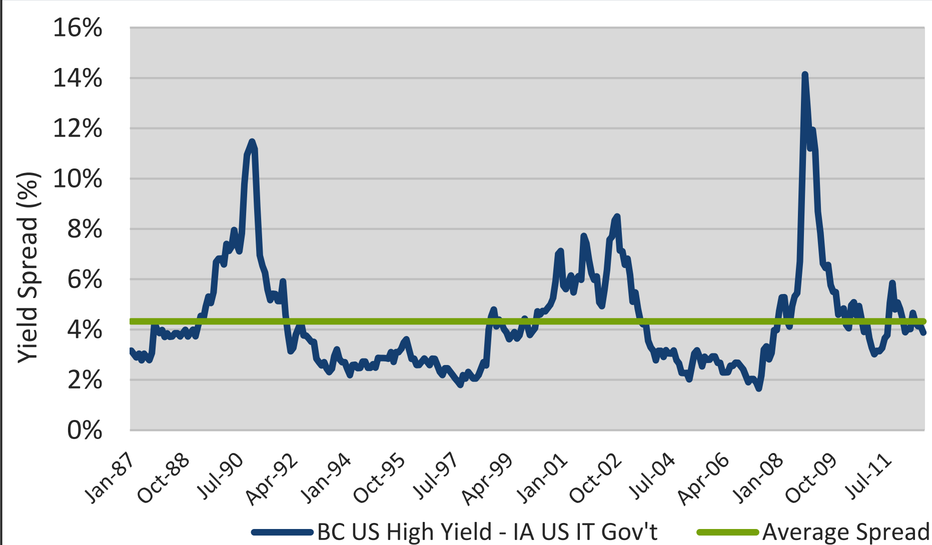
- Corporate credit and high yield are offering relatively higher implied risk-adjusted returns compared to Treasuries.
- High yield spreads relative to Treasuries have declined since the beginning of the year and are near the historic average.

