

# Finding the Culprit in Risk Parity Performance in the First Three Quarters of 2013

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The first three quarters of 2013 have been difficult for risk parity strategies. In particular, May and June were months of significant drawdown. Risk parity is a relatively new concept and as common to new strategies has significant critics. Recent performance, in particular May and June, has been touted as the “end of risk parity” and has led to an “I told you so” moment for its critics who see risk parity as primarily a strategy that “leverages bonds”.

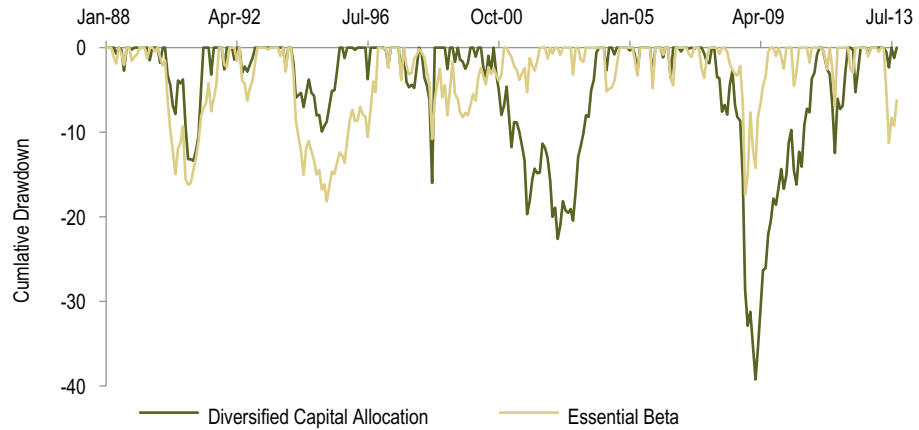
In the case of Essential Beta (EB), the drawdown occurred despite the fact that we were not “leveraged bonds”. That fact alone should give us all pause. If “leveraged bonds” were not the problem, then what was the cause of the drawdown? The explanation gives us not only the reason for the drawdown, but why it will be short-lived and why risk parity strategies have lagged this year.

In the end we will see that the more diversified the portfolio, the worse it performed in the first three quarters of 2013. The May and June downdrafts were due to a short-term increase in correlations which caused all three asset classes to decline at the same time. However, the cumulative performance in the first three quarters was due to a lack of breadth in all three markets. 2013 is a year where it paid to have your risk concentrated in a few assets. Since Essential Beta and other risk parity funds are predicated on diversification, the result was negative performance. For the future we continue to believe that diversification is the best long-term investment strategy.

## Historical Perspective

To understand the present it is often useful to look at the past. Was this drawdown significant and unprecedented, making it a sign that there are “hidden dangers” in the risk parity approach? For EB the answer to the latter is definitely “no” though the answer to the former is “yes.” Illustration 1 below shows cumulative drawdowns and recoveries for Essential Beta back to 1988. For comparison we have also shown a “Diversified Capital Allocation” (DCA) portfolio which has fixed weights of 28% MSCI World (local currency), 11% Russell 2000, 11% MSCI Emerging Market Equity Index, 5% FTSE NAREIT All REIT Index, 10% S&P GSCI, 5% BofA ML High Yield Master, 26% Citigroup WGBI (local currency) and 4% US Inflation-Linked Treasury Total Return Index. The DCA portfolio represents a standard global multi-asset portfolio and is similar to many “diversified” plans. We find DCA more representative of an alternative portfolio to EB than the traditional 60% stocks and 40% bond portfolio since it is seen as well diversified despite its 92% correlation with the MSCI World Equity Index. The total risk level of EB, DCA and the 60/40 portfolio is approximately equal, in the 9% - 10% annual range.

