

Risk and Uncertainty in a Low Return Environment

FQ Perspective



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A number of market pundits have recently stated beliefs that we are entering an extended period of lower-than-average returns across assets. The reasons for this vary, but are generally tied to persistent sluggish growth, low inflation, low interest rates and large overhanging debt levels. Usually, this outlook is accompanied by investment recommendations under such market conditions. However, the risk environment that accompanies periods of low returns is generally not discussed. In general, if we are entering a stable, low return, low volatility environment, investment themes, like reaching for yield, can be justified. Unfortunately, it is difficult to find a stable, low return environment in market history that has lasted for a long enough time to develop and hold such a strategic investment position. On the other hand, long-term high uncertainty and low return periods are much more numerous. If we are, indeed, entering another such a period, the investing climate will be quite different, and investors will need to have a different investment mindset.

Why be concerned about a high uncertainty environment? Recently, it hasn't been a problem. From late 2012 to mid-2015, markets have been stable and resilient, and simply going long the market was amply rewarded at low risk. For the three years ending December 2015, the MSCI World Index had a Sharpe ratio of 1.28 vs. a 20-year Sharpe ratio of 0.41. Downside risk was also limited. Drawdowns were shallow and short.

But the economic landscape appears to be changing again, and it is possible that we have returned to a more fragile investment environment. Global uncertainties are rising, and there is a wider dispersion of expected fiscal and monetary outcomes across the globe. In the US, rising interest rates and sluggish growth, coupled with a "profits recession", cloud the long-term outlook. Europe and Japan cannot seem to escape deflationary pressures and

restart the growth engine. And Chinese growth potential continues to be hampered by excesses. This change in the environment is supported by our research showing market cycle moves from resilient to fragile states that last for years (see "Stable vs. Unstable Markets: A Tale of Two States," FQ Perspectives 2014). If we are moving from a resilient market environment to one where markets are more fragile, it is important to remember the characteristics of fragile markets:

- 1) Market volatility will be higher than average and unstable,
- 2) Extreme events, both positive and negative, will be more frequent, and
- 3) Market risk (beta) will not necessarily be rewarded with return.

So if we have entered a fragile state, investors will not only need to cope with lower return but higher risk and uncertainty as well. A new

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adaptive mindset is needed if investors are to achieve their investment goals.

While many market commentators have stated that expected returns will be low, our approach looks at expected returns through the added lens of risk and uncertainty. So if you believe that we are entering a low return period, then it would be prudent to think about the risk environment as well. In this note, we will first review how resilient and fragile markets differ in some of their basic characteristics and then examine what that means for future investment opportunities.

Time to hold'em in resilient markets ...

A basic tenet of capital market theory is that taking more (less) risk is rewarded with increased (decreased) return. Over the long run, this appears to be true, but this can differ significantly over near-term periods of 3 to 5 years. At First Quadrant, we have a proprietary Market Risk Indicator (MRI) which measures how similar the current market environment is to known periods of resilience and fragility. The MRI is a global composite comprised of equity market implied volatility, credit spreads, manufacturing conditions, and monetary policy. Each of these indicators can partition data into high and low