Risk versus Return



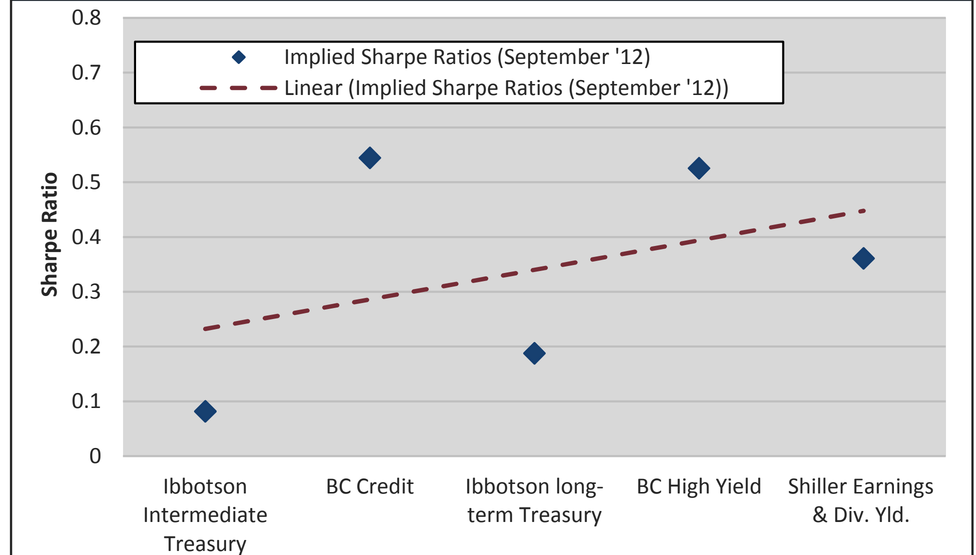
Source: Ibbotson, Shiller

Yield Spread



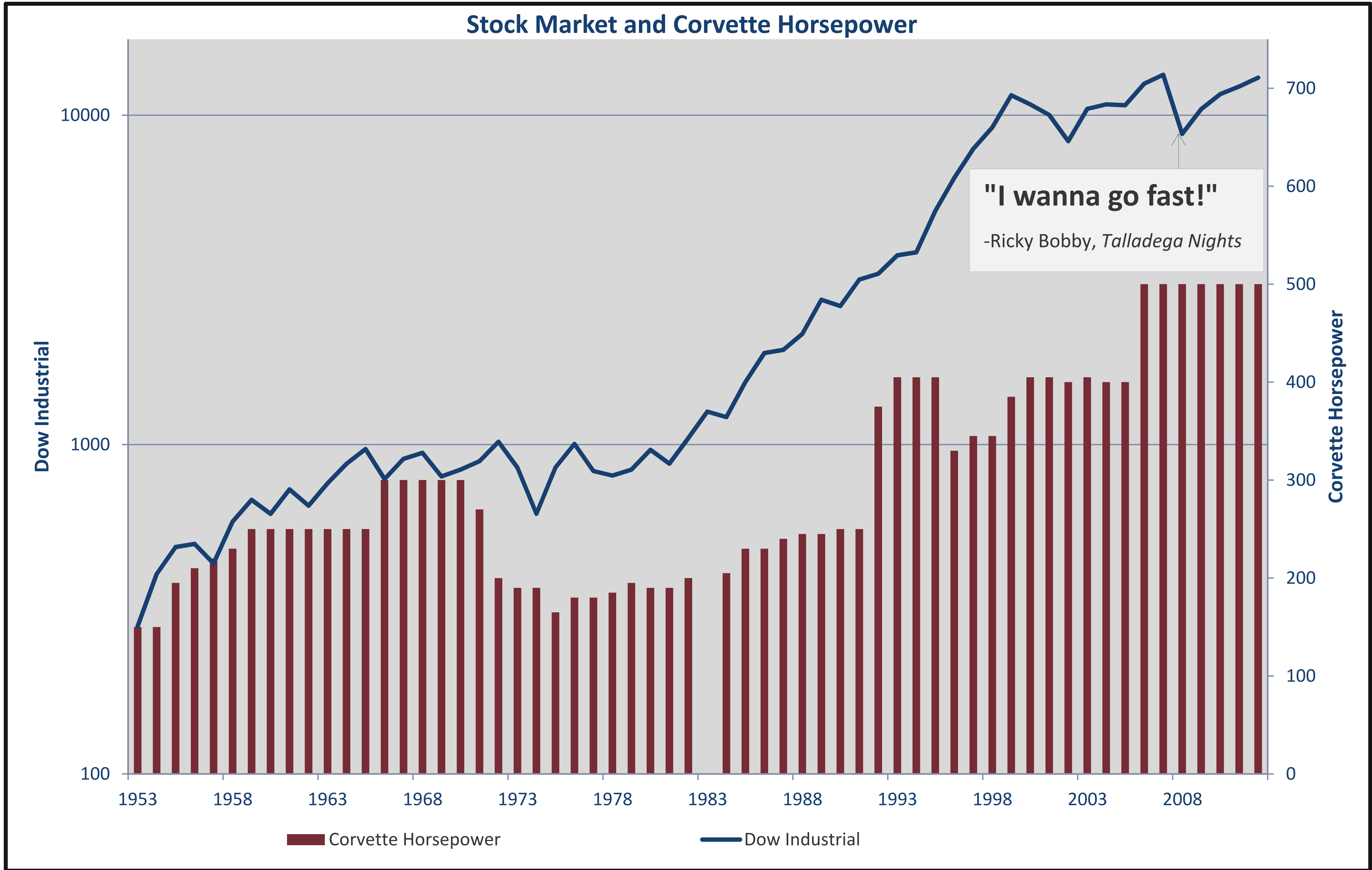
Source: Ibbotson, Wurts

Implied Sharpe Ratios



Source: Ibbotson, Shiller

STOCKS & CARS (1910 – 2012)


Stock Market and Corvette Horsepower
Dow Industrial
Corvette Horsepower
10000
1000
100
700
600
500
400
300
200
100
0
1953
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
"I wanna go fast!"
-Ricky Bobby, Talladega Nights
Corvette Horsepower
Dow Industrial