**ILLUSTRATION 1: EB VS DCA**  
 Drawdown Analysis (January 1988 - July 2013)



Sources: First Quadrant, L.P., Bloomberg LP

The 2013 drawdown was among the worst of the last 24.5 years for EB. It is one of five such drawdowns that have occurred in the past. The drawdown was smaller than 2008, 1994 and 1990 and about the same as 1999. We also note that while DCA did not have a significant drawdown this year, it has experienced significant drawdowns over its history such as, 2011, 2008, 2000 – 2002, 1994 and 1990. So what can we learn from these other drawdowns? Are they in some way similar to 2013?

To examine this we first took EB returns simulated from 1/88-9/13 (309 observations) and sorted the returns from lowest to highest. We found that all three asset classes (stocks, bonds and commodities) were down together in many of the worst months. The probability that the three asset classes would be down at the same time if they are uncorrelated is  $0.50^3=12.45\%$ . This is the same probability as flipping three coins and getting three heads or three tails. So there is a 12.45% probability of having the three asset classes being down or up together. In the simulation 7.4% of the returns had the three asset classes down together, and 20.0% of the time the three asset classes were up. So, the probability of the three asset classes being down is lower than a random process, but the chances of the three asset classes being positive is higher than random. This is due to the fact that the correlations are not equal to zero. In addition,

the MRI weightings of EB tend to favor the best-performing asset. Below is a table of the assets when EB returns are -1 standard deviation or more:

**TABLE 1: EB MONTHLY RETURNS < -1 STANDARD DEVIATION (-2.6%)**

Attribution by Asset Class - EB Simulation<sup>1</sup>

Month	Stocks	Bonds	Commodities
Jan-90	-1.5	-3.2	0.0
Feb-90	-0.5	-3.0	-0.2
Mar-90	-1.0	-1.1	-0.7
Apr-90	-0.3	-2.1	-0.7
Aug-90	-3.8	-3.6	0.6
Jun-91	-2.0	-0.8	-0.7
Jun-92	-4.9	0.5	0.5
Nov-93	-1.5	-0.5	-0.9
Feb-94	-0.9	-2.2	-0.1
Mar-94	-2.1	-3.7	0.2
Jun-94	-1.8	-1.3	0.0
Jan-95	-3.2	0.5	0.0
Aug-97	-2.5	-1.1	-0.2
Aug-98	-6.4	0.4	-0.8
Dec-98	-2.7	-0.6	-0.1
Feb-99	-0.8	-2.7	-0.2
May-99	-0.7	-1.9	-1.3
Sep-09	-2.5	0.4	-0.9
Mar-03	-0.3	-1.4	-1.5
Apr-04	-2.2	-2.0	-0.9



Month	Stocks	Bonds	Commodities
Oct-05	-2.4	-1.2	-1.2
May-06	-4.5	-0.2	1.1
Sep-08	-2.6	-1.1	-1.1
Oct-08	-6.0	-1.4	-4.0
Jan-09	-1.3	-3.0	-0.3
Feb-09	-2.1	-0.5	0.0
May-10	-2.9	1.1	-2.7
Sep-11	-3.2	1.5	-2.9
May-13	-1.5	-3.1	-0.5
Jun-13	-2.0	-3.0	-1.5

Table 1 is sorted chronologically so we can examine whether there were any runs of negative returns. We find that there were four. The longest was in 1990 at four months while the others were combinations of two months. Each of these groups corresponds to a significant drawdown period in Illustration 1. We also find that 74% of the -1 standard deviation down months occurs when all three asset classes are down.

Table 1 corresponds to the simulated data back to 1988. How about the live performance since March 2009 (55 months)? In this shorter period there were only 4 months where returns were greater than -1 Standard Deviation. But the percentage of months where all three asset classes were down was 5.5% and the percentage that all three asset classes were positive was 21.8%. Given the shorter sample size, this is approximately equal to the statistics found for the larger sample. The probability of finding three up or three down months remains 12.45% so the live track record follows the same pattern as the simulated data of a lower probability of three down than random, and a higher probability of three up.

We can also look at EB through the lens of the risk-balancing dimension. EB balances risk across three dimensions: (1) Basic Risk Parity (balancing risk across asset classes), (2) Within Markets (risk balancing by country and sector), and (3) Through Time (where EB adjusts the capital allocation as risk changes over the market cycle). Table 2 shows the same monthly returns as Table 1 but now attributes the returns by risk dimension.