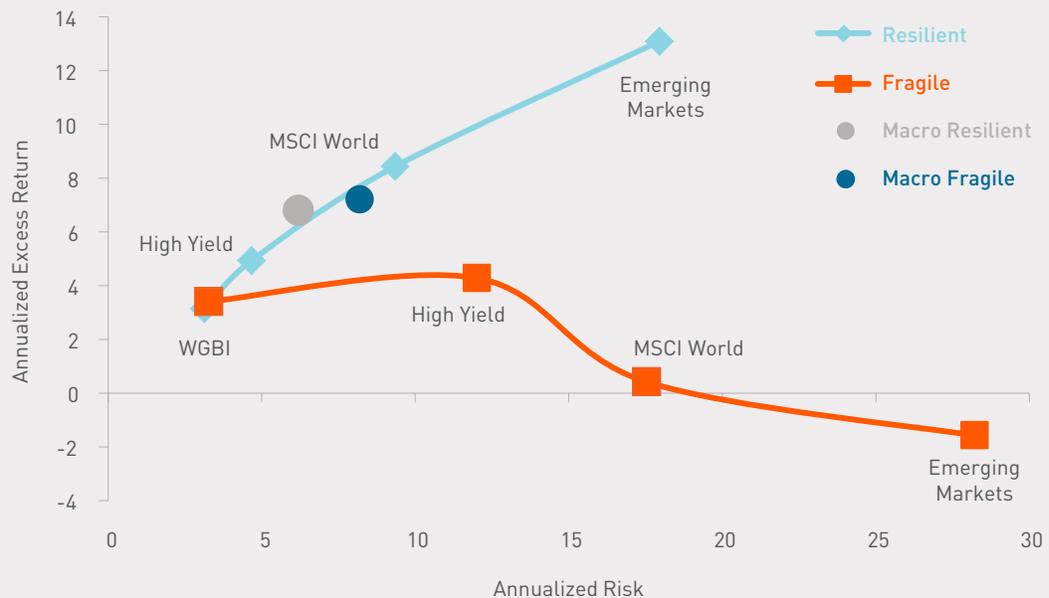
uncertainty states. While this note will use our proprietary MRI which combines these elements into a multi-dimensional view of risk, be aware that similar results can be obtained using the MRI's underlying components individually.¹

Partitioning market returns into fragile and resilient states illustrates the significant difference in the risk/return trade-offs between the two environments. Excess return is defined as return minus 30-day US T-Bills.

In the resilient state, we see the trade-offs that we were taught in capital markets classes and pervade the financial literature. Risk is generally rewarded with return, and the environment is conducive towards a buy-and-hold or static investment approach. Notably, the HFRI Systematic Macro Index, as an example of a "pure alpha" hedge fund, underperforms basic stock indices.

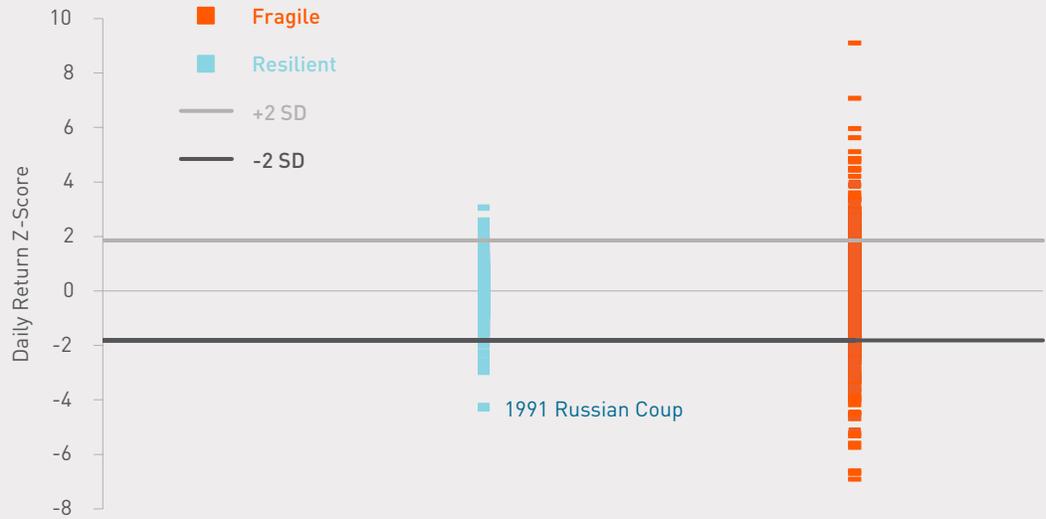
However, in fragile markets, we see a markedly different picture. Risk is significantly higher for equities and high yield bonds, while returns are quite low. The relationship between risk and return seems largely random. The fragile period is not a small subset, but encompasses 167 months (or more than half!) of the total of 312 months starting January 1990. The HFRI Systematic

FIGURE 01 - RETURN/RISK TRADE-OFF FOR FRAGILE AND RESILIENT STATES (1988 - 2015)



Sources: First Quadrant, L.P., Datastream

FIGURE 02 - MSCI WORLD EQUITY DISPERSION OF DAILY RETURNS
(JANUARY 1990 - DECEMBER 2015)



Sources: First Quadrant, L.P., Datastream

Macro Index now outperforms basic stock indices, though its risk and return are not much different than the resilient market state where it underperformed significantly. Sovereign bond returns are also stable but typically insufficient for most investors to maintain their funded status. With market returns generally less than 5%, it would be difficult for a plan to meet their actuarial goals. Since the fragile state has occurred a little more than half the time in the past, the risk of funding short-falls rises accordingly.