GLOBAL ECONOMIC OVERVIEW & TREND SUMMARY

Down Trend from last Quarter

Up Trend from last Quarter

Primary Economic Indicators

		Real GDP YoY			Manufacturing			CPI YoY			Government Debt % GDP		
	Country	Prior	Latest	Trend	Prior	Latest	Trend	Prior	Latest	Trend	Prior	Latest	Trend
$ Bloc	United States	1.6%	2.1%	Higher	3.2%	2.8%	Lower	3.9%	1.7%	Lower	98.5%	113.0%	Higher
	Canada	3.0%	1.9%	Lower	5.6%	-0.4%	Lower	3.2%	1.2%	Lower	85.1%	73.6%	Lower
Europe	United Kingdom	0.7%	-0.5%	Lower	-1.6%	-0.8%	Higher	5.2%	2.5%	Lower	75.1%	86.8%	Higher
	Germany	2.7%	1.0%	Lower	5.6%	-1.4%	Lower	2.6%	2.0%	Lower	83.2%	71.1%	Lower
	France	1.5%	0.3%	Lower	1.3%	-3.1%	Lower	2.2%	2.1%	Flat	82.4%	84.6%	Higher
	Japan	-0.6%	3.2%	Higher	-2.4%	-4.3%	Lower	0.0%	-0.4%	Lower	215.3%	256.6%	Higher
Emerging Markets	Brazil	2.1%	0.5%	Lower	-1.5%	-2.0%	Lower	7.3%	5.2%	Lower	65.2%	56.8%	Lower
	China	9.1%	7.6%	Lower	13.8%	8.9%	Lower	6.1%	2.0%	Lower	33.5%	10.1%	Lower
	Mexico	4.3%	4.1%	Flat	3.7%	4.9%	Higher	3.1%	4.6%	Higher	42.9%	43.1%	Flat

Critical Economic Indicators

		Unemployment Rate (%)			Wages & Salary			Household Credit			Household Consumption		
	Country	Prior	Latest	Trend	Prior	Latest	Trend	Prior	Latest	Trend	Prior	Latest	Trend
$ Bloc	United States	9.0%	8.1%	Lower	2.0%	1.7%	Lower	8.1%	4.4%	Lower	2.4%	2.0%	Lower
	Canada	7.2%	7.3%	Flat	2.0%	4.1%	Higher	3.4%	2.7%	Lower	4.9%	3.0%	Lower
Europe	United Kingdom	8.3%	8.1%	Flat	1.8%	1.4%	Lower	-2.2%	-3.1%	Lower	0.1%	3.1%	Higher
	Germany	6.9%	6.8%	Flat	3.5%	4.2%	Higher	0.8%	-0.1%	Lower	1.5%	-0.8%	Lower
	France	9.6%	10.6%	Higher	2.1%	2.2%	Flat	0.6%	9.3%	Higher	0.3%	-0.1%	Lower
	Japan	4.2%	4.2%	Flat	-0.5%	0.2%	Higher	1.5%	3.9%	Higher	1.1%	0.1%	Lower
Emerging Markets	Brazil	6.0%	5.9%	Flat	11.2%	9.5%	Lower	17.5%	12.9%	Lower	-0.1%	0.6%	Higher
	China	4.1%	4.1%	Flat	17.1%	19.4%	Higher	6.1%	6.8%	Higher	17.0%	14.1%	Lower
	Mexico	5.2%	4.9%	Lower	0.2%	-2.2%	Lower	20.9%	22.7%	Higher	5.6%	6.0%	Higher

