Bias, Risk Premia, and Diversification using Asymmetry.

Presentation by Anthony Limbrick
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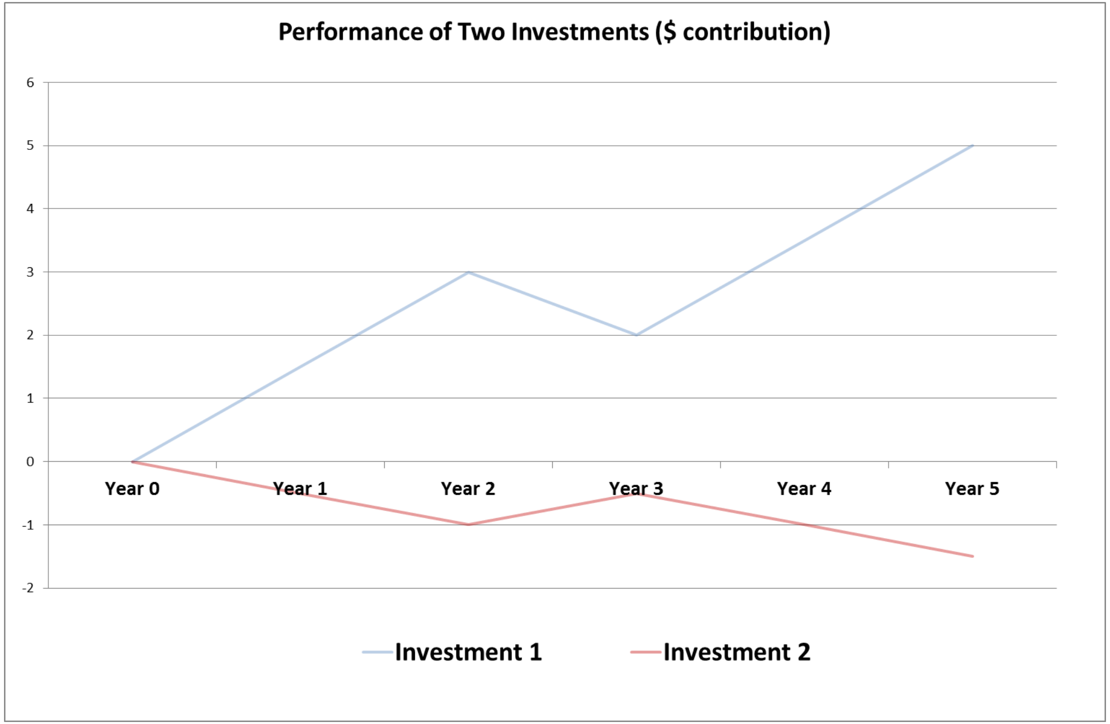
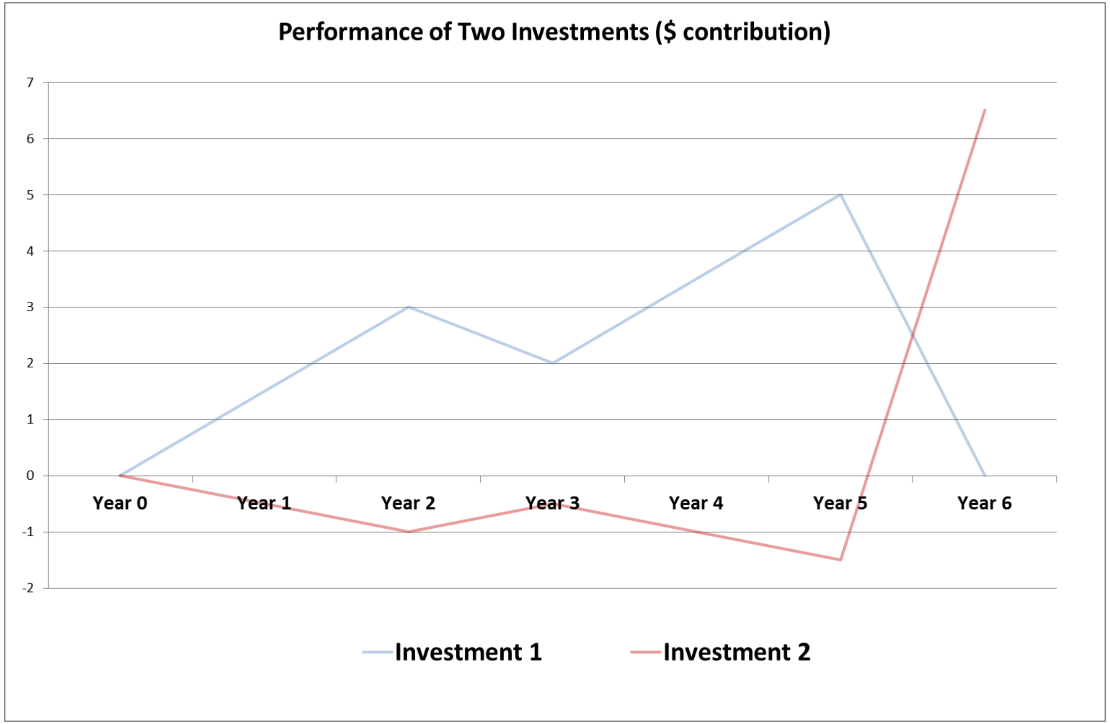
Which investment do you prefer?



Sources: 36 South

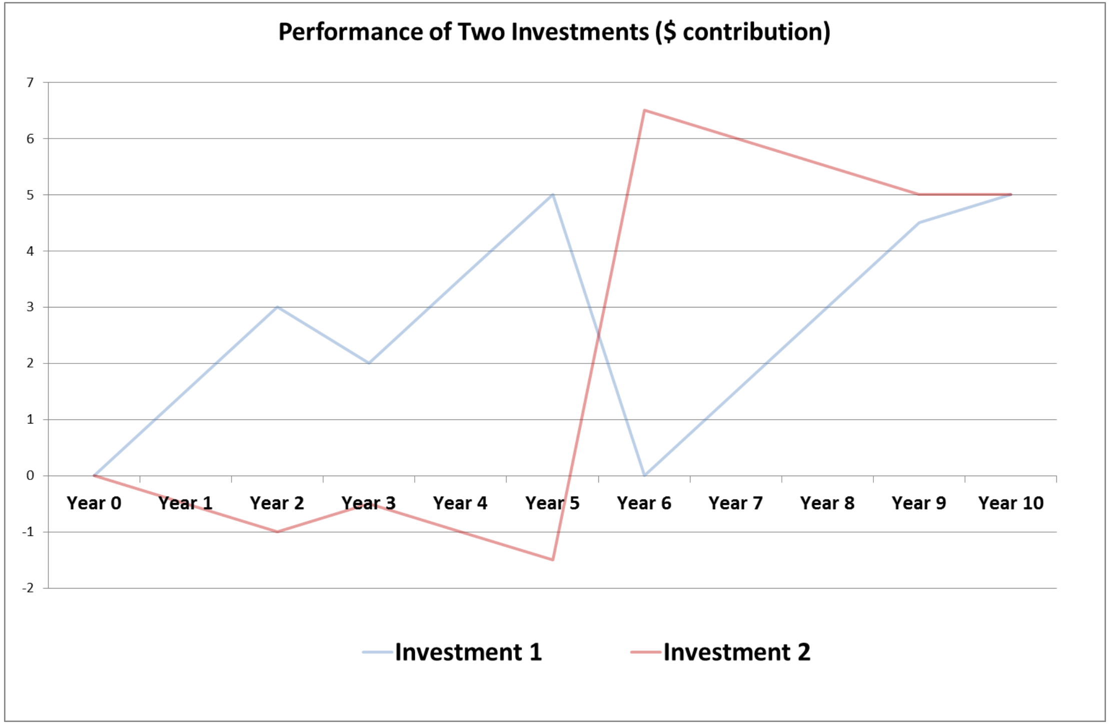
Which investment do you prefer now?



Sources: 36 South

Which investment do you prefer now?

And now?

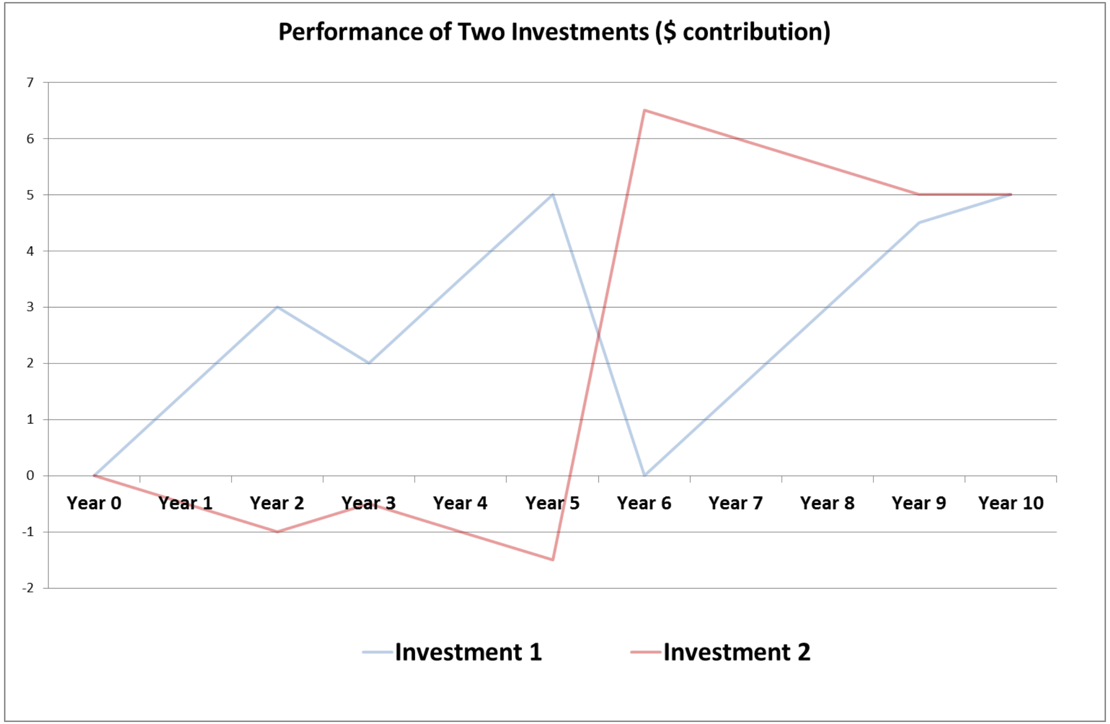


Sources: 36 South

Which investment do you prefer now?

And now?

What if we combined the two?



