

WARNING: Correlations are Rising!

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Goodbye diversification. Goodbye asset allocation. Hello risk.

That sums up the current financial markets as correlations among different asset classes have moved to multi-year highs and suggests both volatility and a steep correction in equity prices is likely imminent. Current data suggests finding a safe haven in today's markets has become difficult if not impossible.

In 2015 the average correlation between the S&P 500 and other major asset classes averaged +.38, informing us that only 38% of the moves in non-U.S. equity asset classes could be explained by the move in domestic stocks. That modest correlation has risen to +.63 and continues to trend higher. Emerging markets and overseas developed markets have seen correlations rise to +.83 and +.82 respectively. Most concerning for investors, however, is the sharp rise in correlations between U.S. stocks and fixed income, where traditional diversification was the highest.

Last year the correlations between stocks and bonds

was negative. In fact, the correlation between the S&P 500 and lona duration U.S. Treasury bonds was -.53 providing asset managers a safe haven when equity volatility rises. Today the correlation between the two is +.17 and the correlation between stocks and investment grade corporate bonds stands at +.32. When stocks and bonds move in tandem it has historical suggested a bumpy ride for investors.

It is not difficult to find the Source: Peak Capital Management behind culprit the

escalation in risk in the financial markets: The Fed and other Central Banks. The performance of the economy, health in the labor markets, strength or weakness in the U.S. dollar, or any other macroeconomic metric have become irrelevant except to the extent they are likely to impact Fed policy decisions. When equity and fixed income markets all trade on a single factor the stage is set for a massive correction in asset prices.

Equity risk premiums are at historic lows and investors are willing to buy junk bonds with yields under 5% yet

"Yellen is not concerned about bubbles brewing because she is at the helm of the ship causing one of the largest financial bubbles in history; the bubble of Central Bank accommodation."

Fed Chair Yellen recently stated, "In general, I would not say that asset valuations are out of line with historical norms." Yellen is not concerned about bubbles brewing because she is at the helm of the ship causing one of the largest financial bubbles in history; the bubble of Central Bank accommodation. It is true that the tide of QE or quantitative easing caused all ships to rise just as the end of massive Central Bank accommodation will likely lead to the sinking of all asset prices.

What is particularly disturbing about the sharp increase in correlations today is the backdrop of weakening economic output and recessionary warning signs. Data

mining often leads to wrong conclusions as the supposed cause and effect relationship is absent with many indicators. Some warning signs however, have been extremely reliable with predictive value. inverted vield curve. for signaled example, has pending recession with near flawless accuracy. We are closely tracking another indicator that accurately forecasted the economic slowdowns in 1981, 1992, 2002, and 2007.

There is historically a strong correlation between the yield on BBB industrial bonds and economic growth. When yields

on the lowest rated investment grade corporate bonds are rising it provides a headwind to economic expansion. Conversely, when those yields are falling a tailwind is typically present. Whenever the real rate of BBB bonds has exceeded 2X the rate of economic growth measured by GDP a recession has closely followed. Last week the real rate on BBB bonds stood at 3.39% and the current annual growth rate of U.S. GDP stands around 1.2%, less than one-third the yield on BBB bonds.

	2015	SPY	TLO	HYG	IWM	LQD	EEM	EFA
	SPY	1.00						
	TLO	-0.53	1.00					
	HYG	0.72	-0.39	1.00				
,	MM	0.78	-0.36	0.66	1.00			
,	LQD	-0.03	0.67	0.05	0.01	1.00		
	EEM	0.58	-0.16	0.55	0.51	0.22	1.00	
,	EFA	0.79	-0.32	0.52	0.61	0.02	0.70	1.00
,								
,	AVG	0.38	-0.18	0.35	0.37	0.16	0.40	0.39
	Today	SPY	TLO	HYG	IWM	LQD	EEM	EFA
	Today SPY	SPY 1.00	TLO	HYG	IWM	LQD	EEM	EFA
			TLO	HYG	IVM	LQD	EEM	EFA
:	SPY	1.00		HYG	IWM	LQD	EEM	EFA
:	SPY TLO	1.00 0.17	1.00		1.00	LQD	EEM	EFA
:	SPY TLO HYG	1.00 0.17 0.76	1.00 0.24	1.00		LQD 1.00	EEM	EFA
: :	SPY TLO HYG WM	1.00 0.17 0.76 0.91	1.00 0.24 0.10	1.00 0.74	1.00		1.00	EFA
: : : :	SPY TLO HYG WM LQD	1.00 0.17 0.76 0.91 0.32	1.00 0.24 0.10 0.92	1.00 0.74 0.48	1.00 0.23	1.00		EFA
	SPY TLO HYG WM LQD EEM	1.00 0.17 0.76 0.91 0.32 0.83	1.00 0.24 0.10 0.92 0.09	1.00 0.74 0.48 0.73	1.00 0.23 0.81	1.00 0.25	1.00	