APPENDIX

PERIODIC TABLE OF RETURNS – SEPTEMBER 2012

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012*
Best	17.5	59.9	29.1	74.8	16.6	38.3	23.1	35.2	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	16.8
	8.9	51.2	13.8	32.9	8.1	37.2	23.1	31.8	20.3	43.1	22.8	8.4	10.3	48.5	22.3	21.4	26.9	16.2	1.8	37.2	24.5	7.8	15.8
	7.9	41.7	12.3	26.3	6.4	31.0	21.6	30.5	16.2	33.2	12.3	7.3	6.7	46.0	20.7	18.9	23.5	15.8	-6.5	34.5	19.2	2.6	14.4
	2.3	41.2	11.4	23.8	4.2	25.8	21.4	19.2	15.6	27.3	11.6	4.1	1.7	38.6	16.5	14.0	22.2	11.8	-21.4	32.5	16.8	0.9	14.1
	0.9	24.6	7.8	18.1	2.7	25.1	14.9	16.2	14.4	26.5	7.0	2.8	1.0	30.0	14.3	7.8	16.1	11.6	-25.5	20.6	16.7	0.4	12.3
	-0.3	22.7	7.4	13.4	-0.4	18.5	14.4	13.9	8.7	24.3	6.0	-2.4	-6.0	29.7	13.1	7.5	13.6	10.3	-28.9	19.7	15.5	0.1	10.6
	-8.1	16.0	7.3	12.9	-1.5	15.2	11.3	12.9	5.1	16.0	4.1	-3.8	-8.9	23.9	11.7	7.1	13.4	8.5	-35.6	19.4	13.1	-2.9	5.6
	-10.6	14.5	5.0	9.8	-2.0	11.6	10.3	9.7	1.2	11.4	1.5	-5.6	-11.4	22.5	9.1	5.3	10.4	7.1	-36.9	18.9	13.0	-5.5	4.0
	-17.4	12.5	3.7	3.1	-2.4	11.1	6.4	5.3	-5.1	7.3	-14.0	-9.2	-15.5	11.6	6.9	4.7	9.1	7.0	-38.4	11.5	8.2	-5.7	3.3
	-21.8	5.8	3.6	2.9	-2.9	7.5	6.0	2.1	-6.5	4.7	-22.4	-19.5	-15.7	9.0	6.3	4.1	4.8	4.7	-38.5	5.9	6.5	-11.7	0.0
Worst	-23.2	-5.6	-4.3	1.4	-3.5	5.8	5.3	-3.4	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.0	4.3	-0.2	-43.1	0.2	5.7	-13.3	NA
	N/A	N/A	-11.9	-1.1	-7.3	-5.2	3.6	-11.6	-27.0	-1.5	-30.6	-21.2	-30.3	1.1	1.2	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	NA

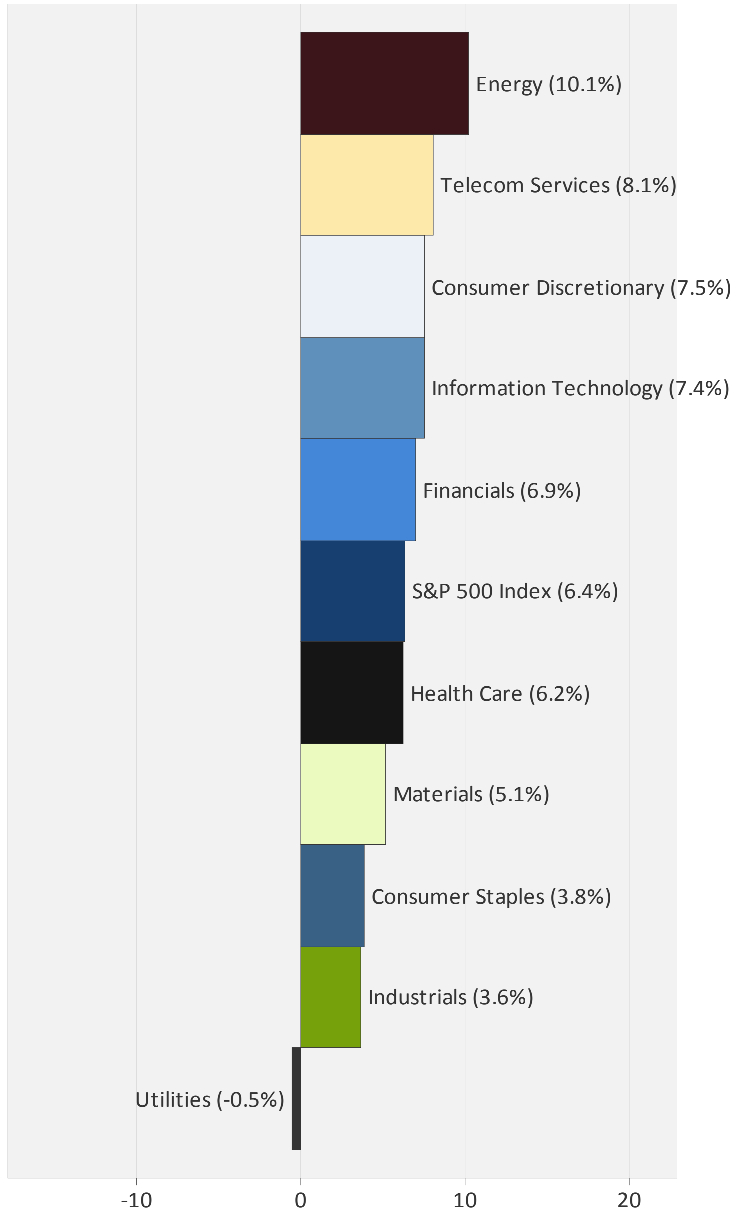
- Large Cap Growth US Stocks (Russell 1000 Growth Index)
- Large Cap Value US Stocks (Russell 1000 Value Index)
- Small Cap Growth US Stocks (Russell 2000 Growth Index)
- Small Cap Value US Stocks (Russell 2000 Value Index)
- International Stocks - Developed Markets (MSCI EAFE Index)
- International Stocks - Emerging Markets (MSCI EM Index)
- Hedge Fund of Funds (HFRI Fund of Funds Composite Index)
- Domestic Fixed Income (Barclays Capital Aggregate Bond Index)
- Real Estate (NCREIF Property Index)
- Cash (Citigroup 3-Mo Treasury)
- BNY Mellon Universe Median (Total Funds)
- Commodities (DJ UBS Commodity Index)