Sources: 36 South

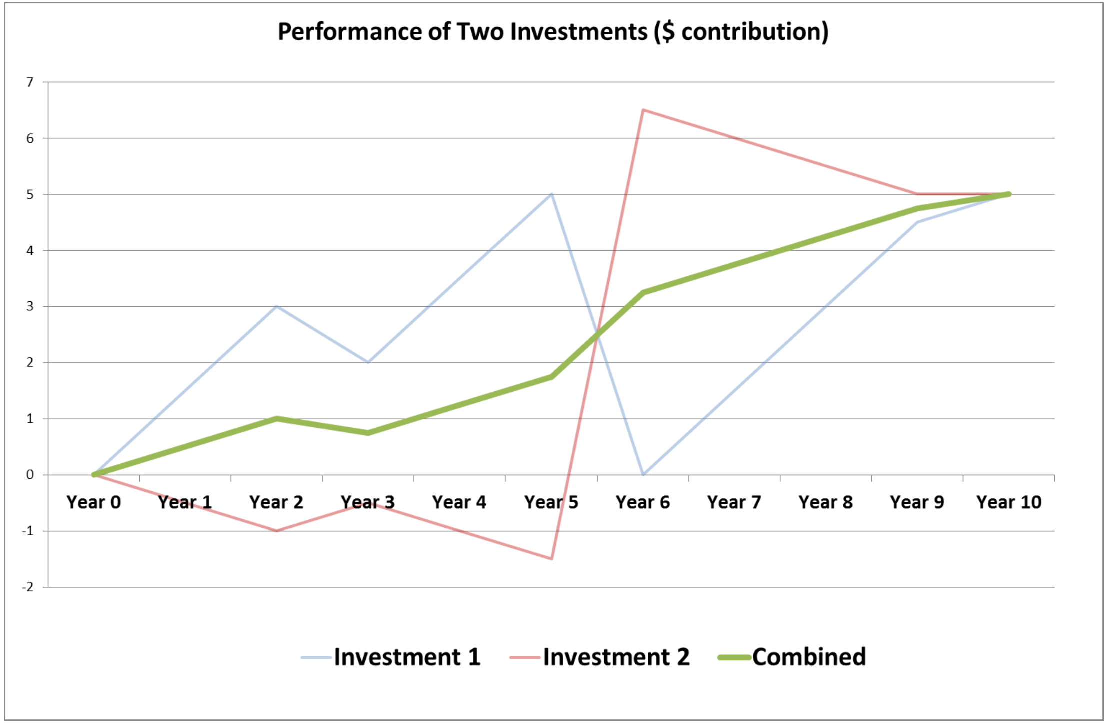
Which investment do you prefer now?

And now?

What if we combined the two?

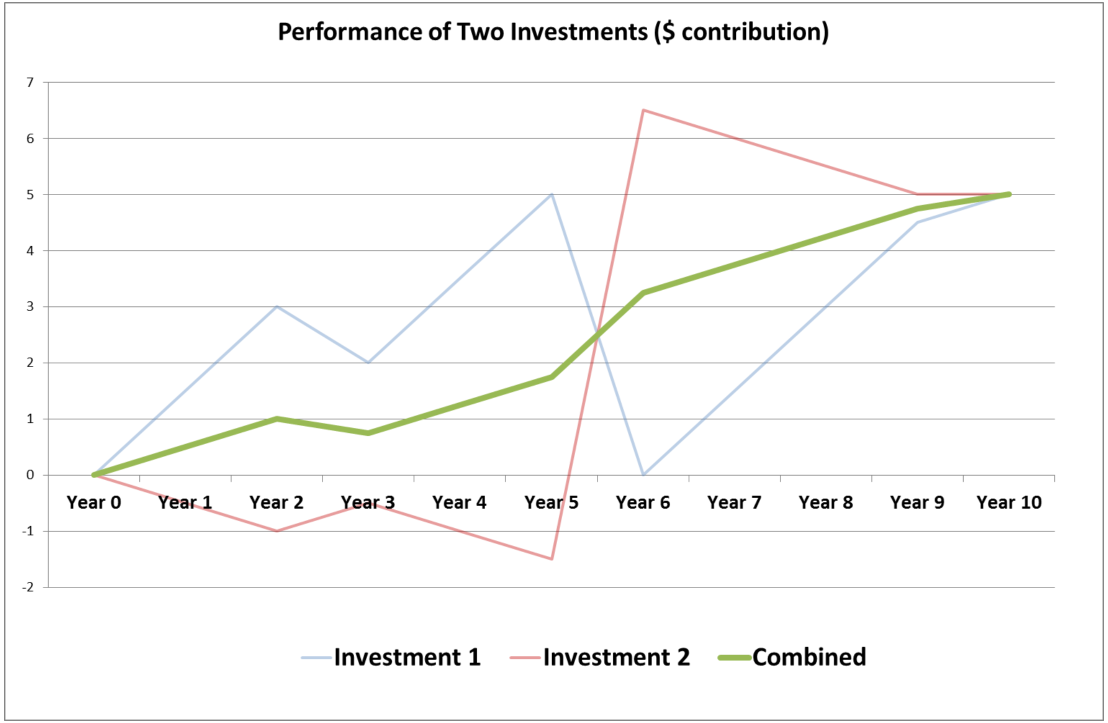
Looks great. Same return with lower volatility.

Smooth portfolio performance.



Sources: 36 South

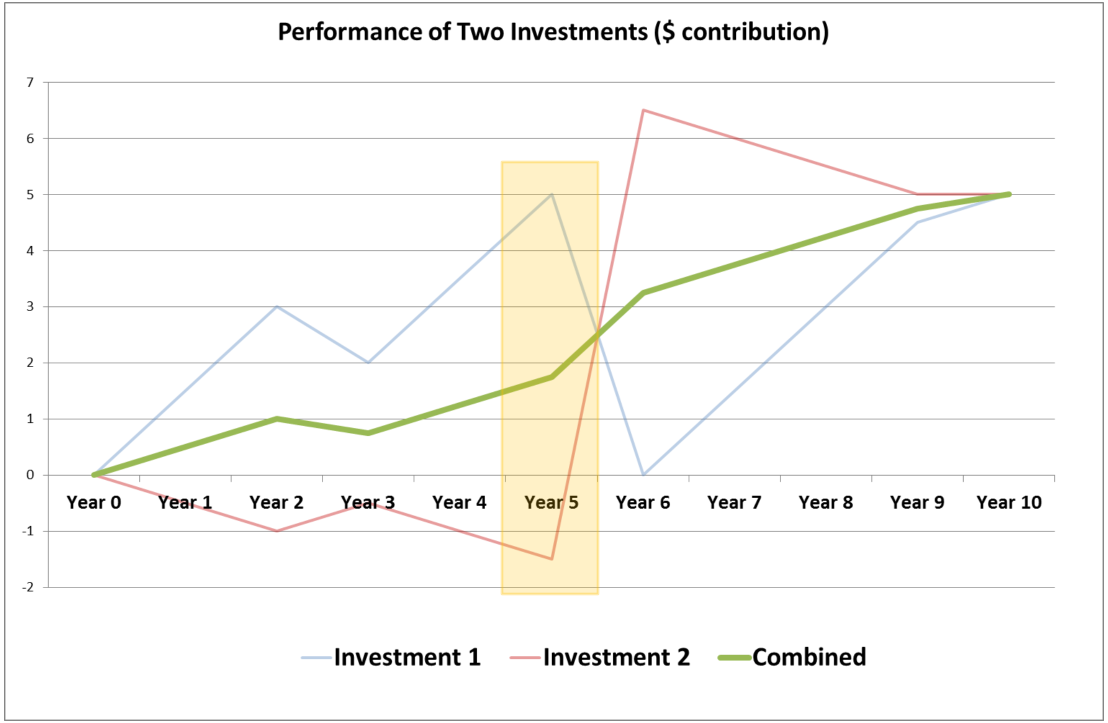
Two Questions…



Sources: 36 South

Two Questions…

1. At the end of Year 5, which investment are we actually in?

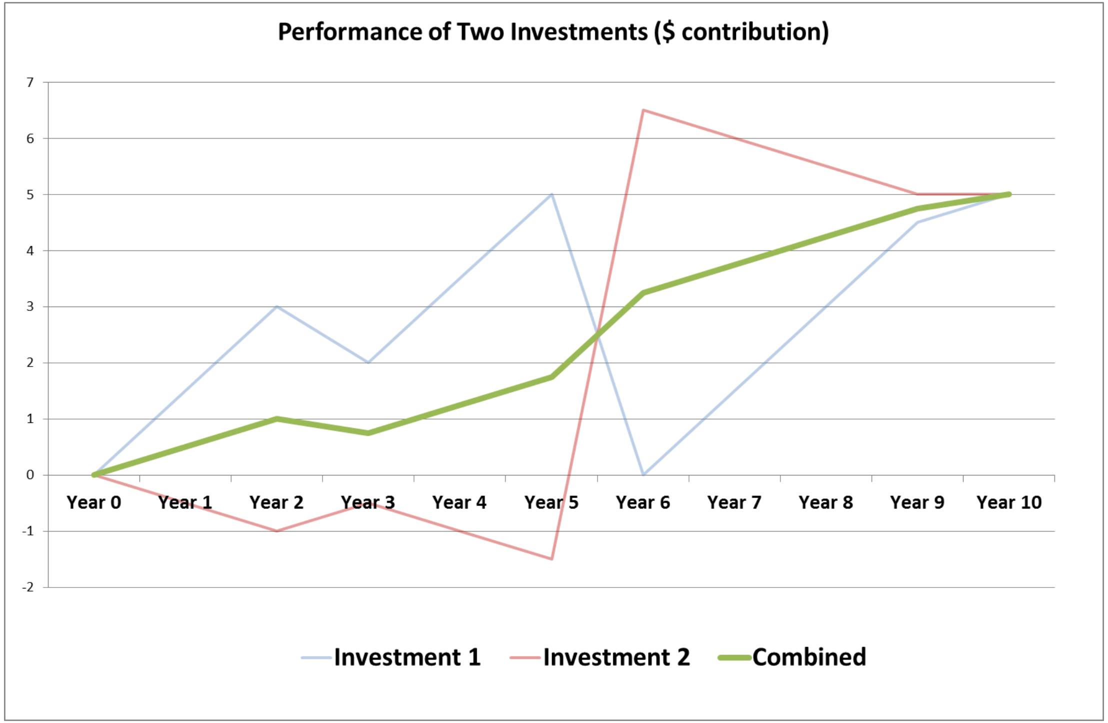


Sources: 36 South

Two Questions…

1. At the end of Year 5, which investment are we actually in?

2. Why do we really like “smooth”?

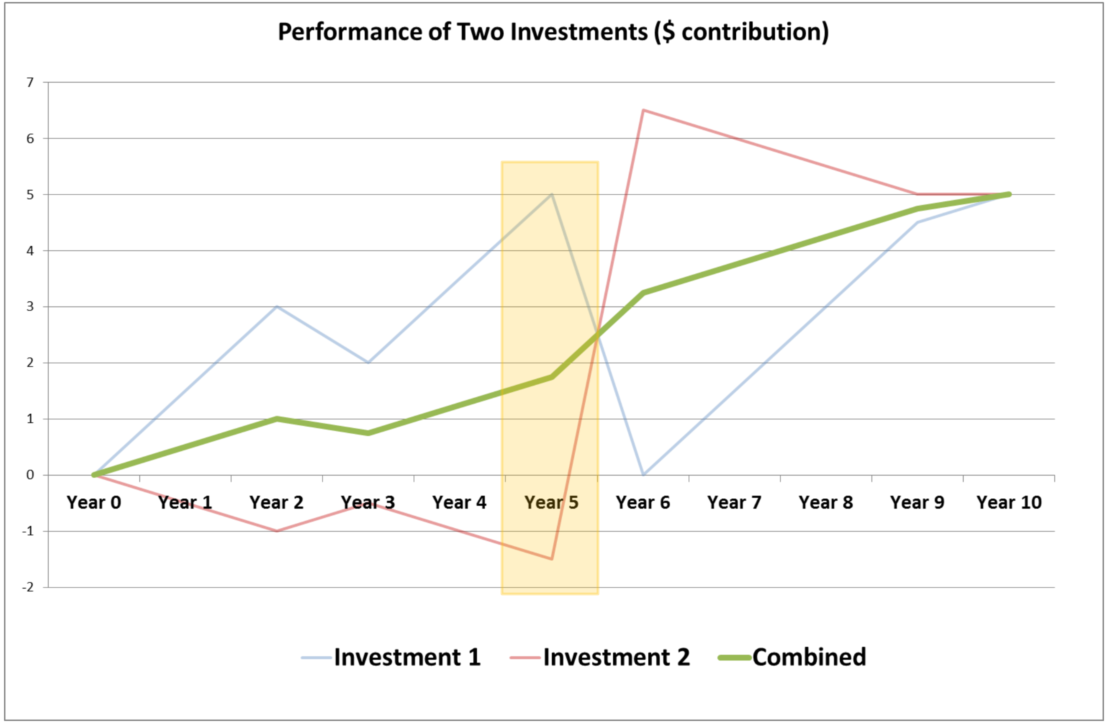


Sources: 36 South

At the end of Year 5 we are most likely in Investment 1. It has had the best performance over both the last two years, and the last five years.