**TABLE 2: EB MONTHLY RETURNS < -1 STANDARD DEVIATION (-2.6%)**

Attribution by Risk Balancing Dimension - EB Simulation<sup>1</sup>

Month	Basic RP	Within Markets	Through Time
Jan-90	-5.9	0.9	0.4
Feb-90	-3.8	0.4	-0.3
Mar-90	-3.1	-0.1	0.3
Apr-90	-3.2	0.4	-0.3
Aug-90	-4.9	-3.5	1.6
Jun-91	-3.8	0.3	0.0
Jun-92	-1.4	-1.2	-1.3
Nov-93	-3.3	0.6	-0.2
Feb-94	-4.7	0.8	0.7
Mar-94	-4.6	-1.0	0.0
Jun-94	-2.5	-0.7	0.1
Jan-95	-0.5	-1.3	-0.9
Aug-97	-3.8	-0.5	0.5
Aug-98	-4.8	-6.8	4.8
Dec-98	-0.2	-5.2	1.9
Feb-99	-4.2	0.5	-0.1
May-99	-3.9	-0.1	0.2
Sep-01	-5.2	0.1	2.1
Mar-03	-3.1	0.1	-0.2
Apr-04	-1.7	-3.7	0.2
Oct-05	-4.3	-0.1	-0.4
May-06	-2.6	0.2	-1.2
Sep-08	-6.3	-0.3	1.9
Oct-08	-10.9	-5.4	4.9
Jan-09	-6.6	2.4	-0.4
Feb-09	-4.2	0.2	1.4
May-10	1.1	-5.2	-0.5
Sep-11	0.9	-8.6	3.1
May-13	-2.0	-3.5	0.4
Jun-13	-3.2	-3.5	0.2

The percentage of time that all three risk-balancing dimensions are down or up together are even lower than the three asset classes at 2.2% and 18.4% respectively. However, 83% of the returns in Table 2 have at least two of the three dimensions being negative. In total, 35.7% of the observations have at least two dimensions being negative. This is still lower than a random process since using combination probabilities,

the chances of 2 or more of three random objects being the same equals 50%. However, most of our empirical observations occur when the total excess return is -1 standard deviation or more.

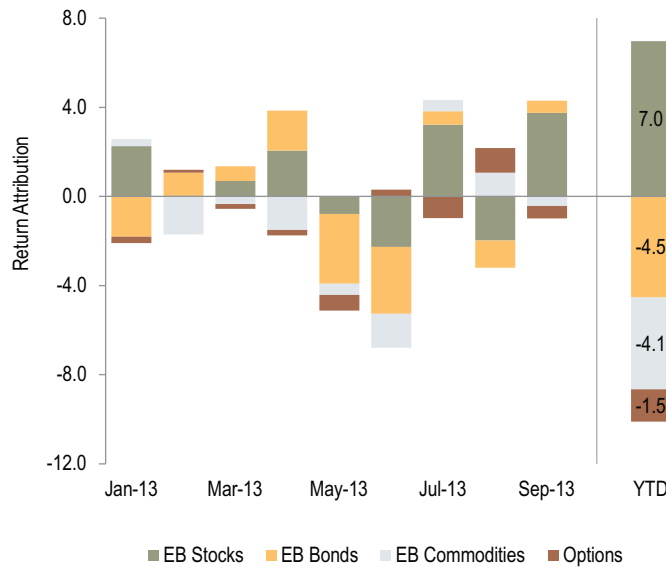
So what do Tables 1 and 2 tell us about Essential Beta's worst drawdowns? They tend to occur when the three asset classes decline together, and/or if two or more of the risk dimensions are negative. These events have occurred in the simulation at a lower rate than random showing that they are indeed rare events, though they do happen. However, there is no reason to believe that these periods of higher correlation across assets or risk dimensions is anything but random since they occur with even lower probability than a random process would.