Furthermore, the risk of extreme events also changes. The chart above shows the dispersion of daily returns for the MSCI World Index portioned into resilient and fragile market periods. The returns have been “z-scored” and are depicted in terms of standard deviation.

Fragile markets are more prone to extreme events, while resilient markets are more normally distributed. But significant **exogenous** shocks can happen even in resilient markets. Note the four standard deviation event that occurred in 1991 when the USSR was dissolved. While not

apparent in this graph, market corrections of 10% to 15% are also possible, but these are usually followed by rallies. In fact, resilient markets are generally the times it pays to “buy on the dips.”

On the other hand, fragile markets are subject to more **endogenous** shocks with extreme swings of almost eight standard deviations on the downside and ten on the upside. To give some perspective, if market returns were indeed a normally distributed random walk, we should have a four standard deviation or greater event only one day in every 140 years. In reality, however, extreme events not only tend to happen much more frequently, but appear largely confined to fragile markets. Bear market declines of 20% or more generally occur in fragile markets and “buying on the dips” is likely to be more like “catching a falling knife” as traders say.

According to our MRI reading, we entered a fragile environment in mid-2015 as equity and credit sentiment both signaled a shift to high uncertainty. Looking forward, it is highly possible that a buy-and-hold allocation will generate



returns and risk more in line with the fragile states. In that case, investors can not only expect lower returns on average with accompanying higher volatility but also many more extreme events. This is expected to result in disappointing performance overall at the plan sponsor level.

...but change your mindset in fragile times

During a period of high volatility and low returns, some common return-enhancing strategies may not be appropriate. For instance, shifting to high yield bonds from government bonds will not necessarily improve returns as the previous chart shows, since in the fragile state, high yield bonds have the same excess return as government bonds at approximately three times the volatility. On the other hand, using high yield bonds as an equity substitute seems feasible since high yield has similar returns to equities at lower risk.

So, how should investors structure their portfolios and mandates in periods of fragile markets? What sort of an investment mindset is needed during fragile times? We make the following observations and suggest a few investment considerations, but the key is adaptability. In cases where a plan's portfolio cannot adapt quickly because the process of reallocating assets takes time, then it may become important that at least some of the underlying managers be adaptable.

Incorporate top-down orientation

Diverging growth and monetary policy across the globe lead to dislocations and opportunity for strategies with a macro framework. Rising interest rates in the US versus negative interest rates elsewhere are one example of this type of divergence. Such an environment can lead to directional positioning in some areas, and relative positions in others. Idiosyncratic bets on political events such as the Brexit are also fair macro game. Liquid investments are key to profiting from these conditions since investors need to be nimble; derivatives, such as equity futures and currency forwards, may be more appropriate and are typically used in macro programs. Currencies

may also be also a prime source of uncorrelated return, since many macro events are reflected first in the underlying currencies of the markets in question. Bets on political events such as the Brexit, for example, can be done exclusively in liquid currency forward markets. For security selection, incorporating top-down views along with bottom-up analysis can become critical as securities react increasingly to macro events and less to their underlying fundamentals.

Using HFRI Systematic Macro Index from the previous charts as an example, now is not the time to throw in the towel on alternative top-down strategies. For the full 1990-2015 period, the MSCI US Equity Index and the HFRI Systematic Macro Index had similar annualized excess returns of +7.29% and +7.02%, respectively. In aggregate, this suggests to investors that macro can deliver an equity-like return. But this may mean long periods of underperformance during resilient times and long periods of outperformance in fragile markets that may try investors' patience. Other alpha-related strategies show similar results.