We may even have started off with the combined portfolio, but our impatience, or the impatience of our investors has forced a portfolio change.

We are most definitely not in Investment 2!

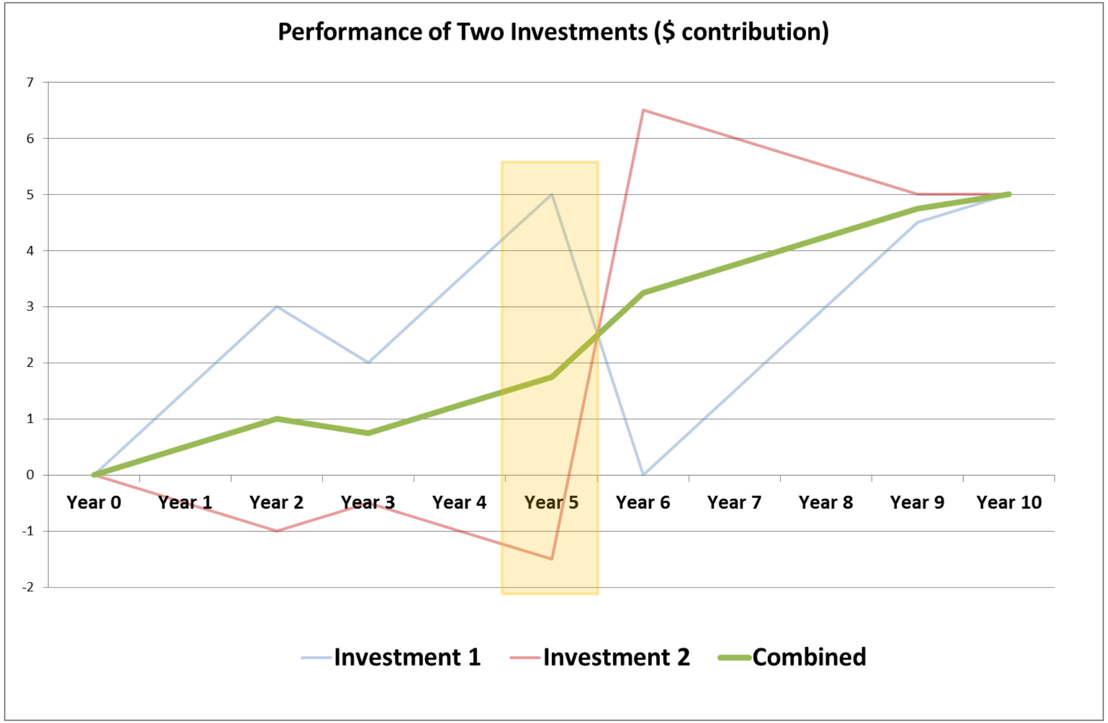


Sources: 36 South

A range of biases have developed in human beings.

These are evolutionary cognitive adaptations to help us survive in a hostile environment.

Those biases have brought us to recognize a pattern of outperformance, and to overweight recent performance.

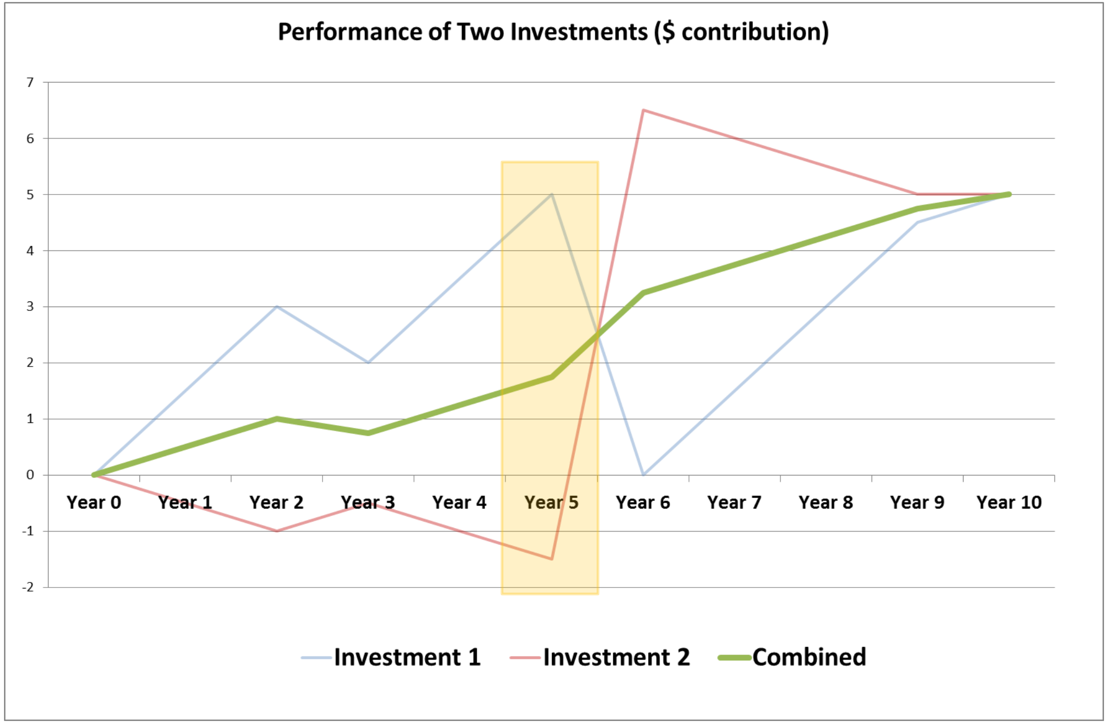


Sources: 36 South

Examples…

Recency Bias
Anchoring Bias
Herding (Bandwagon Effect)

Endowment Bias
Familiarity Bias
Confirmation Bias

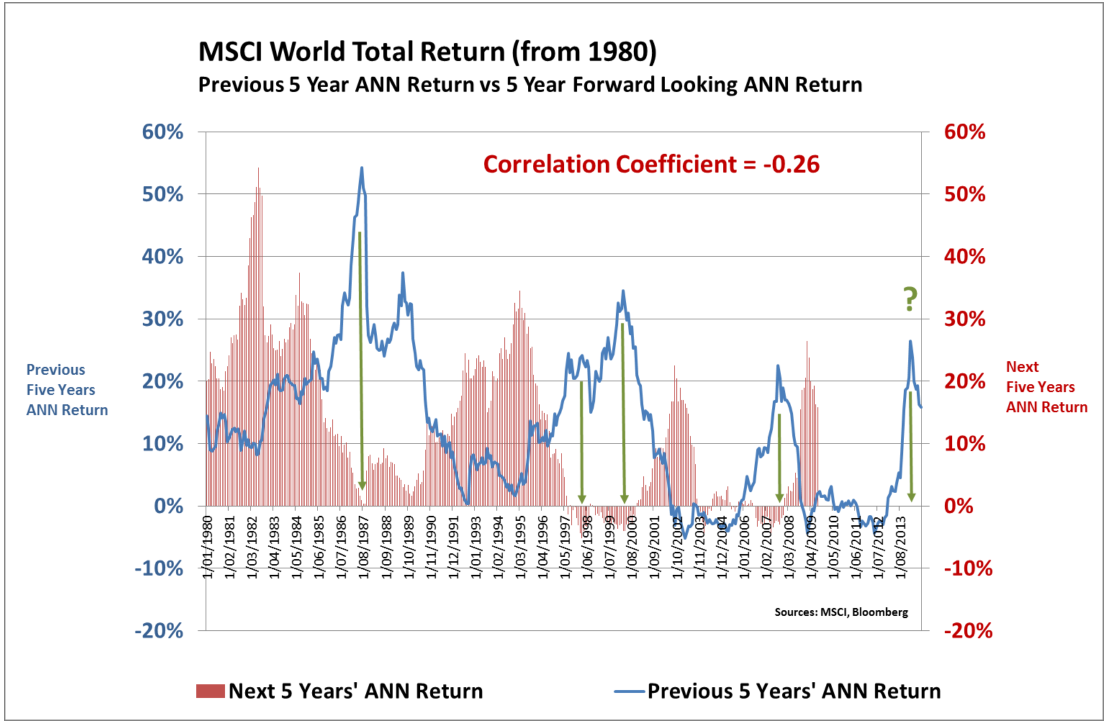


Sources: 36 South

Investors tend to chase performance.

The chart shows how dangerous that approach can be.

Chasing a peak in 5 year performance can lead to a disappointing 5 year investment.

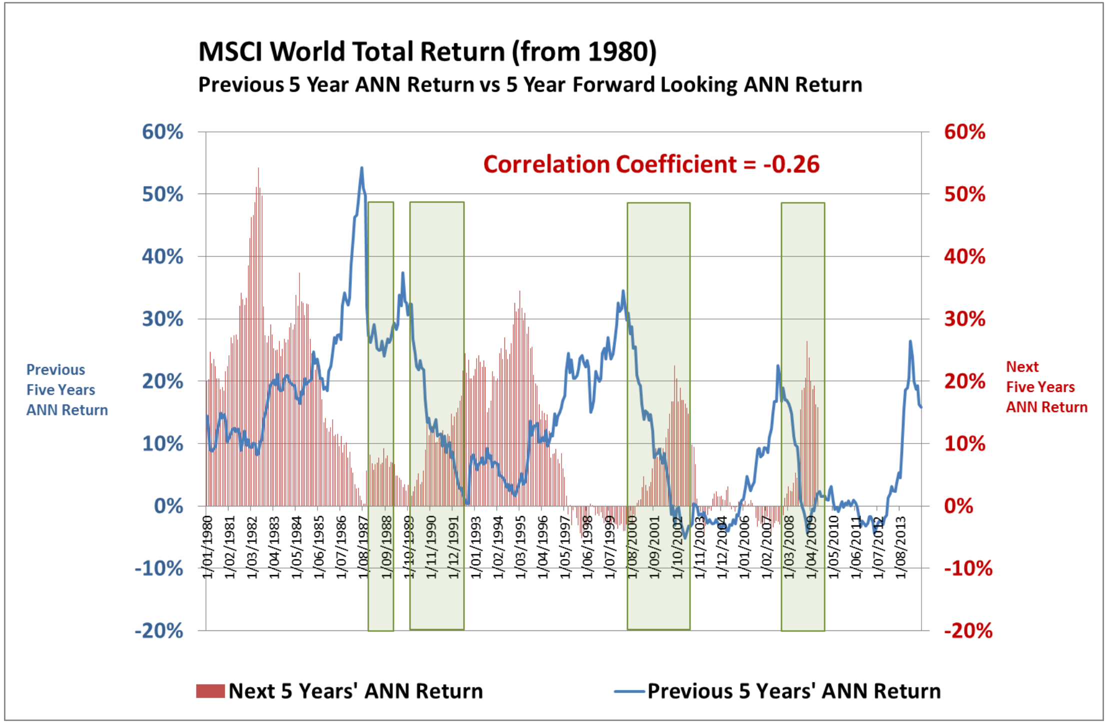


Sources: MSCI, Bloomberg

Bear markets and/or shocks often follow the herding into stocks near the end of strong 5 year runs.