Tax Wars



not exactly an intergalactic conflict, a war between Europe and U.S. multinationals has erupted after the EU announced they were requiring Ireland to collect \$14.5 billion in illegal tax breaks Apple received. Apple is not the only U.S. company the EU is pursuing, Amazon, Facebook, Google, Microsoft are also accused of receiving • illegitimate tax breaks. The U.S. government entered the fray with U.S. Treasury Secretary Jack Lew claiming the EU is trying establish itself as a "supranational tax authority" and stated the U.S. was considering retaliatory measures. Ironically, it is U.S. taxpayers who will foot the tax bill as U.S. companies receive a tax credit for foreign taxes paid. One can only imagine how Donald Trump, if elected President, would respond to the EU collecting billions in revenue from the U.S.

- The U.K. and Australia have implemented a Diverted Profits tax, known as the Google Tax, to punish companies trying to shelter corporate profits from higher tax jurisdictions.
- There is speculation the EU ruling could result in Apple repatriating a large chunk of the \$2.4T in cash they maintain outside of the U.S. avoiding the high U.S. corporate tax rate.
- According to the Tax Foundation, the marginal corporate tax rate in the U.S. is the 3rd highest in the world with only the United Arab Emirates and Puerto Rico having higher rates.

Confidence Ratings 11th Hour

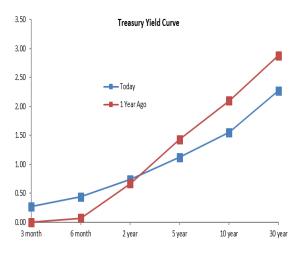


Source: Vistage/WSJ

Confidence continues to send mixed CEO confidence, signals. demonstrated in the index chart below, shows a steady decreasing trend going 2016 has shown a back to 2015. recovery in CEO confidence coming out of a steady decline. The Conference Board Consumer Confidence Index increased in August and continued to improve in September. "Consumer confidence increased in September for a second consecutive month and is now at its highest level since the recession, said Lynn Franco, Director of Economic Indicators at The Conference Board. The National Federation of Independent Business (NFIB) reported that The Index of Small Business Optimism declined two-tenths of a point in August to 94.4, with owners refusing to expand.

- The Consumer Confidence Index is at 104.1 as of September 28th, 2016, up from 101.8 in August (Conference Board).
- The September Conference Board reading of consumer confidence was a post recessionary high.
- Based on the NFIB small business report, the expectation among small businesses owners is worsening conditions.
- Over the course of 2016 and namely the second quarter, CEO confidence has increased according to the Conference Board.

Measuring the Curve



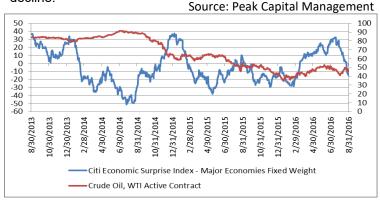
Source: Bloomberg

The yield curve is often used as a leading indicator to forecast a slowdown in the U.S. economy. A flattening or inverted yield curve - where shorterterm rates exceed longer-term rates - is often seen as a signal for slower economic or recession. But there is reason to believe that this time is different. In large part, interest rates today are a reflection of overseas demand for yield, and not necessarily an indication of the health of the U.S. economy. With nowhere else to go, foreign investors are buying longerdated treasuries for yield, while the Fed seeks to raise short term rates. The resulting shift in the yield curve isn't necessarily a reflection of the U.S. economy contracting and going into a recession. The bottom line is that the market forces impacting the yield curve today are forces we have never seen in the past.

- The Treasury yield curve has flattened over the past year, with short term rates increasing and longer term rates declining (see chart for rates across all maturities).
- The shift in the yield curve might not be an indicator of a recession in the U.S., but the growing appetite for yield from foreign investors combined with a Fed that wants to raise interest rates.
- A flat or inverted yield curve is not a good thing. Furthermore, longer-term yields are out of the control of the Fed. With negative global interest rates, the demand for Treasury bonds isn't likely to wane anytime soon.

