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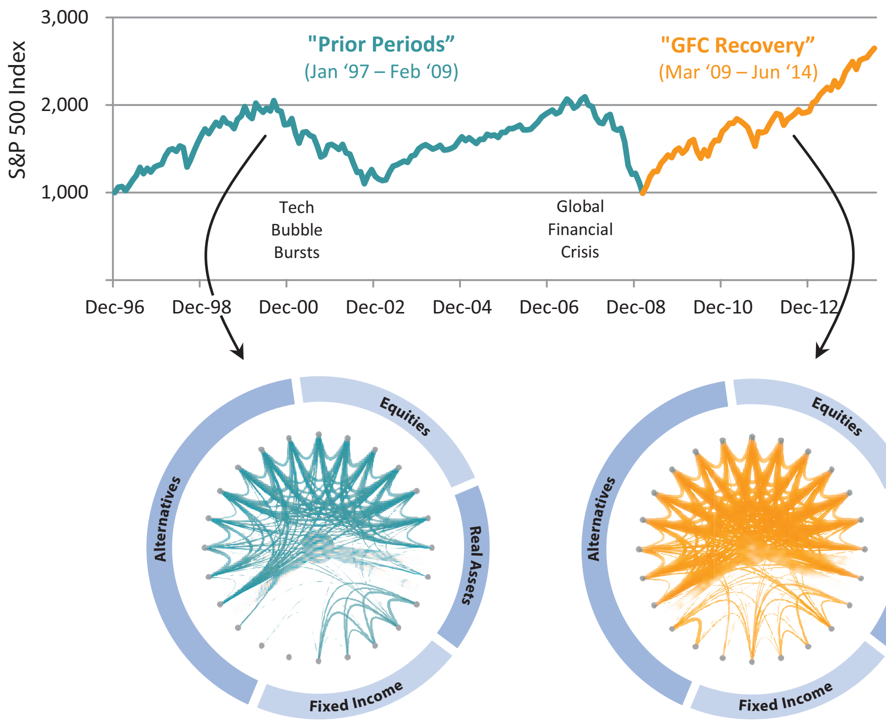
Diversification Revisited: What Changed During this Recovery?

The financial recovery since early 2009 has been a most welcome reprieve from the lowest depths of the Global Financial Collapse (GFC). To better understand this recovery, we peeked beneath this rising tide to examine the behavior of investible assets and to ask a few critical questions. Were assets more, or less, diversified during the recovery? Did relationships among investments change markedly? Are there any allocation lessons to be learned? Fortunately, we were able to revisit an earlier framework to approach these questions, a framework which visualizes the full web of relationships among a broad spectrum of investments.

The upper chart depicts the S&P 500 Index divided between the two periods compared in our analysis.

The lower visuals plot the correlation relationships between a broad variety of investment indices (with thicker lines indicating stronger correlations), revealing meaningful differences between each period.

Figure 1: Comparative Correlations between Investments during Two Periods



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How Did We Put Our Framework Together?

We began with a comprehensive asset class framework, like those used by pension consultants and wealth advisors. Drawing on the guidance of industry experts and our own research, we developed a four category model consisting of Equities, Real Assets, Fixed Income and Alternatives. We then populated the framework with 24 common indices to serve as benchmarks.