The green zones mark the 1987 crash, the 1991 bear, the 2000-2003 bear and the GFC. Each after a peak in the 5 year equity market performance.

Note we have just had another peak…



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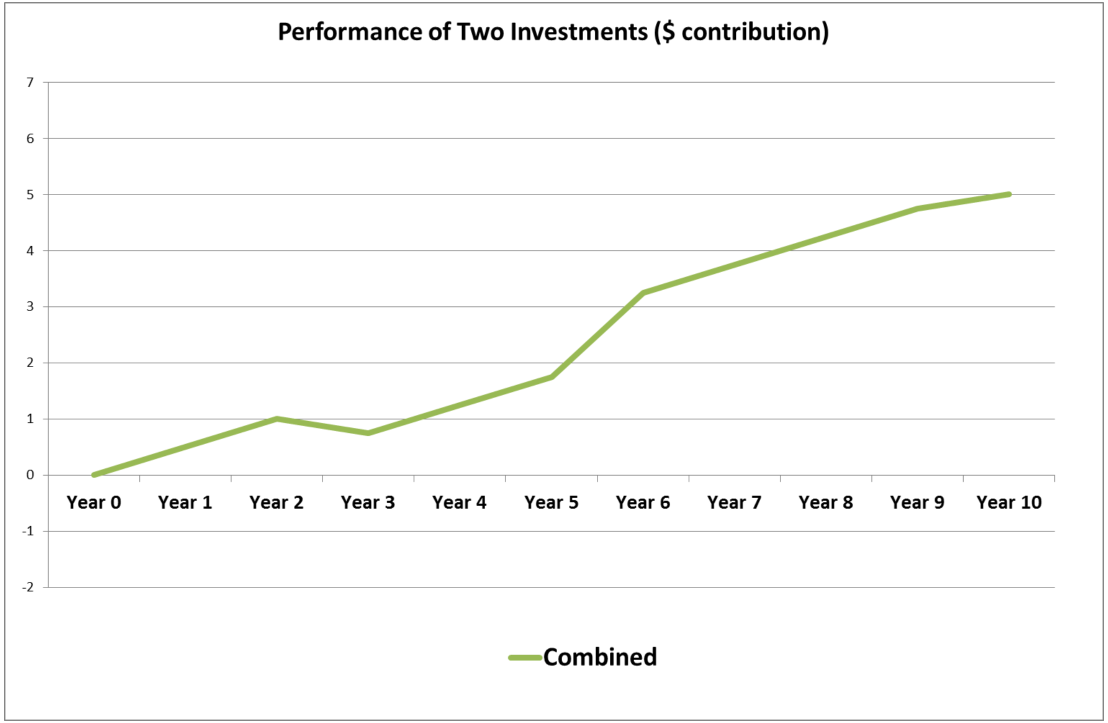
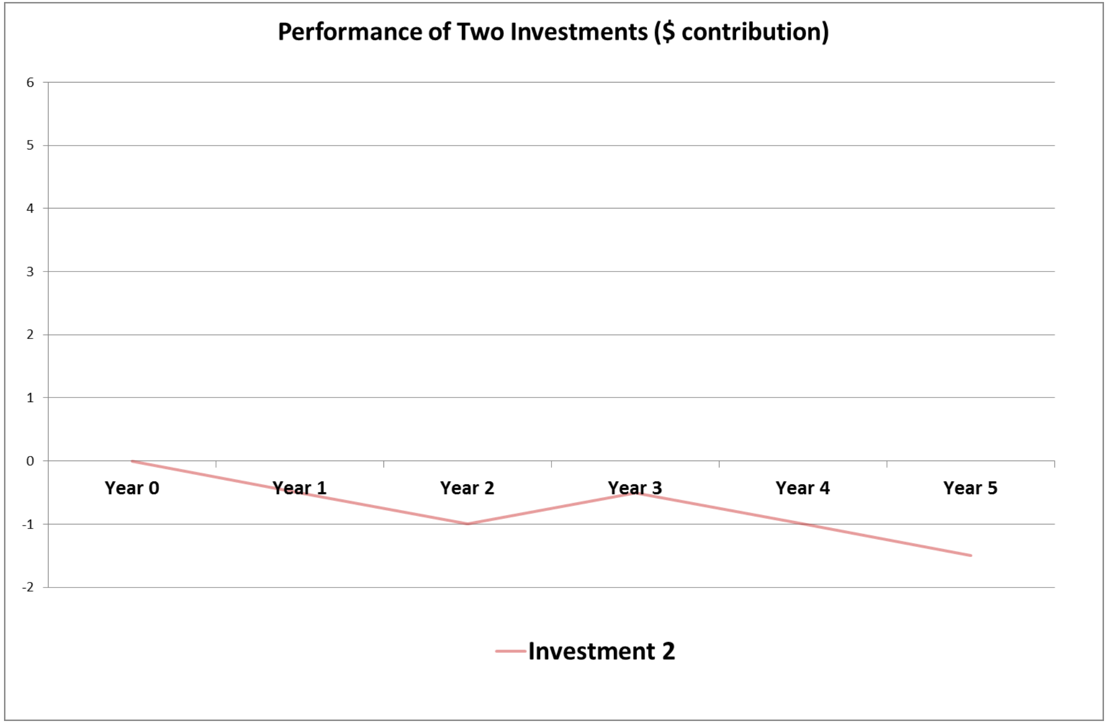
Two Questions…

2. Why do we really like “smooth”?



Sources: 36 South

Let’s think about Investment 2 again…



Sources: 36 South

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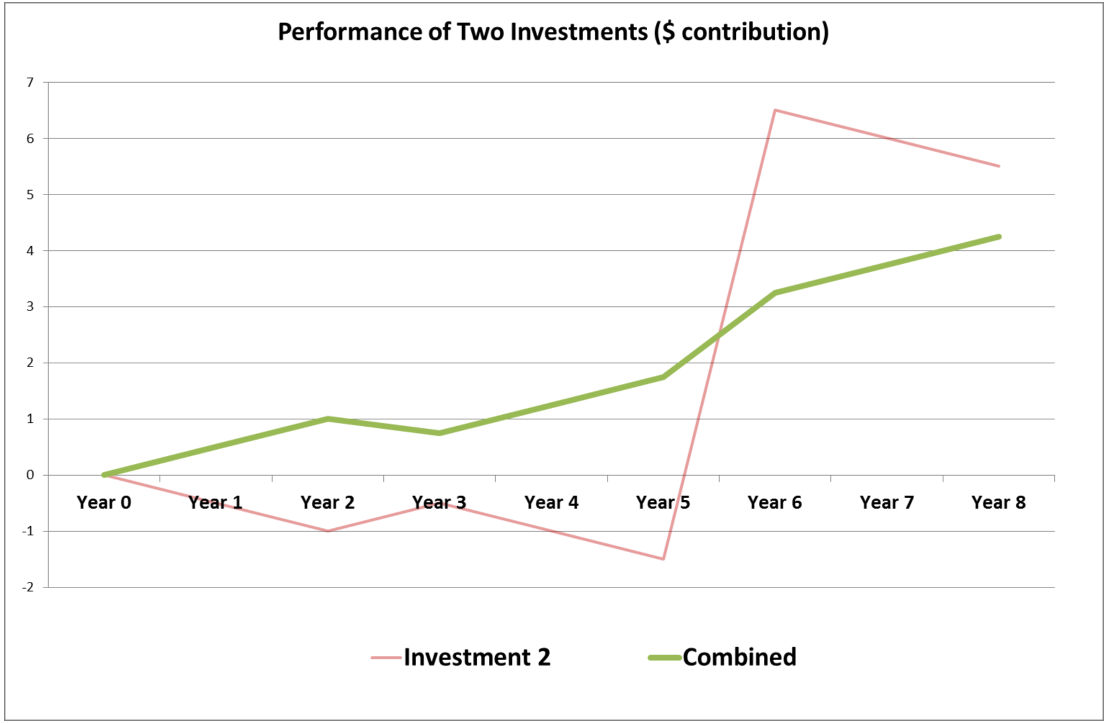
Let's think about Investment 2 again…

Imagine we have seen it perform through a previous cycle.



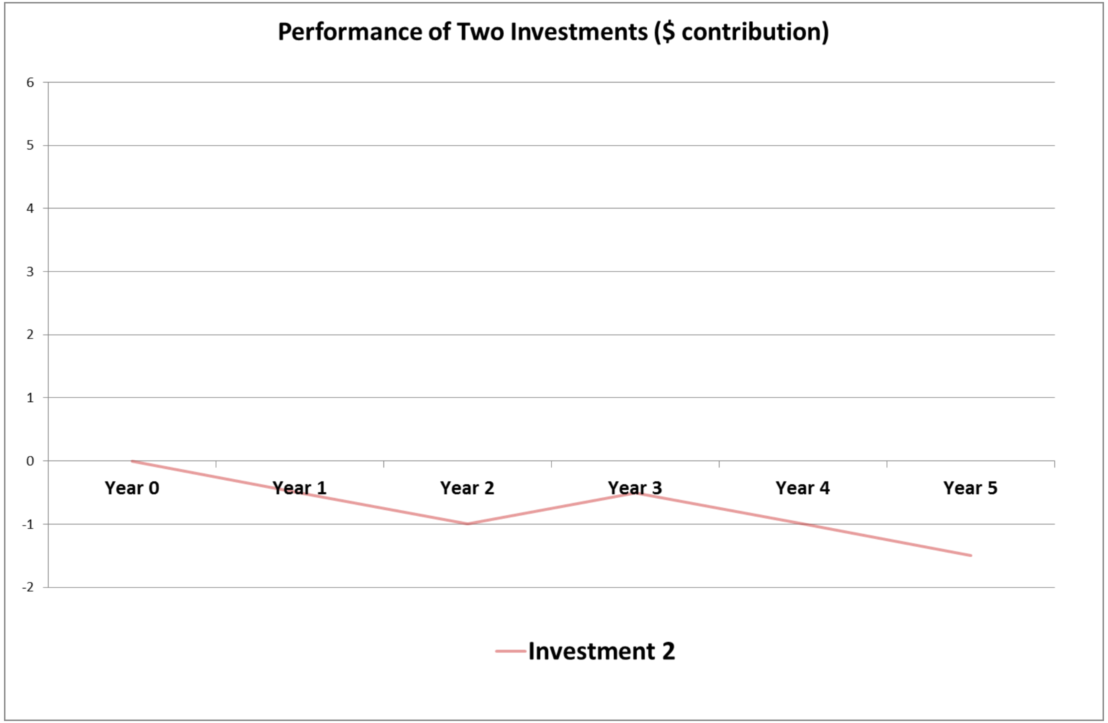
Sources: 36 South

Let’s be honest…

Are we really going to be invested at the end of Year 5?