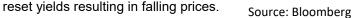
Macro View – Correlations, Causation & Trends

Global trade growth and trends have been correlated to overall According to the International economic trade growth. Monetary Fund, trade growth has slowed since 2012 relative to overall economic growth. Weakness in the global economy, namely investment, has caused muted trade growth. The IMF cites up to 75% of the slowdown being tied to restrained trade growth. Other factors provided by the IMF include a global move towards protectionism and a decline in global value chains. Over the past year, global equities have tracked changes in the Citigroup G10 economic surprise index. The correlation over the course of the third quarter has been .88 (Rick Golod). In the past, the direction of the index has been influenced by changes in the price of oil. The chart below (Bloomberg Data) shows three years of data linking the downward trends between crude with global economic surprise decline.



Fixed Income – Thanks for Nothing

The SEC passed new regulations for money market funds in July 2014 to be implemented in 2016. As is often the case when a governmental body decides to change rules, there are unintended consequences that create disruption in the markets. The SIFMA rate represents the Municipal Swap Yield and determines the rate paid for short-term, investment-grade municipal debt. The swaps no longer meet the requirements for money market funds creating a sudden supply/demand imbalance. The rate had remained steady at 0.01% for 19 weeks and had not been above .26% at any time in the last 5 years. The rapid ascent benefits some holders of short duration muni's, but is wreaking havoc on the popular closed-end muni funds which deliver attractive yields through the use of leverage. Higher borrowing costs are squeezing margins and many closed-end muni's are having to





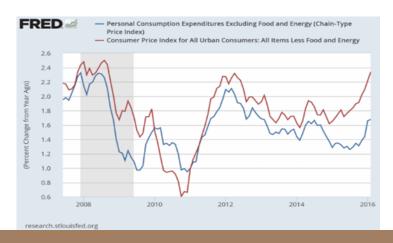
Taking Stock – An Unreliable Green Back

Investors have long relied on a falling currency serving as an indication that the corresponding equity price would appreciate. This trend and negative correlation has come unglued this past year. From February 2016 to May 2016, the S&P 500 rose 16% while the US Dollar index declined 4%. The chart below shows emerging positive correlation as the dollar began to rise in May. From May 2016 to August 2016, the dollar was up 3.5% while the S&P was up 6% (Bloomberg). Investors should consider relying on the expertise of portfolio managers to monitor correlations and examine variables that may alter the correlation between currencies and equities. The rally in the dollar was based largely on the European Central Bank and Bank of Japan's commitment to devaluing their respective currencies. Further, appreciating equities in the US demonstrated a lack of risk aversion or concern over a slowing US economy.



Technical – Charting Leading Indicators

Technical analysis typically involves analyzing charts of stock prices and moving averages to identify trends in the markets that traders take advantage of. Just as helpful, however, can be charts on leading indicators that are known to exert significant influence over the direction of the markets. It is undisputed that one of the most important of these leading indicators is inflation as expectations about future prices weighs heavily on the Fed's policy decisions. Core CPI (red line) has risen dramatically since the beginning of the year and is now approaching 2.4% on a year-over-year basis, well ahead of the Fed's "target" of 2% inflation. It is widely known that the Fed relies more upon the Personal Consumption Expenditures (blue line) which has risen from 1.3% to 1.7% on a year-over-year basis. Rising inflation is a worst case scenario for Fed accommodation and future stock prices.



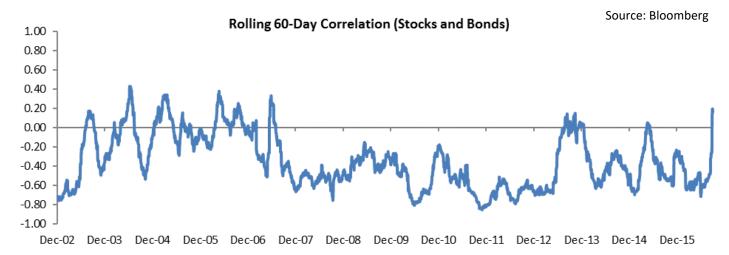
Are You Diversified?

Over the past several months, we have discussed our process of constructing investment portfolios. Particularly, we have described how we allocate capital based on a risk budget, whereby we balance the portfolios based on how much risk each holding contributes to the entire portfolio. As market dynamics shift over time, we systematically rebalance the underlying holdings so that we don't become overly concentrated (from a risk point of view) in any single asset class.

However, simply weighting a portfolio based on a risk budget doesn't necessarily guarantee that the portfolio will be properly diversified. For example, we can combine two asset classes (e.g. stocks and bonds) in such a way that the risk from equities contributes 50% to total

Clint Pekrul, CFA

Historically, the returns on the S&P 500 and Barclays Long-Term Treasury Indexes have exhibited a correlation of roughly -0.20, which simply means that when the S&P 500 goes up (down) the Barclays Long-Term Treasury Index tends to go down (up). But there are points in time where this correlation breaks down. The correlation of returns between stocks and bonds tends to rise when the Federal Reserve begins tightening interest rates. More specifically, the correlation rises when the market expects the Federal Reserve to raise interest rates. Although the correlation between stocks and bonds can rise for other reasons, it's when the market expects higher interest rates in the near term that investors fear the repricing of all assets. This could be a reason why stocks and bonds begin to move together.



portfolio volatility, while the risk from bonds contributes the remaining 50% of total portfolio volatility.