### 2013 Analysis: Asset Classes

So what do we see in 2013? Illustration 2 shows attribution by asset class for the first nine months of 2013.

date standpoint, bonds and commodities have both contributed equally to the year-to-date negative returns (through September 2013), so there were factors other than bonds involved in the drawdown. In fact EB had a capital allocation of 70% to bonds. So it was not "leveraged bonds" which were the culprit. As in Table 1, it was a temporary increase in correlation across the asset classes which account for the May and June drawdown. We can also see from Table 1 and Illustration 1 that these are rare events. And we can even postulate that they are random events. As we have written in our monthly commentary, the decline in May and June was due to two separate pieces of bad news hitting the markets simultaneously. Clearly the guidance by the US Fed that it may start tapering its stimulative program of bond buying hurt the bond market. While equities and commodities were somewhat affected by the Fed guidance, the real negative news for stocks and commodities was the

**ILLUSTRATION 2: 2013 RETURN ATTRIBUTION BY ASSET CLASS**  
EB Simulation<sup>1</sup>



Sources: First Quadrant, L.P., StyleAdvisor, Bloomberg LP

We can see that while bonds were a significant contributor to the losses in May and June, all three asset classes were down, just as we saw in Table 1 for the longer history. From a year-to-

Chinese credit crunch and weak economic news in the US and China. We can see this in the large July and September recoveries in equities and the July and August recovery in commodities.

Bonds were largely flat in the third quarter.

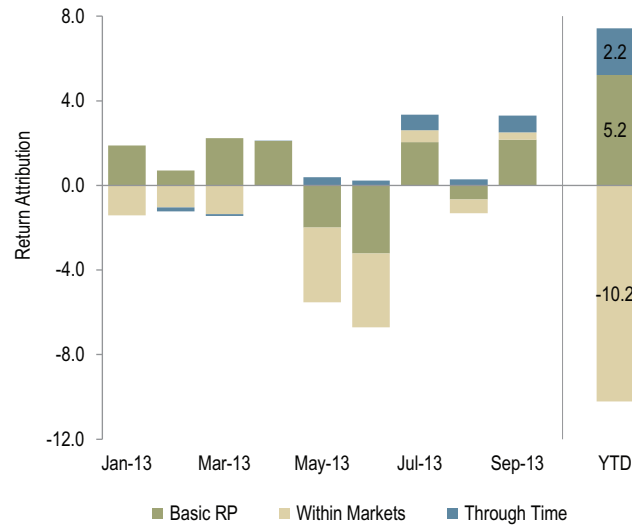
This is similar to flipping three coins. The probability of three tails is very low, but they still happen. In the case of Essential Beta, three tails has an even lower probability than random, but it still does happen since the probability is not zero.

### 2013 Analysis: Risk Dimension

We can gain further insight by looking at the portfolio through the three risk-balancing dimensions. Illustration 3 gives a monthly attribution of EB through September of 2013:

Basic Risk Parity attribution is a risk allocation of 42.5% MSCI World Equity Index (MSCI), 42.5% Citi World Government Bond Index (WGBI), and 15% Dow Jones-UBS commodity index. Both the WGBI and MSCI are in local currency and the bonds are always leveraged to balance the risk of equities. In Illustration 3 we can see that while Basic Risk Parity was down in May and June the levels were hardly catastrophic. In addition, on a year-to-date basis Basic Risk Parity is up +5.2%. So the notion that “risk parity” is down is incorrect. But risk parity funds are down year-to-date as a group. Where is the disconnect?

**ILLUSTRATION 3: 2013 YTD RETURN ATTRIBUTION BY RISK DIMENSION**  
EB Simulation<sup>1</sup>



Sources: First Quadrant, L.P., StyleAdvisor, Bloomberg LP

We can see that as in the longer simulation, the May and June drawdowns occur when two of the three risk dimensions are negative. However, the year-to-date returns show that the negative return can be fully attributed to the “within market” dimension. This requires further analysis.