Why not?

Being human. Loss Aversion.



Sources: 36 South

The problem is the short-sightedness that accompanies Loss Aversion.

In 1995 Benitzer and Thaler formalized a framework around this – Myopic Loss Aversion.

The bias that comes from feeling losses twice what we feel in profits incentivizes us to chase short term incremental returns. And we lose sight of the objective… positive expected returns.

In essence, we end up preferring positive carry to a positive expected return.

Short term incremental returns, accompanied by occasional large losses, are typical of the returns that most risk premia give us.

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We know this, but we are pretty sure we will know the signs before the crash, or early enough in the event, to get out before the damage really gets us.

Sources: MSCI, Bloomberg.

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We know this, but we are pretty sure we will know the signs before the crash, or early enough in the event, to get out before the damage really gets us.

Sources: MSCI, Bloomberg.

Yeah right.

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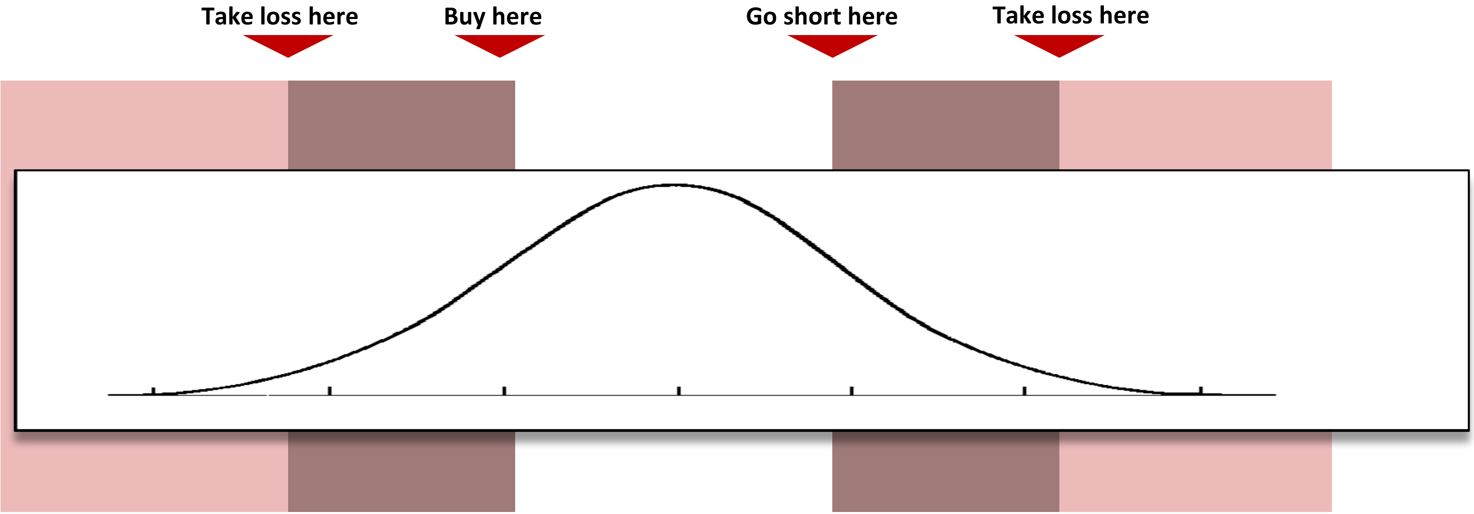
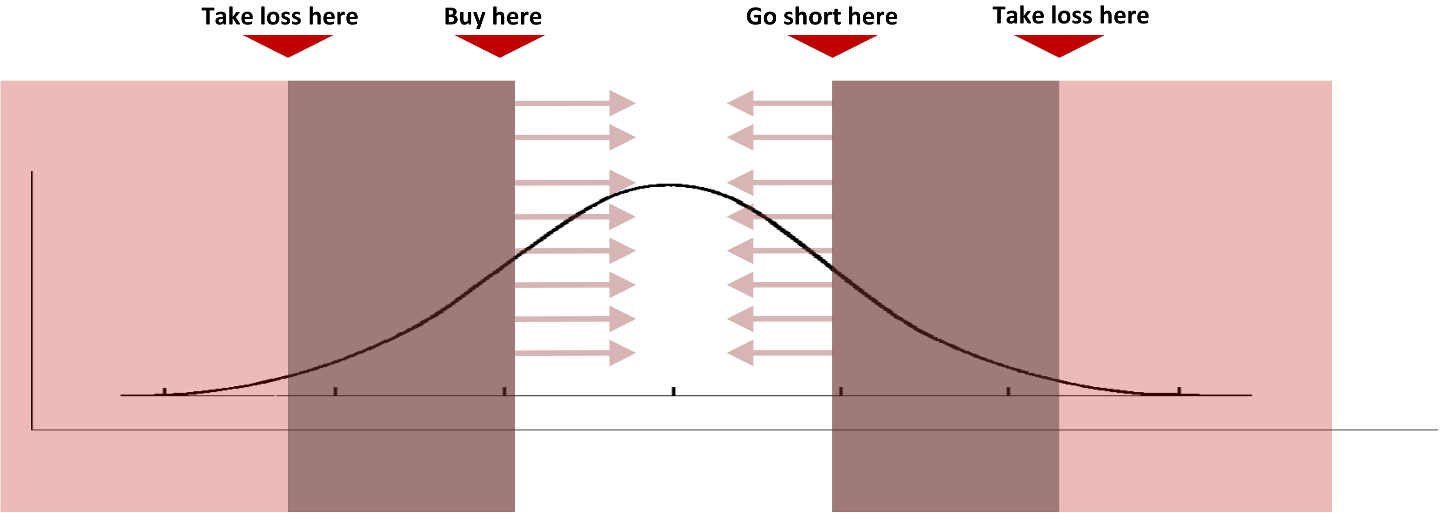
Where most people work with distributions



Sources: 36 South

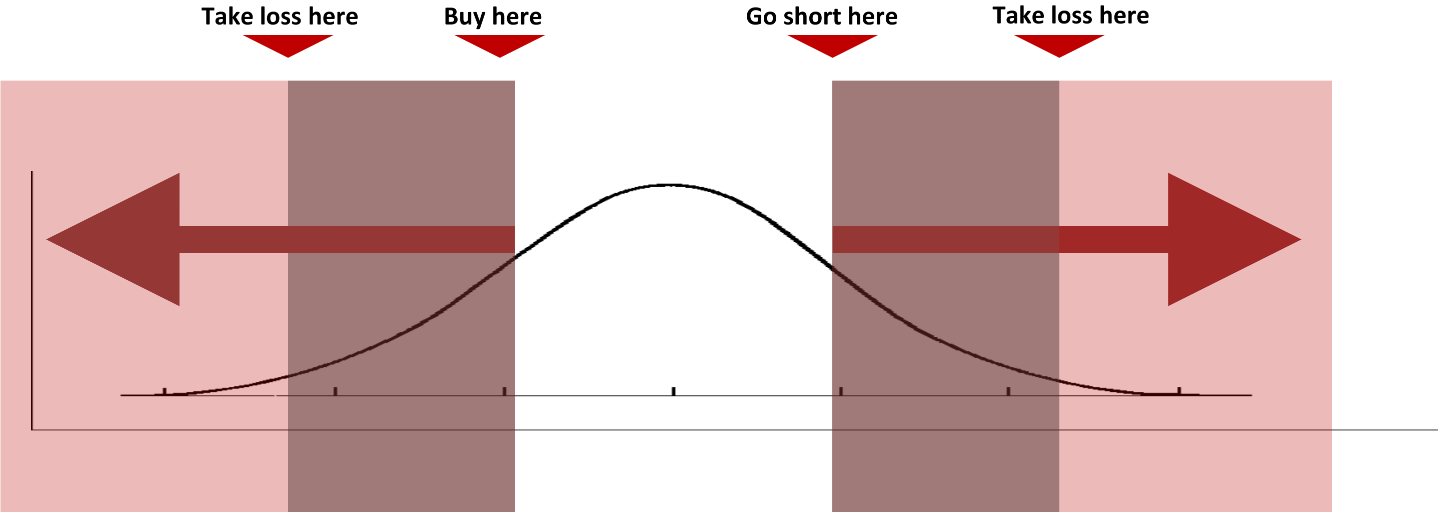
Where most people work with distributions



Sources: 36 South

Most investors assume a normal distribution, and prefer regular profits, at the risk of occasional losses (each arrow represents a number of investors).

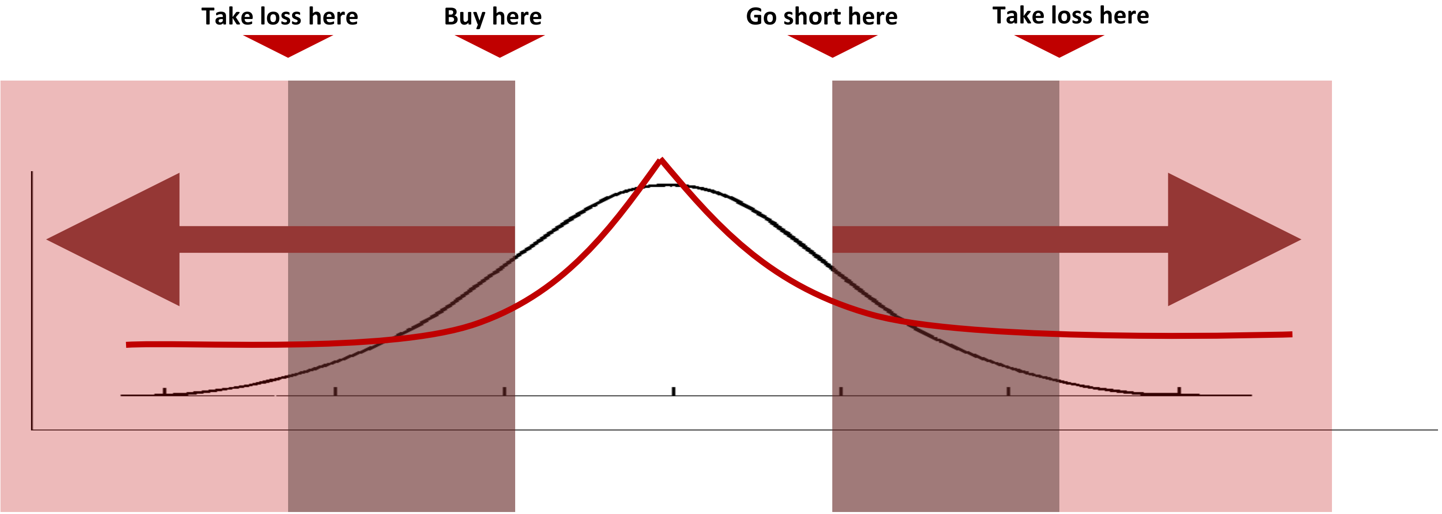
Where most people work with distributions