Source: Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF) and BNY Mellon

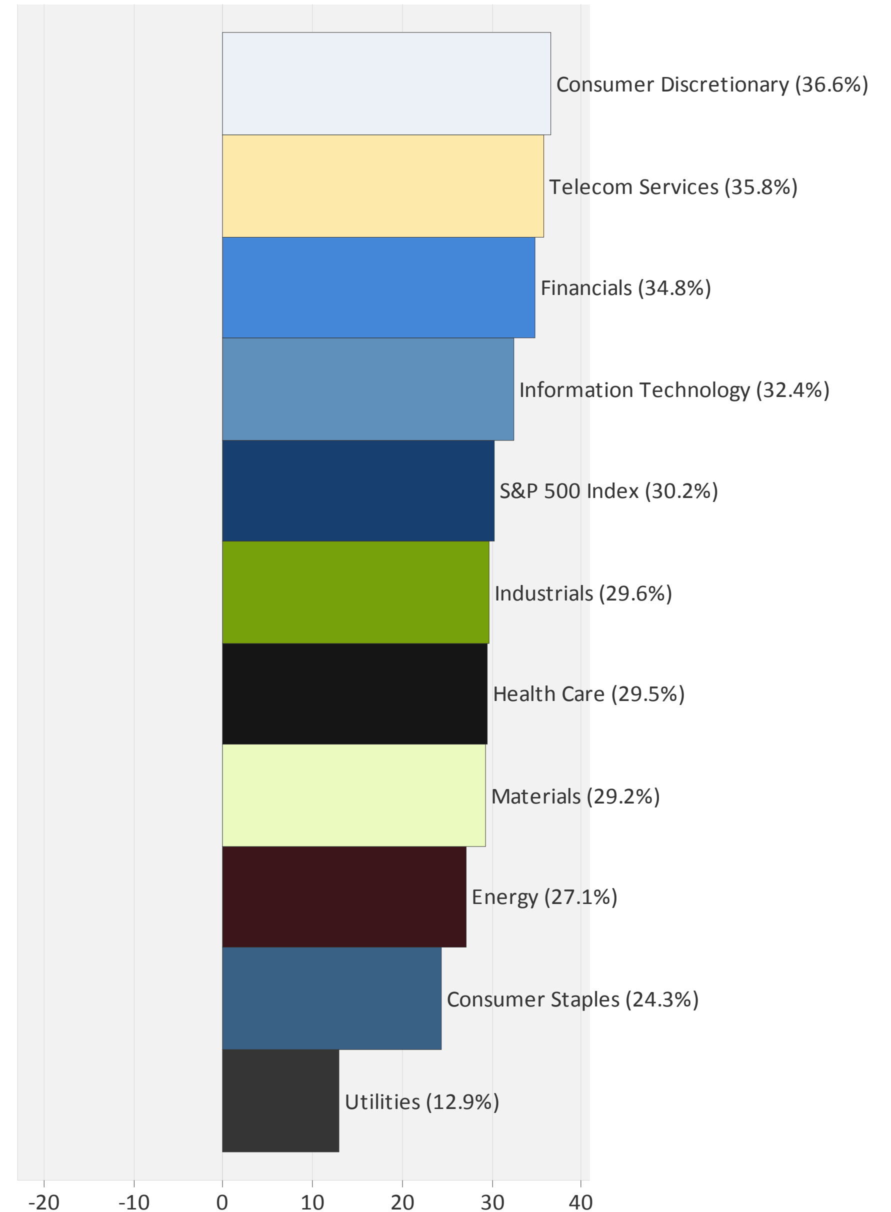
* Returns are Year to Date.