Generally, the returns from stocks and bonds have historically exhibited a low correlation. In other words, the returns don't tend to move together over the long term. This tendency is why investment managers combine stocks and bonds into a single portfolio to manage risk. Since the returns are not highly correlated, combining the two assets together can potentially reduce overall portfolio volatility. This is the basis for the classic 60/40 portfolio. By combining stocks and bonds in a single portfolio, portfolio returns can potentially be smoothed out over time, which results better risk-adjusted performance.

But what happens when stocks and bonds are not negatively correlated? Suppose that the returns for these two asset classes start to move together. If this happens, the correlation between stocks and bonds goes up and the risk of a traditional 60/40 portfolio increases. The diversification benefit (i.e. the risk reduction that comes from holding low correlated assets) diminishes and future portfolio returns become more uncertain. A structural shift in correlations can result in unforeseen outcomes with a basic 60/40 portfolio. This could be an unwelcome surprise for investors.

In the chart above, we graphed the rolling 60 day correlation of returns between the S&P 500 (SPY) and the Barclay's Long-Term Treasury Index (TLT). The average for the period is roughly -0.20. But we can observe periods around 2004 when the correlation rose above 0.00. This was the last time the Fed meaningfully began raising interest rates after the recession of the early 2000s. We can also observe another spike above 0.00 in 2013 during the so-called Taper Tantrum, when both bonds and stocks fell. Today (far right in the chart above), we observe another spike in correlations above 0.00 as the markets prepare for a possible Fed rate hike at the end of the year.

What does all this mean? We suggest you have a plan for maintaining diversification amid great uncertainty going forward. If correlations between stocks and bonds rise materially, don't expect the traditional 60/40 portfolio to deliver steady returns. Have a framework for ensuring diversification. Our trading systems evaluate correlations on a daily basis across all major asset classes (not just stocks and bonds). If we see that average correlations start to rise, we systematically alter the asset mix in our portfolios. At extremes, this could entail our portfolios moving into short positions to broad asset classes (i.e. a non-correlated security) or cash.

O: Is the Fed being Political?



The Federal Reserve was established by Congress to serve as the nation's Central Bank and oversee monetary policy. The Fed is accountable to taxpayers and the Congress but many question just how much accountability really exists. The Fed Chair is appointed by the

President and must be confirmed by Congress. Because the Fed does not report directly to the President it is viewed as being apolitical.

Notwithstanding Donald Trump's accusation regarding the Fed or Chairwoman Yellen's insistence that the Fed never discusses politics or political implications, there is no doubt that politics do play a role in Fed decision making. First, it is well known that the Fed attempts to carry out its policies in a way that will not directly impact the political process. Remaining within its mandates on full employment and stable prices, the Fed typically holds off making policy changes immediately before Presidential elections. A rate hike that causes the economy to slow or a rate cut that is intended to boost asset prices would be viewed as politically-motivated if done too close to an election.

A more relevant criticism of the Fed would involve the composition of those who serve on the Federal Reserve Board and particularly the Federal Open Market Committee. These roles have traditionally been reserved for economists with only an academia background that believe the economy can be managed like test tubes in a laboratory rather than trusting in the Invisible Hand made famous by Adam Smith.



We've heard numerous headlines recently that the Fed is losing its credibility. The overriding theme is that the tail is wagging the dog, in that the Fed does not want to cause a major disruption in the value of equities with a rate hike after holding rates

so low for so long. Listen to the presidential debates and you'll hear references to Janet Yellen, which is a bit unusual. I don't recall a prior debate where a candidate mentioned the Fed chairman (or chairwoman) by name, followed by a prediction that the market will collapse with just a slight upward move in interest rates.

It's really a question of Fed independence. They are tasked with a dual mandate of maximizing employment and targeting inflation (i.e. price stability). But they seem to be backed into a corner, because every time they mention a shift in monetary policy (or a path towards normalizing interest rates), capital markets tend to become highly volatile. There's no subsequent action, despite economic data that tends to support a hike in interest rates.

The Fed came under increased scrutiny in the wake of the 2008 crisis, when it decided to monetize the nation's debt through quantitative easing (the outright purchase of bonds to support zero interest rates). When this happened the Fed became increasingly dependent on political forces. All the actions the Fed has taken since the 2008 crisis are going to be difficult to unwind.