Sources: 36 South

The crowding at the edges of the distribution creates the potential for a large number of investors to try and squeeze out a narrow exit when the market undergoes a stress event, and the shape of the distribution changes…

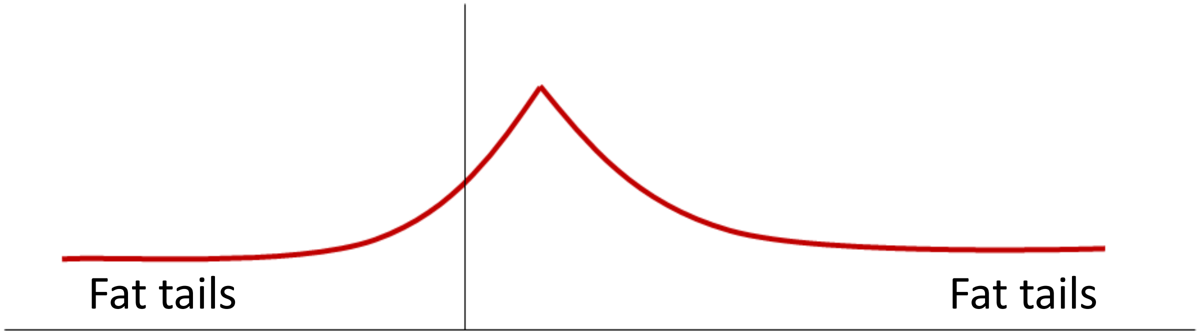
Where most people work with distributions



Sources: 36 South

The crowding at the edges of the distribution creates the potential for a large number of investors to try and squeeze out a narrow exit when the market undergoes a stress event, and the shape of the distribution changes…

The leptokurtic distribution…



Sources: 36 South

Fat tailed distributions enable the existence of strategies that monetize the change in risk premia.

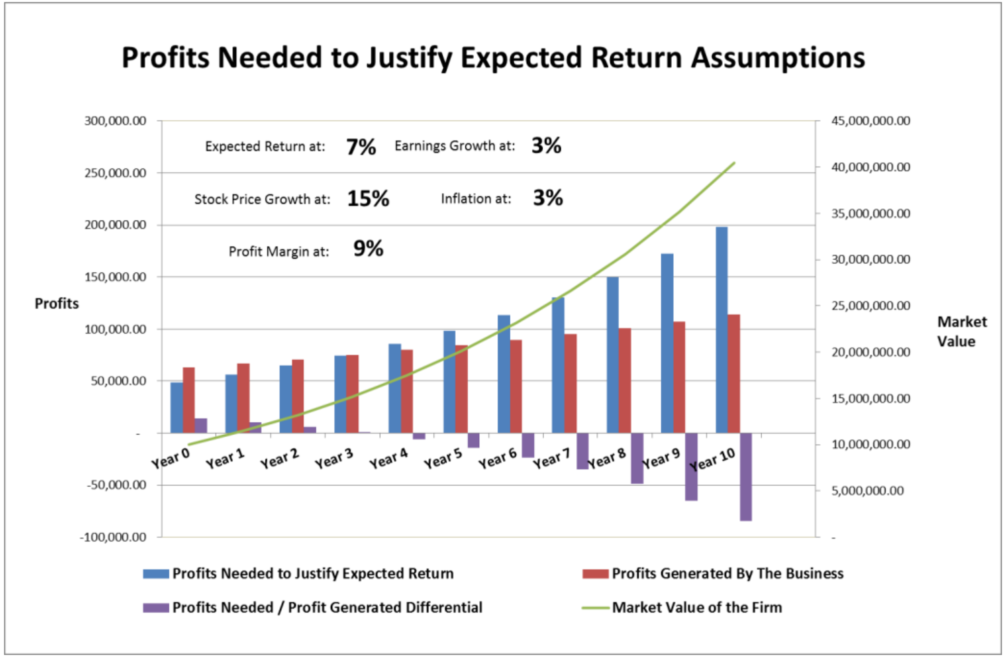
Trend following, long volatility, tail risk, dedicated short bias…

Risk Premia get diluted…

As the market rallies, the expected return (risk premium) gets diluted.

Diluted by the increasing claim on profits from the growing market value of the equity.

But the increased market value creates an illusion of sustainability as total return increases temporarily.



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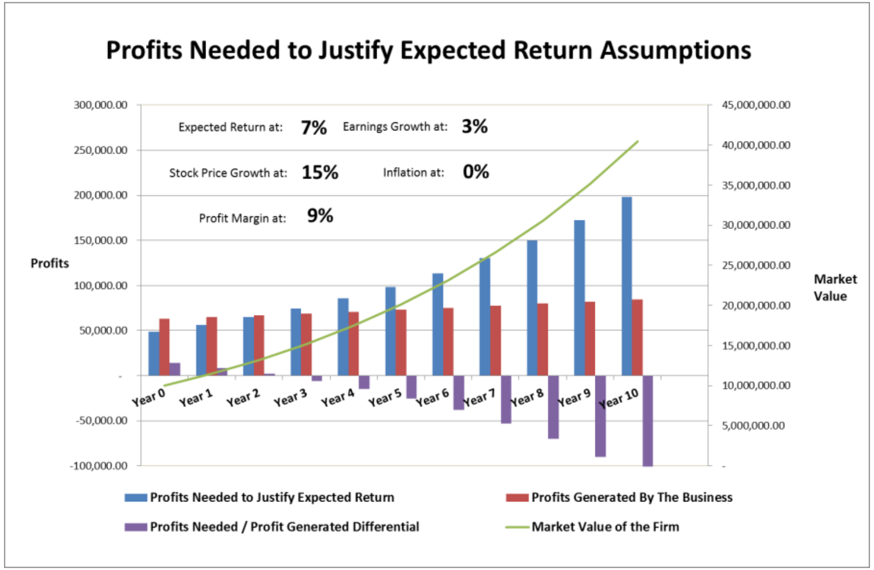
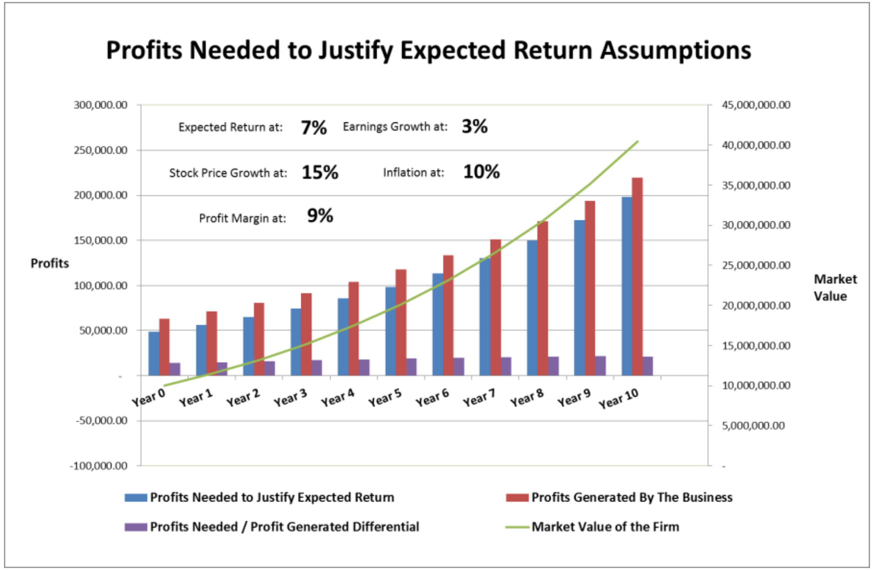
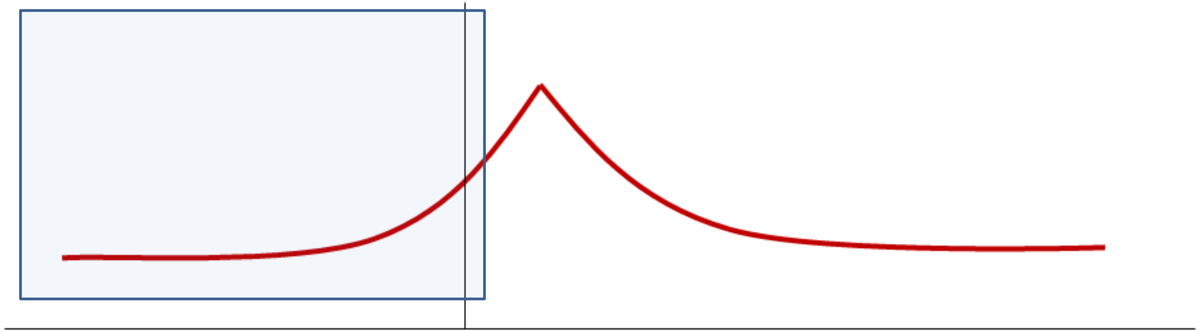




Sources of both graphs: 36 South

A point aside, have a look at the impact of inflation…

The leptokurtic distribution…



Sources: 36 South

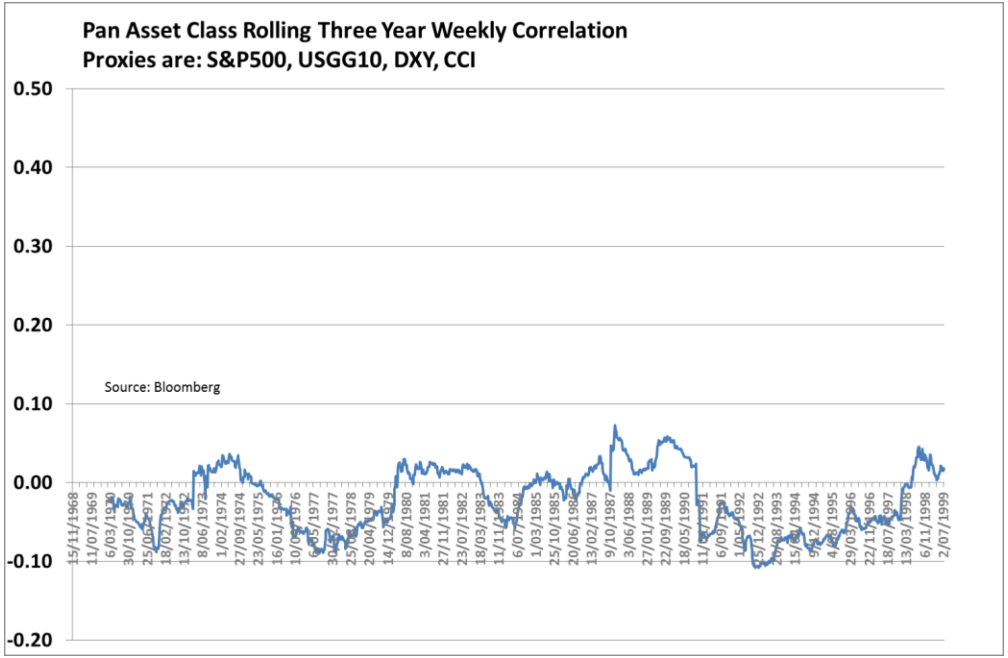
We take a bunch of assets (risk premia), and we diversify.