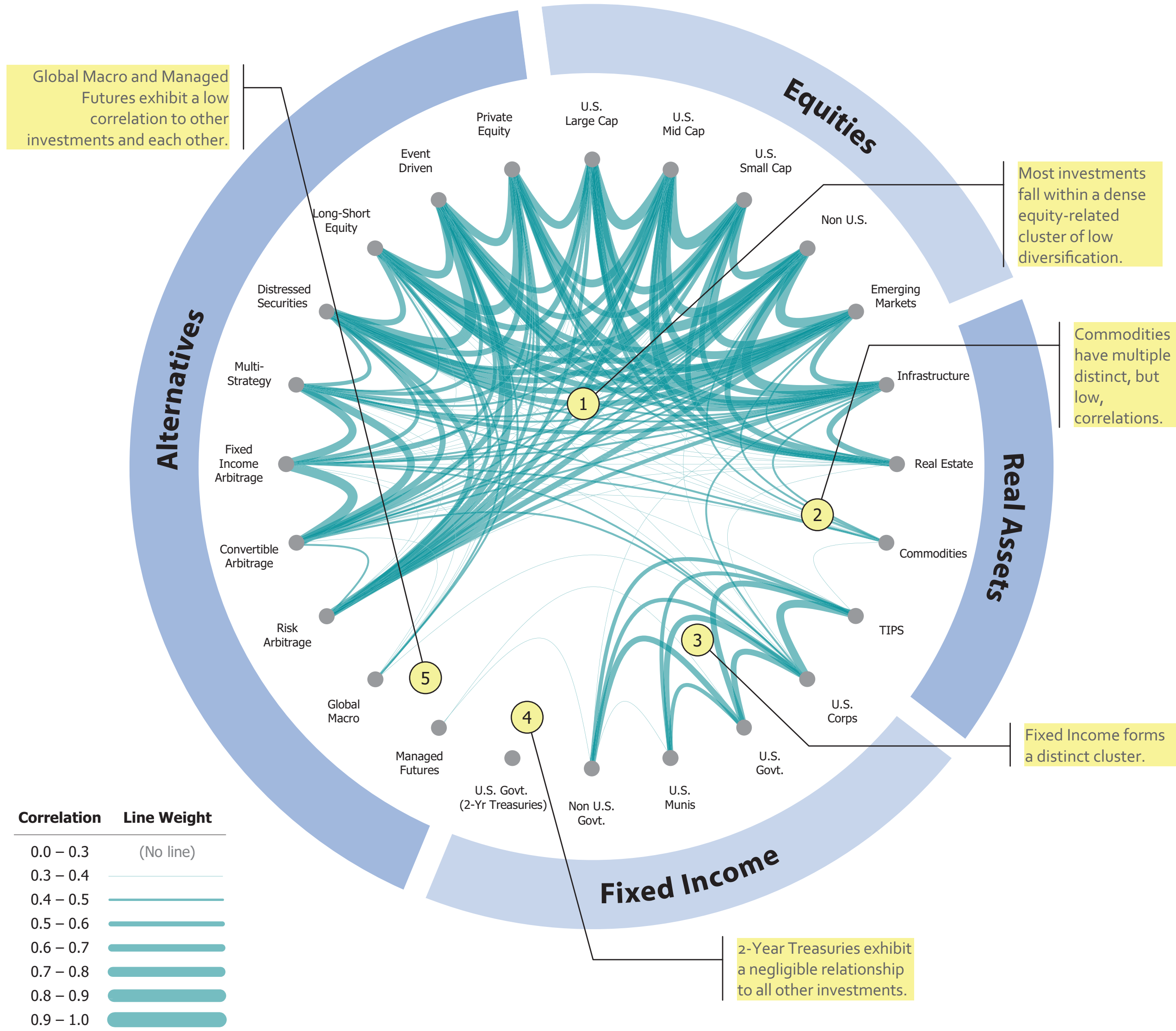
We extended our research period as far back as comparable data would allow. Although established indices like the S&P 500 date back to 1950, our analysis was confined to the shortest index record among our universe which bounded the lowest end of our analysis at January 1997. For comparison, we then isolated the most recent recovery period for the S&P 500 Index, i.e. "GFC Recovery," to help us determine if the nature of today's recovery is markedly different from longer term investible asset behaviors, a period we refer to as "Prior Periods."

Prior Period Correlations (1997 – Feb 2009)

Figure 2 reveals longer term relationships spanning two economic cycles over an 11-year period between 1997 until the beginning of the GFC recovery in early 2009. Noteworthy observations include:

1. Approximately 50% of all investment benchmarks examined tend to correlate highly with equities and each other. This includes approximately 2/3rds of Alternatives, and half of Real Asset benchmarks. This tendency can lead to surprises for those investors placing faith in asset class-based allocation methods expecting reliable diversification, a topic explored in an earlier Welton whitepaper, "Diversification: Often Discussed, but Frequently Misunderstood."
2. Commodities bear a meaningful relationship to a variety of equities and approximately half of Alternatives, but over longer term time periods these tend to be weak relationships.
3. As one would expect, Fixed Income investments tend to correlate strongly to each other and TIPS.
4. Also as one would expect, short term debt as modeled using U.S. Government 2-Year Treasuries bear little correlative relationship to any other investment, often functioning as a liquidity reservoir.
5. Global Macro and Managed Futures exhibit an exceptionally low correlation to other investments in general, and an immaterial relationship to each other. This is expected from their inherent multi-asset class coverage and long/short directional flexibility.

Figure 2: Prior Period Correlations
(Jan '97 – Feb '09)



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GFC Recovery Correlations (Mar 2009 – Jun 2014)

Figure 3 isolates more recent relationships since the GFC Recovery beginning in early 2009 over the last five years. The following observations are highlighted in **Figure 3** and **Figure 4** which overlays both periods for comparison.