O: What are hedge funds hedging?



Based on the performance of the last 5 years the only thing that hedge funds have hedged are returns. It has been well documented that hedge funds have struggled to keep pace with the S&P 500 let alone Barclay's Aggregate Bond Index. Many investors in hedge funds

are obviously asking themselves the same question as evidenced by the significant outflows that hedge funds have experienced and the number of funds closing their doors.

Hedge funds were created to allow ultra-high net worth investors access to investment strategies intended to provide consistent returns with limited volatility. There are numerous categories of hedge funds all with very different objectives and strategies. What most hedge funds have been able to do consistently is remain relatively uncorrelated to broad stock market indices. Momentum-based hedge funds performed spectacularly well from 1990 through 2012 essentially eliminating the market drawdowns in 2000 and 2008. It remains to be seen if they will shine again during the next market downturn.



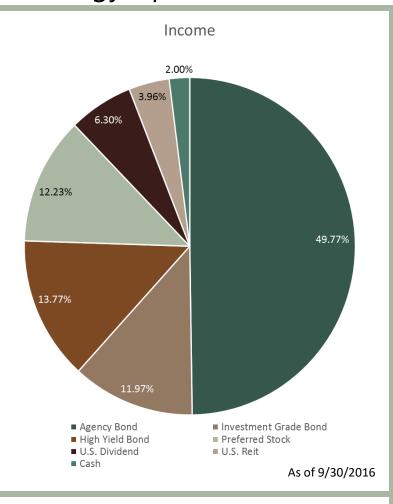


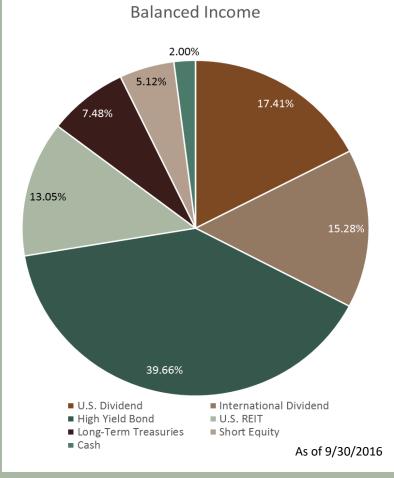
For the past several years, it seems like many hedge funds have been hedging capital gains, because the performance of these strategies, on average, haven't made much money. They've lagged far behind a simple investment in the S&P 500 (which

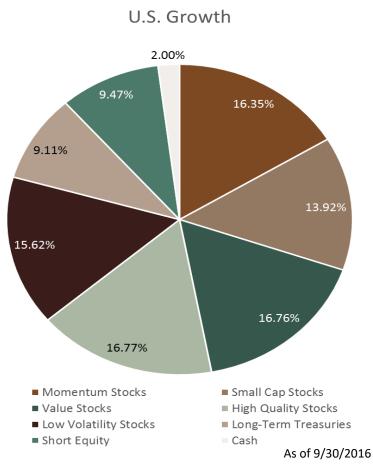
you can buy for just a few basis points). I think Warren Buffet won his \$1 million bet that the S&P 500 would outperform a hedge fund-of-fund portfolio. It's difficult for hedge funds to prove their worth in an environment where markets have been relatively calm for the past several years (i.e. there hasn't been much to hedge against).

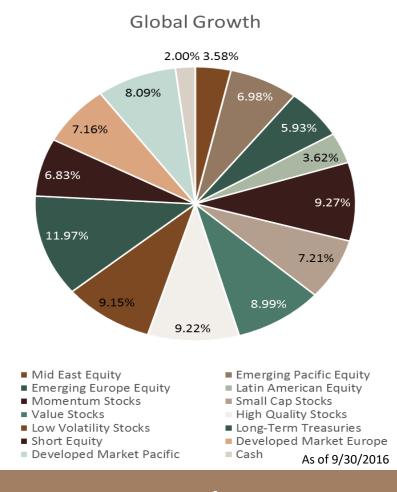
I think hedge funds are faced with multiple headwinds that didn't exist prior to the 2008 financial crisis. A compression in volatility and higher average correlations across asset classes has made trading strategies more difficult. Plus, central bank intervention in the global economy has made macro strategies difficult to implement (the actions of central bankers are hard to predict).

I'm not suggesting we abandon hedge funds altogether. It's been a while since we've had a major market dislocation, where the value of hedging strategies becomes more evident. But investors should really think if a hedge fund strategy is worth paying 2% annually for management fees, and handing over 20% of any profits. That's a tremendous hurdle.









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