The critics of risk parity have said that risk parity “failed” this year because of leveraged bonds. When most critics refer to “risk parity” they are really talking about something similar to Basic Risk Parity as we have defined it here. The

We can see that the negative returns year-to-date and in five of the nine months come from the “Within Market” dimension. This means that the risk balanced equity, bond and commodity portfolios are underperforming their capitalization-weighted equivalents. In Table 3 below, we can see that is indeed true. We have listed the year-to-date returns of the indices used in Basic Risk Parity listed above and the Within Markets components in Essential Beta from 1/13 – 9/13:

**TABLE 3**

EQUITIES						
	MSCI Wrld	Developed Markets	Small Cap	Emerging Markets	REITS	EB Stocks
YTD	19.1	15.6	29.6	-12.6	6.9	11.3
BONDS						
	WGBI	Developed Markets	Inflation Linked	High Yield		EB Bonds
YTD	-0.3	-5.0	-8.7	0.0		-5.7
COMMODITIES						
	DJ UBS	Energy	Industrial Metals	Agriculture	Precious Metals	EB Commodities
YTD	-7.9	3.8	-12.6	-8.9	-22.3	-20.0

The Within Market dimension of EB is based upon the concept that risk diversification within asset classes produces better long-run returns than the broad indices where risk is more concentrated. The MSCI and the WGBI have a heavy weight in the US and a few large countries while the DJ UBS Index is heavily weighted towards energy (See “Balancing Betas” (February 2009) and “Balanced Risk Commodities” (October 2010) for a complete analysis). Through September 2013 the US has dominated the MSCI world and the WGBI while energy has been the only positive-returning commodity sector due to geopolitical concerns in the Middle East. So the strategic equal risk allocation that is at the heart of EB has so far in 2013 been a drag on performance. We have often stated that lack of breadth would also be a negative for Essential Beta, and in 2013 we find that it is really the reason for negative performance. So it is not the risk parity approach of leveraging bonds to balance risk with equities which is the reason for Essential Beta’s negative performance through September. It is the lack of breadth in the market itself. This is very important because many have said that risk parity would underperform due to a bear market in bonds and there may be a simplistic view that “leveraged bonds” has caused the disappointing performance through the first three quarters. However, EB is not leveraged bonds. The problem is market breadth. So only if we expect market returns to be narrow should we be concerned with EB returns going forward.

In the end, the analysis shows that the performance in the first three quarters is down because diversification has not paid off and the “Within Markets” component of risk balancing has underperformed.

### Looking Forward

Is the increase in asset correlation part of a long-term trend? Will breadth continue to narrow going forward? We are confident the answer is “no” to both questions.

First, the three major asset classes are chosen in multi-asset portfolios because of their long term, low correlation to one another. This diversifying effect is enhanced under risk allocation, though that can also amplify temporary increases in correlation. Long-term significant positive correlation between stocks and bonds, in particular, only occurs under specific circumstances, none of which are occurring now.

First, we should note (“Does Your Portfolio Have ‘Bad Breadth’ (December 2008)) that stock/bond correlations usually shift from negative in a high volatility environment to positive in a low volatility, expansionary environment. Currently we are in such an environment, and the correlation is a modest positive of about +20%. Many commentators have reported the recent rise in stock/bond correlations as if it were a new event, yet it is a characteristic common to equity advances and economic expansions. We noted



this phenomenon back in 2008 and incorporated it within the EB process.

Second, a prolonged increase in stock/bond correlations is tied to long-term structural developments. There are two basic scenarios where stock/bond correlations become significantly positive for extended periods. Both are unlikely at this time: (1) a developed market sovereign credit crisis; or (2) hyperinflation.

When sovereign bond ratings are stressed they have no “flight to quality” or equity tail-risk hedging properties. As a result, the correlation of bonds to equities rises and equity-like volatility becomes the norm for intermediate government bonds. We see that in emerging markets on a continual basis, and we have seen it recently in Europe with Greece, Italy and Spain. However, there is little likelihood that such an event would happen in the developed sovereign bond markets typically used by risk parity managers now or in the near future.