What do we need for diversification to work?

Modern Portfolio Theory tells us that we can have a “free lunch”…

Same returns, lower volatility, or higher returns, same volatility.

A great idea…

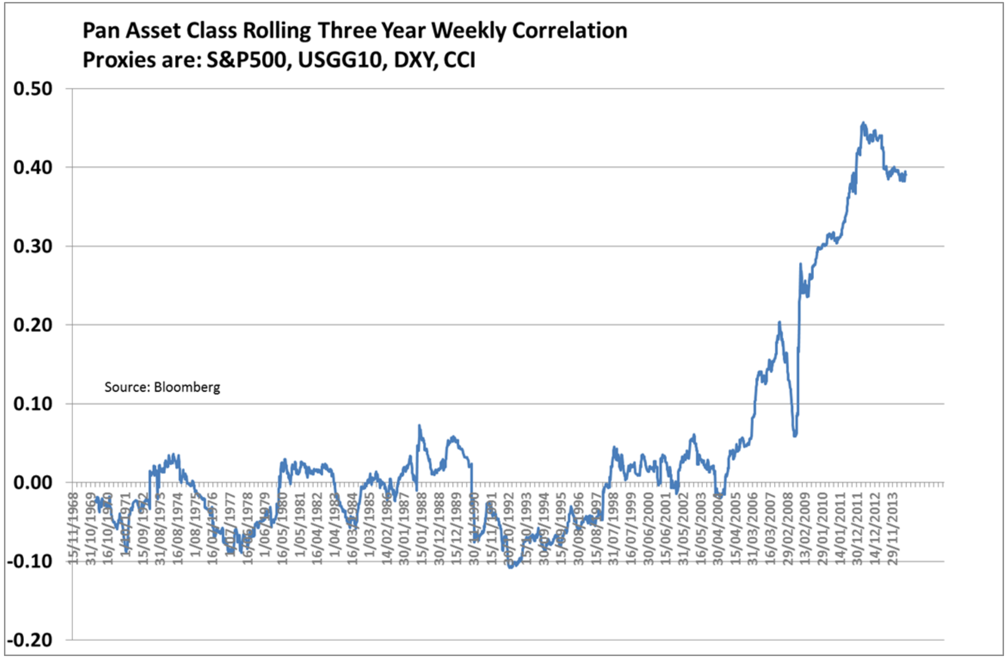


Sources: Standard & Poors, Thomson Reuters, US Federal Reserve, Bloomberg.

…while it worked.

Pan-asset class correlation has been in a secular uptrend since the early 1990s.

This trend is inversely proportional to the efficacy of traditional diversification by risk premia…

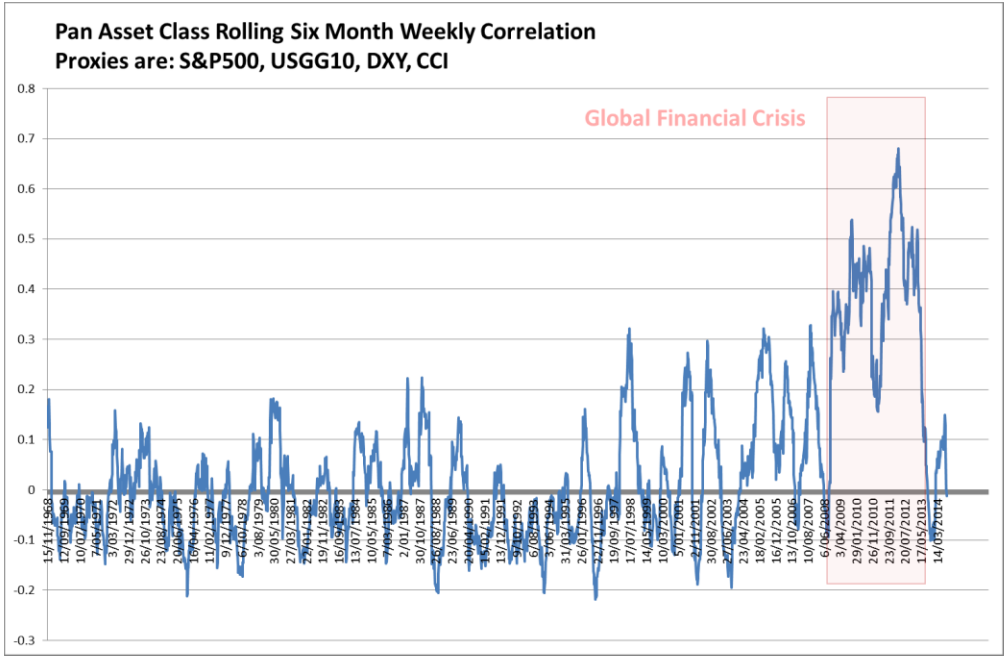


Sources: Standard & Poors, Thomson Reuters, US Federal Reserve, Bloomberg.

...and correlation/diversification is cyclical.

Low correlation suckers us into diversification in benign environments...

...then casts us into the high certainty payoff (cash/short-dated bonds) in stress environments (high correlation).



Sources: Standard & Poors, Thomson Reuters, US Federal Reserve, Bloomberg.

Why am I here?

The last source of true diversification.

Strategies that monetize the change in risk premia.

We pay away a range of risk premia using the payoff asymmetry of long-dated options across all asset classes.

If done correctly we gain limited downside, and very large upside. Profits are delivered often at the time our investors most need it.

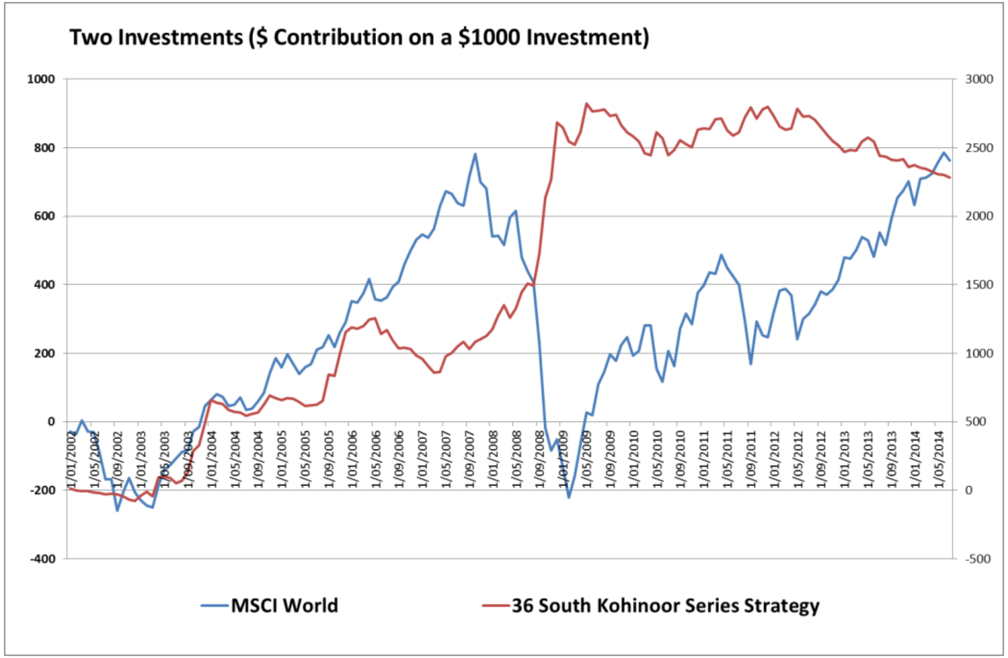
This allows us to:

- **Take advantage of long-term market mis-pricings.**
- **Have positive performance asymmetry.**
- **Limit our downside.**

The 36 South Kohinoor Series strategy laid against the MSCI World index.

An example of a strategy that pays away risk premia, giving positive participation in risk-aversion environments.

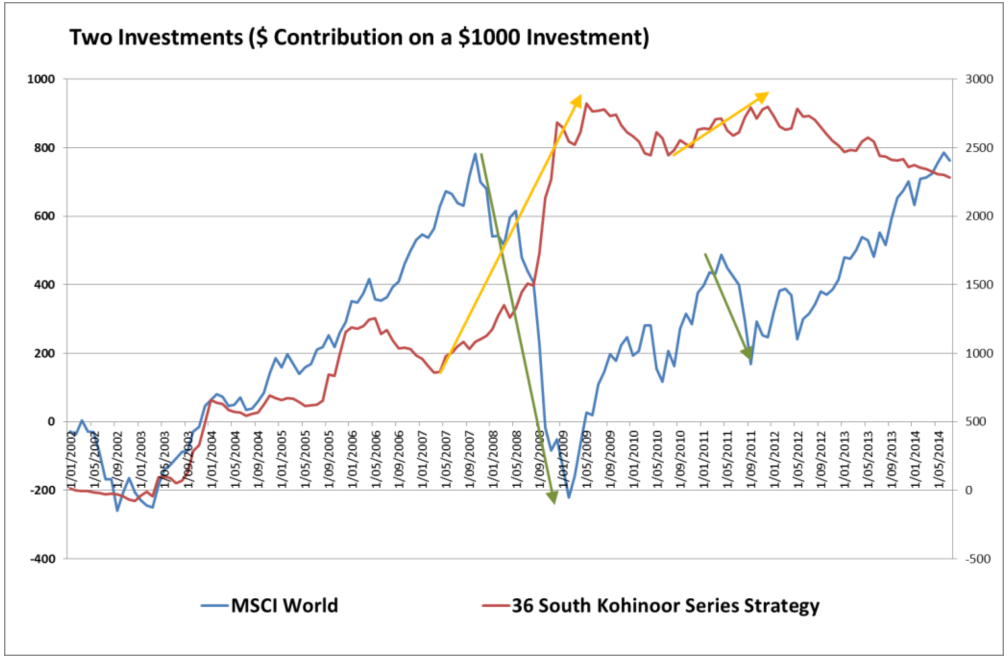
Often can be a negative-carry investment. But historical returns have been positive.



Please note that past performance is not indicative of future performance. Please see the full disclaimer for the Kohinoor Series strategy at the end of this document.

Sources: MSCI, Bloomberg, 36 South

Negative correlation - when you want it.

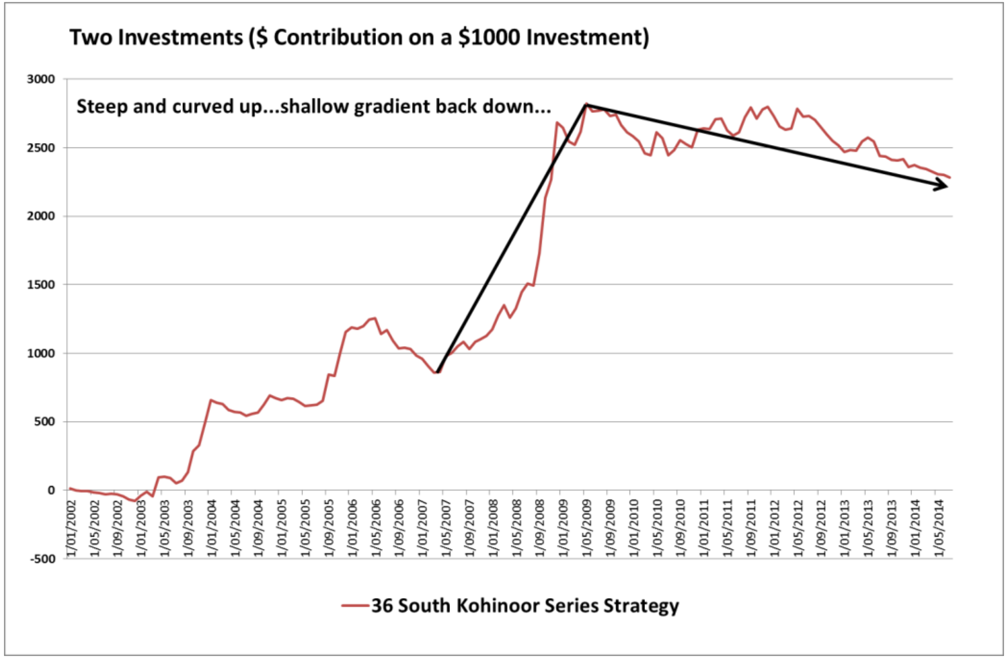


Sources: MSCI, Bloomberg, 36 South

Asymmetrical payoff.