6 The most striking difference between the Prior Periods and the GFC Recovery period is the strengthening of correlations between like-investments, as depicted by the increasing thickness and density of lines in the upper half of **Figure 3** versus those in **Figure 2**. While not depicted here, this style of convergence could also be shown during strongly negative periods, such as during the downward spiral of the GFC between late 2007 and early 2009. For many, that downward convergence signaled the need for investments with return sources diversified away from equity Beta.

7 Whereas Commodities previously exhibited a generally weak relationship to multiple assets over longer time periods, during the GFC Recovery their risk-on asset behaviors nudged Commodities' correlative traits to overlap into the realm of the equities cluster.

8 During Recovery a variety of generally unrelated investments exhibited a multitude of new, although weak, interrelationships as shown in region 8. Global Macro is one notable example, but so too are a variety of government and corporate fixed income investments.

9 Global Macro and Managed Futures previously showed a low correlation to other investments, and this trait continued during the GFC Recovery period. However, their relationship to each other strengthened more than just about any relationship during the GFC Recovery, likely due in our opinion to a growing overlap of sub-strategy utilization among this group.

Figure 3: GFC Recovery Correlations
(Mar '09 – Jun '14)

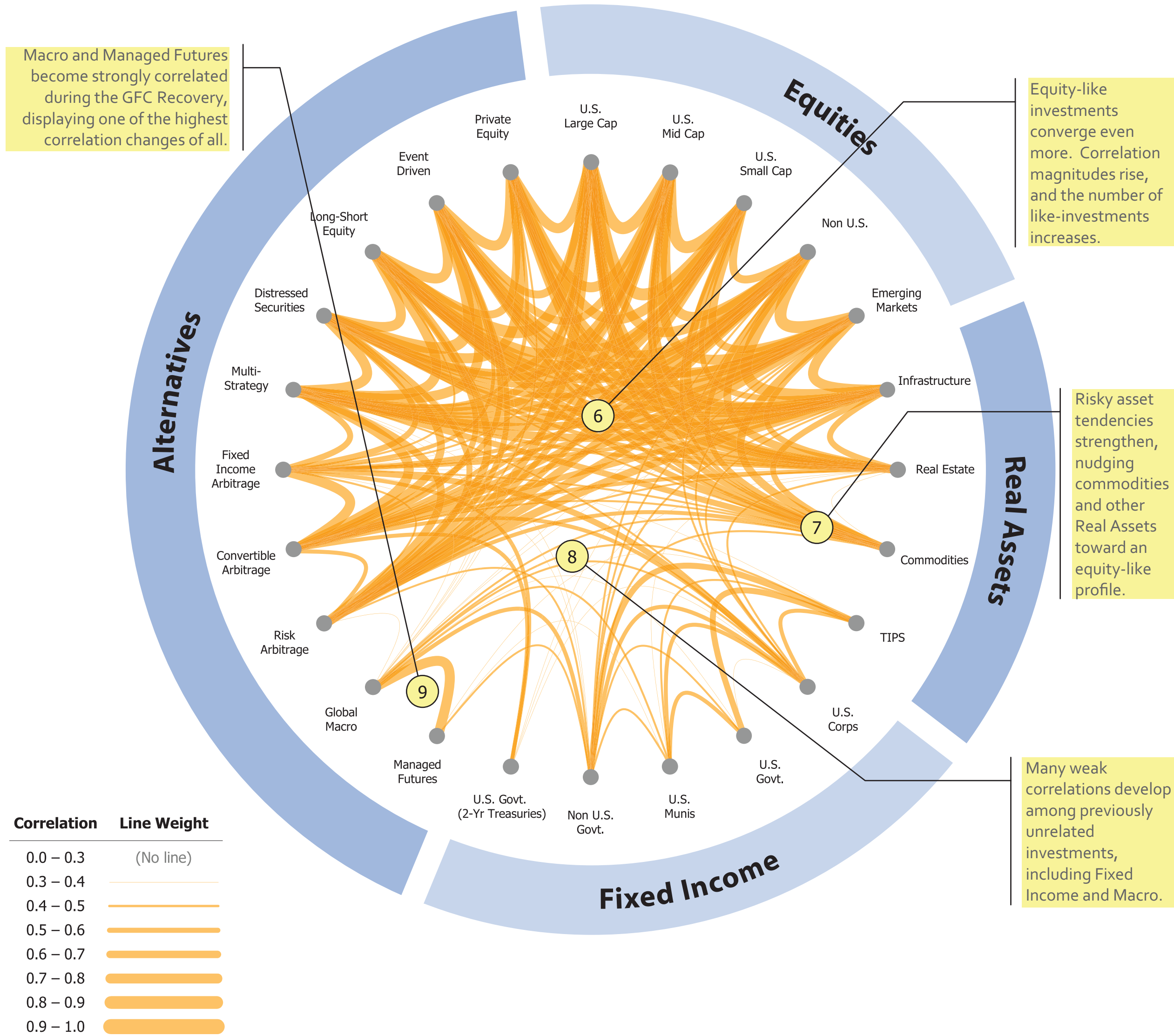

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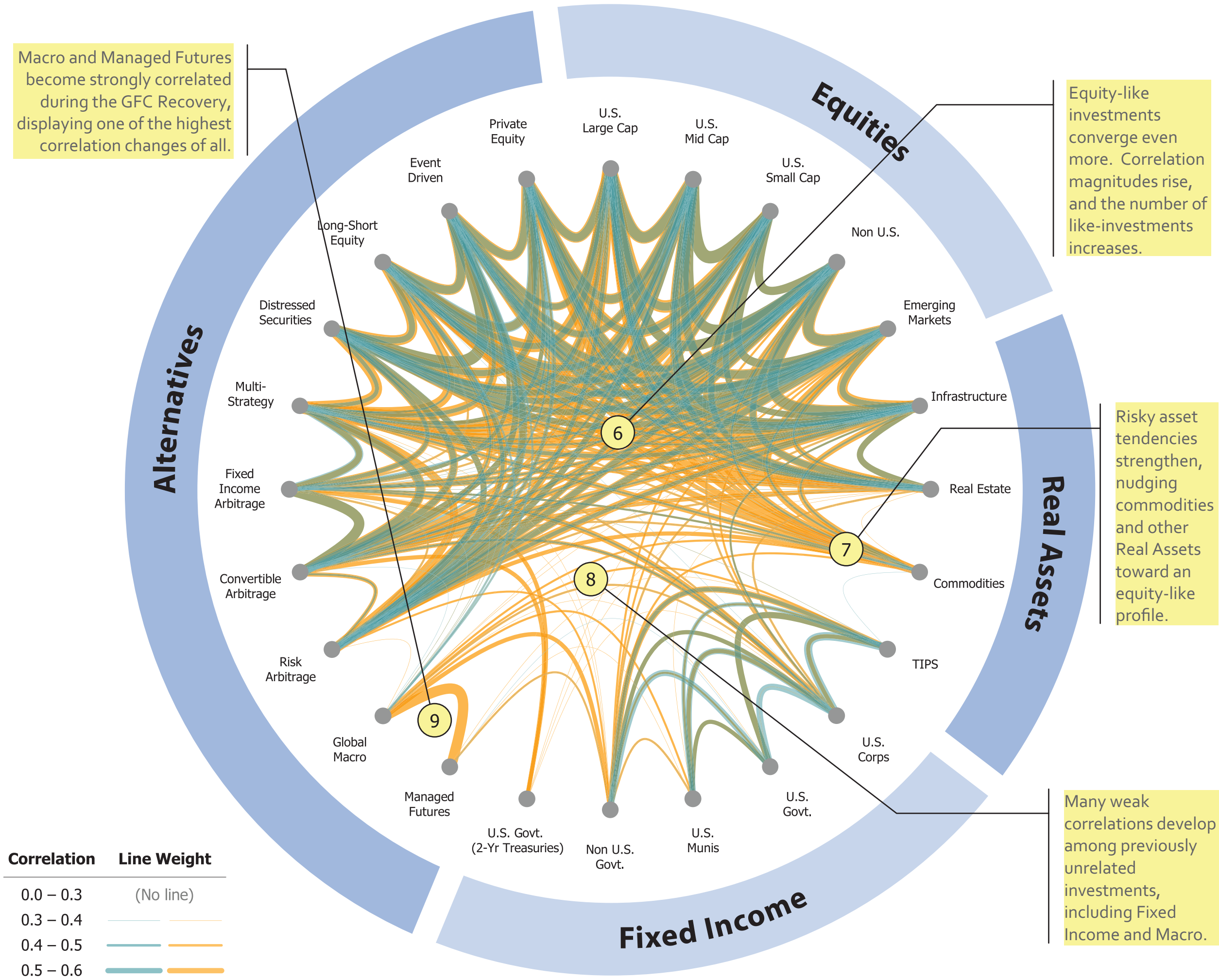
Figure 4: Prior Period Correlations vs. GFC Recovery Correlations
(Jan '97 – Feb '09) (Mar '09 – Jun '14)