The second possibility, hyperinflation, also has a low probability, though it is higher than a sovereign credit crisis. In this case, bonds decline as inflation rises and bond volatility rises to equity-like levels. Additionally correlation with equities becomes strongly positive. In short, the stock/bond relationship becomes similar to a sovereign credit crisis. The central banks raise interest rates to induce a recession, the only known cure for hyperinflation. The recession causes equities and commodities to decline. There is no safe haven except perhaps cash.

The underlying cause of both scenarios is different but the net result is the same: (1) stock/bond correlations increase to high levels (about 70%); (2) intermediate sovereign bond volatility goes up to equity like levels of about 15%; and (3) both scenarios have negative economic consequences resulting in the decline of all three asset classes. The EB process handles these events by changing the covariance structure and eliminates leverage in the portfolio.

Looking forward, neither scenario is likely. Therefore, we expect that the increased correlation and lack of market breadth will return to “normal” levels and there are signs that this reversion is

already under way.

We do expect that bonds will be challenged in the future. In the current environment our risk allocation to sovereign bonds is at 12.5%, so if or when the real bond bear market begins, Essential Beta will not have significant bond risk exposure or exposure to real rate risk.

As to the “breadth” issue, as the economic expansion continues, breadth will broaden out. There is some evidence that the markets have already done so. In Q3, the Within Markets dimension added value and continues to do so into Q4.

## Summary

2013 has been a difficult year for risk parity in general and Essential Beta in particular. Because critics of risk parity have been emphasizing the risk of “leveraged bonds” and bonds have indeed been down this year, many have come to a simplistic conclusion that risk parity strategies are down due to the decline in bonds. But in this article we have shown that while bonds have been a contributor, the lack of breadth in stocks, bonds and commodities is equally responsible for the negative performance.

This analysis also explains why risk parity strategies have quick recoveries. Drawdowns are typically caused by random increases in correlations and/or lack of breadth in the underlying sectors. There is no reason to believe that the recent experience is part of a long-term trend. In essence the fact that EB has recovered much of the Q2 drawdown in Q3 and into Q4 gives us confidence that risk allocation rather than capital allocation is still a more efficient asset allocation methodology than capital allocation.

## References

FQ Perspectives:

“Does Your Portfolio Have Bad Breadth?” December 2008

“Balancing Betas-Essential Risk Diversification” February 2009

“Balanced Risk Commodities” October 2010





**Essential Beta – Simulated Performance (Gross and or Net of Fees)** Unless otherwise noted, performance figures do not reflect the deduction of investment advisory fees. These fees are described below. The returns shown will be reduced by the advisory fees and any other expenses the advisor may incur in the management of an investment advisory account. Simulated performance is no guarantee of the future results in a live portfolio using the strategy. Potential for profit is accompanied by possibility of loss. General Disclosures: Hypothetical or simulated performance results have certain inherent limitations. Unlike an actual performance record, simulated results do not represent actual trading. Also, since the trades have not actually been executed, the results may have under or over compensated for the impact, if any, of certain market factors, such as lack of liquidity or positions need to be rounded based upon contract size when futures trades are being executed. Simulated trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. Simulations are constructed on the basis of historical data and based on assumptions integral to the model. No representation is being made that any account will or is likely to achieve profits or losses similar to those shown. Unless otherwise noted, performance returns for one year or longer are annualized. Performance returns for periods of less than one year are for the period reported. The simulated performance in this presentation will differ from live performance that would have been experienced using the strategy during that time period for the following reasons: • The simulated performance uses FQ's proprietary models since inception date, reflecting the model changes as they occur. • The simulated performance includes the use of TIPS throughout its history; however they were not available until 1997. A live portfolio managed before 1997 would not have included TIPS. • The simulation assumes that we adjust the risk and capital allocated to each sub-strategy on a monthly basis after the close on the last day of each month, whereas the live product may not adjust the allocations exactly at that time due to intra-month market movement and risk regime shifts. • The simulation assumes that the strategy and sub-strategy guidelines are constant through the life of the portfolio, whereas, the guidelines for live portfolios may have changed over the life of each portfolio. • The simulation assumes fixed transaction costs whereas live portfolio transaction costs will be variable. • The simulation uses a synthetic long duration zero coupon bond for each bond country allocation. The cash return for the synthetic bond can vary by broker. • The simulation assumes all trading takes place once a month (on the last day of the month) whereas live portfolios may trade often during the month. Disclosures Specific to Simulation: This simulation was created in November of 2008 and updated every month end or quarter end. The simulation is constructed with the goal to diversify risk in a portfolio by strategically allocating risk to several sub-strategies/asset classes including, without limitation: Developed Market Equities; US Small Cap Equities; Emerging Market Equities; Real Estate Investment Trusts ("REITS"); Diversified Commodities; US Treasury Inflation-Protected Securities ("US TIPS"), and Long Duration Zero Coupon Synthetic Bonds ("Synthetic Treasuries"). High yield was incorporated into the simulation starting April of 2011. The simulation replicates the hypothetical return of TIPS between 1988 and 1996 through the combination of ten year interest rates and the 12 month trailing CPI. From 1997 onward actual TIPS returns were used. The simulation assumes Synthetic Treasuries are created by using futures on various developed country sovereign bonds. The simulation additionally attempts to balance risk relative to country and sector weightings. The simulation targets overall portfolio risk allocations based on pre-determined indicators of market risk which may change over time. All income is reinvested monthly, no external cash flows are assumed. **Investment Management Fees:** All simulated performance results presented are net of fees, and does not include trading costs. The FQ investment management asset-based fee schedule for this strategy, which is negotiable, is as follows: \$0-\$100, 0.50%; \$100-\$350, 0.30%; and more than \$350, 0.15%. Asset-based fees are charged incrementally. For example, a \$200 million dollar portfolio will be charged .50% for the first \$100 million, 0.30% for the next \$100 million. **Market Impact on Returns:** Stocks, bonds, and commodities markets had exceptional performance from 2009-2012. The Essential Beta Strategy participated in these returns throughout the period by holding long positions within all three markets.

Essential Beta Strategy	Total Return Gross	Total Return Net	Composite 3-Year Standard Deviation Gross (Annualized)	Benchmark 3-Year Standard Deviation (Annualized)	Number of Portfolios <sup>4</sup>	Composite Dispersion (%)	Total Composite Assets <sup>3,4</sup> (Millions USD)	% of Firm Assets <sup>4</sup>	Total Firm Assets <sup>4</sup> (Millions USD)	Total Essential Beta Strategy Assets <sup>1,4,5</sup> (Millions USD)	Total Firm AUM (Including National Values) <sup>1,4,5</sup> (Millions USD)
2009 (Mar-Dec)	+23.9%	+23.3%	-	-	<5	-	6	0.1	7,867	89	17,342
2010	+18.1%	+17.8%	-	-	<5	-	277	3.2	8,558	380	18,713
2011	+8.9%	+8.7%	-	-	<5	-	514	6.5	7,967	619	16,725
2012	+8.1%	+7.9%	7.7%	-	<5	-	565	7.2	7,891	1,222	17,104
2013 (Jan-Oct) <sup>2</sup>	-0.0%	-0.2%	9.0%	-	<5	-	563	6.0	9,369	1,886	16,997

See additional disclosures for important information concerning this composite and the effect of fees. <sup>1</sup>Supplemental Information. <sup>2</sup>All Performance and AUM data is preliminary. <sup>3</sup>Includes market values for fully funded portfolios and the notional values for margin funded portfolios, all actively managed by First Quadrant. <sup>4</sup>At End of Period Reported. <sup>5</sup>Includes market values for fully funded portfolios and the notional values for margin funded portfolios, including both active mandates and those with both active and passive components, all managed by First Quadrant and non-discretionary portfolios managed by joint venture partners using First Quadrant, L.P. investment signals. First Quadrant is defined in this context as the combination of all discretionary portfolios of First Quadrant, L.P. and its joint venture partners, but only wherein FQ has full investment discretion over the portfolios. <sup>6</sup>Includes other Essential Beta composite assets, including those based in foreign currencies.