Increase active share and seek out uncorrelated returns

Don't abandon long only, broad market, total return strategies. But closely examine and think carefully about their structure and correlation to the overall portfolio, especially to equity markets. Incorporating total return strategies that are designed to be uncorrelated to broad market betas may also be significant contributors. As market returns can be scarce, consider loosening constraints and guidelines to allow for increased potential. If you're passive, go active; if you're long-only, opt for 130/30 or long/short; look for capital efficient ways to introduce more diversifying elements into the portfolio using "portable alpha" programs. Note however, it is important to check that the return stream is indeed "orthogonal" to underlying market exposures, and not merely beta disguised as alpha.

If you are a taxable investor, tax-efficient strategies become crucial in a low return environment whether uncertainty is high or low.



Fragile markets also present an attractive time to be more tactical. There are strong runs both up and down which can last for some time, though, in the end, the cumulative return will be low. From 2008 – 2012, the MSCI World Index was down -7.3%. But this included a -48.1% plunge from 1/08 to 2/09, and then a +78.8% rebound from 3/09 to 12/12. While timing these trends requires skill, they can be very profitable. Beware of the difference between “buying on the dips” and “catching a falling knife.” It’s this distinction which makes tactical trading of trends difficult, though they can be rewarding.

Consider hedging and contrarian strategies

Tail-risk mitigation strategies, particularly with options, may be appropriate across the market cycle, but particularly in fragile markets even though option prices increase due to higher volatility. During the resilient phase of the cycle, option prices are low (due to low volatility) and primarily hedge against exogenous shocks, like the 1991 Russian coup. Tail-risk hedging can also smooth return streams during market corrections. But the fragile market environment has a high frequency of endogenous, large tail events and extended long drawdowns. So it is important for investors to either maintain their tail-risk hedging programs or start them despite the increased cost of options. If you are still concerned about cost, dynamic tail-risk hedging strategies or proxy hedging through currency or bond investments may be rational.

Global market regions, asset classes and instruments that are being ignored presently may also provide another avenue to harness returns. Emerging markets and commodities are two such areas. Conversely, stay away from overly crowded trades and assets. If you think the crowd is always wrong, then periods of high uncertainty tend to be the best times to be a contrarian since that’s when investors often make mistakes.

Adopt a new investment mindset

If we are entering a low return environment, as many market commentators suggest, it is important to consider the risk state as well. Merely planning for low returns, without considering the possibility of high risk, can be quite dangerous since low return/high uncertainty periods are much more frequent and persistent than low return/low uncertainty periods. As we have seen, the difference can be quite stark in a fragile market state.

Fragile markets are characterized by high volatility, more extreme events, and a seemingly random relationship between risk and return. Since market returns are expected to be mediocre going forward, some investors may need to change their mindset as different, uncorrelated investment options become more important. And investors should carefully examine the investment framework and risks expressed across their portfolio and the adaptability of the underlying component strategies. Fragile market states are typically the most difficult for investors and require the flexibility to quickly adapt to changing market conditions. Those who don’t adapt will likely be left behind.



Endnotes

¹Currently the MRI is saying that market conditions are 75% similar to past fragile markets. This is due to (1) wide investment grade (Baa-Aaa) credit spreads, and (2) the high cost of options hedges as measured by a composite of the S&P, EuroStoxx and Oil VIX’s. Essentially, both the stock and bond markets are signaling higher than average macro risk, and the combination of the two results in a 75% similarity with past fragile market states. In order to go to 100% similarity either (1) global manufacturing goes into recession, (2) the G-6 central banks have to tighten monetary policy, or (3) the composite VIX has to go into its upper quartile. The Market Risk Indicator is described in detail in “Risk Cascades: Anticipating Fragile and Resilient Markets” FQ Perspectives 2015.



Index Definitions

The **BofA Merrill Lynch High Yield Master Bond Index** monitors the performance of below investment grade US dollar-denominated corporate bonds publicly issued in the US domestic market. BofA Merrill Lynch Indexes are service marks of BofA Merrill Lynch.

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