Correlation	Line Weight
0.0 – 0.3	(No line)
0.3 – 0.4	
0.4 – 0.5	
0.5 – 0.6	
0.6 – 0.7	
0.7 – 0.8	
0.8 – 0.9	
0.9 – 1.0	

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Summary Observations

There have been many questions floated and myths promulgated concerning investment class behavior before and after the Global Financial Crisis. These views are often confounded by recent fluctuations of performance. Back to our critical questions: Were assets more or less diversified during the recovery? Did relationships among investments change markedly? Are there any allocation lessons to be learned? In summary, they were less diversified, and as has been true for decades, resilient diversification is hard to find.

Our comparison of correlations during Prior Periods versus the GFC Recovery provided a natural opportunity to identify points of difference, and we did. We identified that GFC Recovery correlations strengthened and converged among equity-like investments; Real Assets, notably commodities, took on more of an equity-like character; and previously isolated investments converged to form weak-to-moderate correlations with other investments.

Noteworthy too, however, are the similarities between the time periods. For example, some investors were probably surprised to see the high degree of cross-correlation among Alternatives, Real Assets and Equities – a result evident during *both* time periods examined. Specifically, about half of all 24 indices examined converged with Equities over our longer term analysis, and increased to two-thirds of all investments during the GFC Recovery period. And so, despite the appearance of a diversified portfolio universe, comprised of four distinct asset classes and 24 benchmark indices, a more enduring truism revealed by *both* analyses is that only a few clusters of diversification are at investors' disposal. Diversification sources are rare, and there are even fewer during discrete periods of the economic cycle such as during the GFC Recovery.

Among the allocation lessons to be learned is that asset class labels alone, such as "Alternatives," are an unreliable basis for constructing a diversified portfolio. Understanding the interrelationship among classes of investments over differing economic and business cycles is required, as is the conviction to employ portfolio exposures proportionate to the investor's framework for diversification.

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Endnotes

Welton's correlation analysis referenced was performed using monthly index data. Private Equity was analyzed on a quarterly basis due to unavailability of a monthly benchmark. Data sources included PerTrac and Bloomberg. Specific indices included the following:

Equities		
	U.S. Large Cap	S&P 500 Index
	U.S. Mid Cap	S&P Midcap 400 Index
	U.S. Small Cap	S&P Small Cap 600 Index
	Non U.S.	MSCI AC World Index Free ex USA Value
	Emerging Markets	MSCI EMF (Emerging Markets, Standard)
Real Assets		
	Infrastructure	S&P Global Infrastructure TR Index (12/01 – 6/14)
		UBS Global Infrastructure & Utilities 50-50 TR Index (1/99 – 11/01)
	Real Estate	FTSE EPRA/NAREIT U.S. Index
	Commodities	Dow Jones - UBS Commodity Index
	TIPS	Citigroup U.S. Inflation-Linked Securities Index
Fixed Income		
	U.S. Corps	Merrill Lynch Corporate Master Bond Index
	U.S. Govt	Barclays Government Bond Index
	U.S. Munis	Barclays Municipal Bond Index
	Non U.S. Govt	Citi World Government Bond Index
	U.S. Govt. (2-Yr Treasuries)	U.S. 2-Year Treasuries (TCMNOMY2)
Alternatives		
	Private Equity	Cambridge Associates LLC U.S. Private Equity Index
	Event Driven	Dow Jones Credit Suisse HFI Event Driven
	Long-Short Equity	Dow Jones Credit Suisse HFI Long-Short Equity
	Distressed Securities	Dow Jones Credit Suisse HFI Event Driven -Distressed
	Multi-Strategy	Dow Jones Credit Suisse HFI Multi-Strategy
	Fixed Income Arbitrage	Dow Jones Credit Suisse HFI Fixed Income Arbitrage
	Convertible Arbitrage	Dow Jones Credit Suisse HFI Convertible Arbitrage
	Risk Arbitrage	Dow Jones Credit Suisse HFI Event Driven - Risk Arbitrage
	Global Macro	Dow Jones Credit Suisse HFI Global Macro
	Managed Futures	Dow Jones Credit Suisse HFI Managed Futures

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