**Essential Beta Strategy** Past performance is no guarantee of future results. Potential for profit is accompanied by possibility of loss. **GENERAL DISCLOSURES:** First Quadrant, L.P. claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. First Quadrant, L.P. has been independently verified for the period 1995-2013. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Essential Beta Strategy composite has been examined for 2010. The verification and performance examination reports are available upon request. First Quadrant ("FQ" or the "Firm") is defined as the combination of all discretionary portfolios of First Quadrant, L.P. and its joint venture partners, but only wherein FQ has full investment discretion over the portfolios. First Quadrant L.P. is a registered investment adviser and is an affiliate of Affiliated Managers Group, Inc. A complete list and description of the Firm's composites is available upon request. **COMPOSITE DETAILS:** Composite Description: (Creation Date: March 2010) The portfolios in this composite invest in the Essential Beta strategy targeting an 8-10% tracking error. The strategy seeks to provide long-term market returns through exposure to essential markets in order to participate in global economic growth. The strategy includes exposure to global equity, global sovereign bonds, and commodities primarily through futures contracts, and may also use Exchange Traded Funds (ETFs) and physical securities when liquid futures contracts are not available or are illiquid. The strategy will also include exposure to commodities and Treasury Inflation Protected Securities (TIPS) to hedge against inflation. Portfolios in the composite have a target risk level of between 8% and 10%, which is balanced among the asset classes. This is a total return strategy which is not managed against any benchmark or universe. Presenting the composite returns with no benchmark demonstrates clearer accountability by removing the distortions caused by blending strategy specific total and benchmark returns. Portfolio Criteria: There is no minimum balance requirement for a portfolio to be included in a composite. The strategy utilizes leverage at FQ's discretion. The returns presented reflect this leverage. **Calculation Methodology:** Valuations and returns are computed and stated in U.S. dollars. One portfolio within the composite (March 2009 through March 2010) used the daily valuation method to calculate the time-weighted monthly portfolio return while the other portfolio (February 2010 to present) uses a time-weighted rate of return formula to calculate the monthly return. Annual portfolio returns are calculated by linking the monthly returns. The dispersion of a composite is calculated using the asset-weighted standard deviation formula. Only portfolios managed for the full calendar year are included in the dispersion calculation. Where a composite contains five or fewer portfolios, a measure of dispersion is not statistically representative and is therefore not shown. The three-year annualized standard deviation measures the variability of the composite and the benchmark returns (if applicable) over the preceding 36-month period. The standard deviation is not presented for periods in which 36 months of historical composite returns are not available. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request. **Derivatives:** The underlying investment process composing this composite uses derivative instruments in both long and short positions to achieve desired returns. Derivatives are financial instruments whose value is derived from another security, an index or a currency. Futures contracts are derivatives that specify a purchase or sale of an asset at a specified price on a specified date in the future. Forward contracts are derivatives that allow the purchase or sale of currency in the future at a currently agreed-upon rate of exchange. There is a risk that a derivative may not perform as expected, thereby causing a loss or amplifying a gain or loss for a portfolio. With some derivatives there is also the risk that the counterparty may fail to honor its contract terms causing a loss for a portfolio. **Investment Management Fees:** Performance results presented net of investment management fees are based upon actual portfolio investment management fees charged to each portfolio within the composite. These net of fee results also reflect the effect of any negotiated fee arrangements, which are different than FQ's fee schedule. All performance results presented include trading commissions. The FQ investment management asset-based fee schedule for this strategy, which is negotiable, is as follows: \$0-\$100, 0.40%; \$100-\$350, 0.35%; and more than \$350, 0.20%. Asset-based fees are charged incrementally. For example, a \$200 million dollar portfolio will be charged 0.40% for the first \$100 million, and 0.35% for the next \$100 million. **Market Impact on Returns:** Stocks, bonds, and commodities markets had exceptional performance from 2009-2012. The Essential Beta Strategy participated in these returns throughout the period by holding long positions within all three markets.

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