Doesn't drain too much portfolio performance in a benign environment.

Useful positive asymmetry in a risk-aversion environments.



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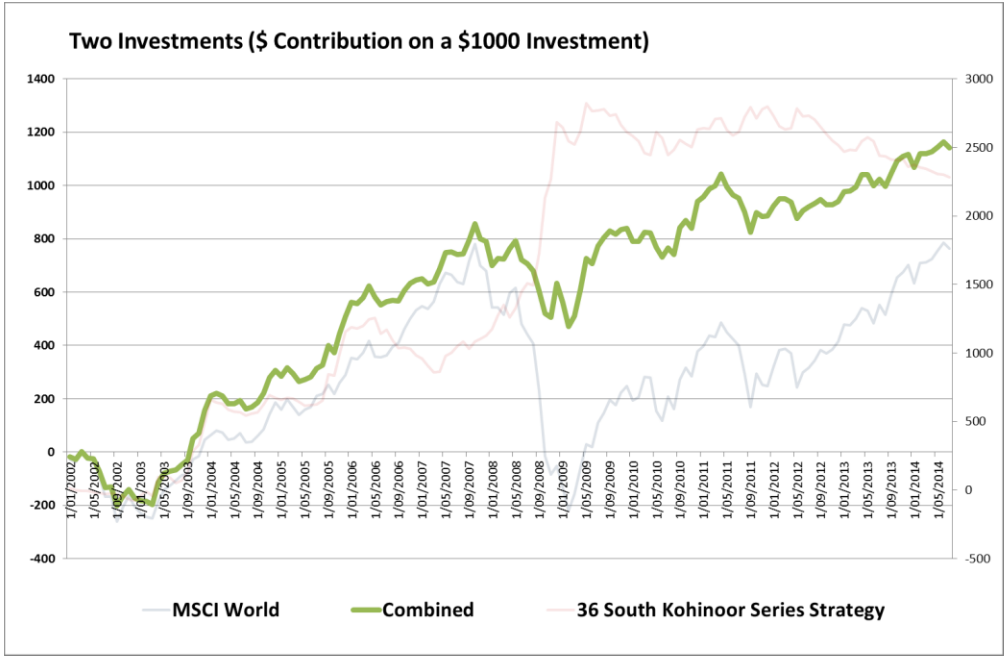
Sources: MSCI, Bloomberg, 36 South

Combined: (25% Kohinoor)

Reduced draw-downs, and more cash to invest when risk premia are worth investing in.



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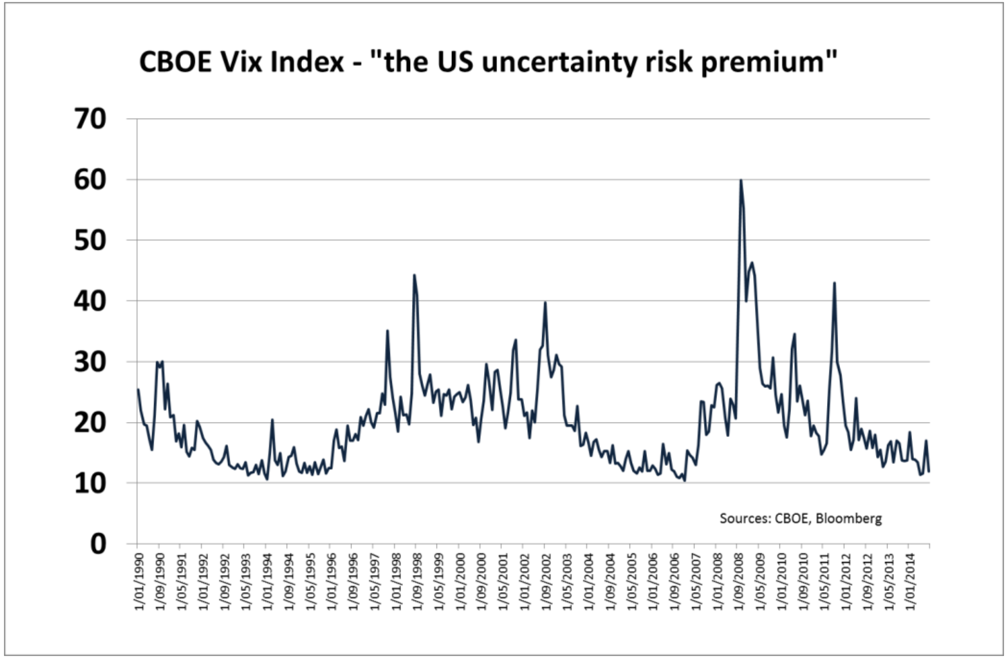
Sources: MSCI, Bloomberg, 36 South

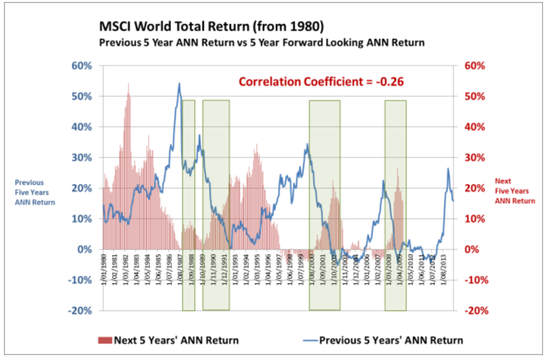
So where are we now?

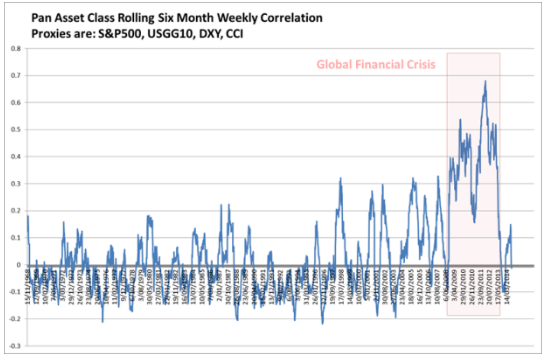
Is the risk premium investors pay for uncertainty, historically narrow, or wide?

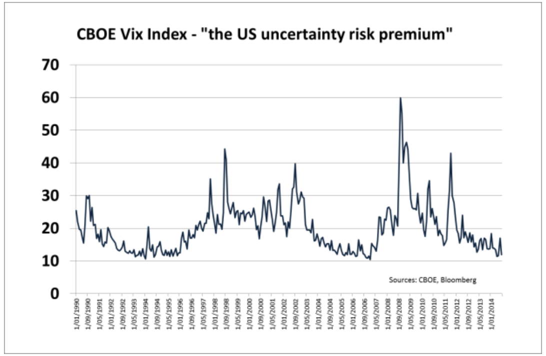
Is it mean reverting?

What does that mean?









I'm not giving you a forecast.

But from a probabilistic perspective?

Sources: MSCI, Standard & Poors, CBOE, US Federal Reserve, Thomson Reuters, Bloomberg

Recent technical developments...

MSCI World index – trend line break...

Sources: MSCI, Bloomberg

Recent technical developments...

Continuous Commodity Index – trend line break...

Sources: CRB, Thomson Reuters, Bloomberg

Recent technical developments...

US Dollar Index – trend line break...

Sources: US Federal Reserve, Bloomberg

Regulatory Information

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Regulatory Information

Kohinoor Series strategy

The track record as displayed here is a combination of three track records with strategy inception in January 2002. There is no material difference between the trading strategies in these three funds. The Kohinoor Series One Fund launched in January 2002. This was a NZD denominated fund and was managed by 36 South Investment Managers Limited who were not required to register as a CPO with the NFA as there were no US investors in the pool. In the displayed track record Kohinoor Series One Fund's NZD returns from January 2002 to July 2005 have been converted to USD, and adjusted to match the Kohinoor Series Two Limited and Kohinoor Series Three fee and tax structure. The Kohinoor Series One Fund charged management fees of 1% and performance fees of 10% and paid tax of 33% while Kohinoor Series Two Limited and Kohinoor Series Three funds charge(d) management fee of 1.75% and performance fee of 20%. Further explanation of the methodology is available on request. Although the Kohinoor Series One performance is based upon actual results, due to these adjustments, the results are considered hypothetical and as such, the following disclaimer is provided: these results are based on simulated or hypothetical performance results that have certain inherent limitations. Unlike the results shown in an actual performance record, these results do not represent actual trading. Also, because these trades have not actually been executed, these results may have under-or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity. Simulated or hypothetical trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. No representation is being made that any account will or is likely to achieve profits or losses similar to these being shown. The Kohinoor Series One Fund continued to run for New Zealand based investors until it was closed in March 2008. The August 2005 to March 2008 performance is available on request, it is not displayed here as we are trying to represent a continuous investment in the Kohinoor Series strategy.

Kohinoor Series Two Fund Limited ran from August 2005 to February 2011. This was a USD denominated fund with USD and GBP share classes (GBP share class was launched in November 2009). These returns are displayed and have not been adjusted. The Kohinoor Series Two Fund Limited was managed by 36 South Investment Managers Limited who registered voluntarily with the NFA as a CTA in August 2006 as the NZ Securities Commission required alternative investment managers in New Zealand to register with a body they recognized in the absence of an equivalent regulatory body for alternative managers in New Zealand. 36 South Investment Managers Limited were exempt from registering as a CPO under CFTC Exemption 4.13 (a)4. The Kohinoor Series Two Fund Limited was as an exempt pool under exemption 4.13(a)(4) in 2010 – it was not required to register before this time as it did not have any US investors. On 28 February 2011 the Fund was closed and its portfolio was transferred in specie to begin the Kohinoor Series Three Fund on 1 March 2011. (PTO)

Regulatory Information

Kohinoor Series strategy (continued)

From March 2011 Kohinoor Series Three Fund returns reflect returns to an investor in the USD share class. This is a EUR denominated fund with EUR, USD and GBP share classes (all launched on 1st March 2011). The Kohinoor Series Three Fund is managed by 36 South Investment Managers (Ireland) Limited following the closure of 36 South Investment Managers Limited. 36 South Investment Managers (Ireland) Limited registered with the NFA as a CPO on 1 January 2013. The portfolio management of the Fund has been delegated to 36 South Capital Advisors LLP who act as its sub-investment manager.