S&P 500 AND S&P 500 SECTOR RETURNS

QTD Ending September 2012



One Year Ending September 2012



Source: MPI

DETAILED EQUITY & FIXED INCOME RETURNS

Domestic Equity 9/2012	1-Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Core Index							
S&P 500 Index	2.6	6.4	16.4	30.2	13.2	1.1	8.0
S&P 500 Equal Weighted	2.5	5.9	14.4	28.7	14.0	3.2	11.1
DJ Industrial Average	2.8	5.0	12.2	26.5	14.5	2.2	8.6
Russell Top 200	2.8	6.6	17.2	30.9	12.9	0.9	7.3
Russell 1000	2.6	6.3	16.3	30.1	13.3	1.2	8.4
Russell 2000	3.3	5.3	14.2	31.9	13.0	2.2	10.2
Russell 3000	2.6	6.2	16.1	30.2	13.3	1.3	8.5
Russell Mid Cap	2.1	5.6	14.0	28.0	14.3	2.2	11.2
Style Index							
Russell 1000 Growth	2.0	6.1	16.8	29.2	14.7	3.2	8.4
Russell 1000 Value	3.2	6.5	15.8	30.9	11.8	(0.9)	8.2
Russell 2000 Growth	3.0	4.8	14.1	31.2	14.2	3.0	10.6
Russell 2000 Value	3.6	5.7	14.4	32.6	11.7	1.4	9.7

Fixed Income 9/2012	1-Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Broad Index							
Barclays US Treasury US TIPS	0.5	2.1	6.3	9.1	9.3	7.9	6.6
Barclays US Treasury Bills	0.0	0.0	0.1	0.1	0.2	0.8	1.9
Barclays US Agg Bond	0.1	1.6	4.0	5.2	6.2	6.5	5.3
Duration							
Barclays US Treasury Long	(2.0)	0.2	4.4	6.3	12.0	11.1	7.7
Barclays US Treasury	(0.3)	0.6	2.1	3.0	5.4	6.2	4.8
Barclays US Treasury 1-3 Yr	0.0	0.3	0.4	0.6	1.5	2.8	2.8
Issuer							
Barclays US Corp. High Yield	1.4	4.5	12.1	19.4	12.9	9.3	11.0
Barclays EM	1.6	6.8	14.2	19.8	12.2	10.0	12.7
Barclays US MBS	0.2	1.1	2.8	3.7	5.0	6.4	5.2
Barclays US Agency Interm	0.1	0.7	1.6	2.2	3.2	4.6	4.1
Barclays US Credit	0.6	3.5	8.3	10.1	8.7	7.9	6.5

International Equity 9/2012	1-Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Broad Index							
MSCI EAFE	3.0	7.0	10.6	14.3	2.6	(4.8)	8.7
MSCI AC World ex US	3.8	7.5	10.9	15.0	3.6	(3.7)	10.3
MSCI EM	6.1	7.9	12.3	17.3	6.0	(1.0)	17.4
MSCI EAFE Small Cap	4.7	7.9	13.6	13.0	5.1	(2.6)	11.7
Style Index							
MSCI EAFE Growth	2.6	6.4	10.9	15.2	4.7	(3.9)	8.2
MSCI EAFE Value	3.4	7.6	10.2	13.3	0.5	(5.7)	9.1
Regional Index							
MSCI UK	2.4	7.1	10.7	20.8	7.9	(3.2)	8.5
MSCI Japan	2.4	(0.8)	2.4	(1.5)	(0.4)	(6.4)	3.9
MSCI EM Asia	7.3	8.9	14.5	18.2	6.5	(1.4)	15.1
MSCI EM Latin America	3.9	4.7	4.3	13.5	2.9	0.6	24.8

Other 9/2012	1-Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Index							
DJ UBS Commodity	1.7	9.7	5.6	6.0	5.3	(3.0)	5.2
Wilshire US REIT	(1.8)	(0.2)	14.7	32.4	20.7	1.7	11.4

Source: Morningstar, Inc.