

A static or an adaptive portfolio?

The fatal attraction of a beautiful theory

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It shouldn't come as a surprise that a static asset allocation in an uncertain world would lead to unstable outcomes. But if we want or need more predictable results maybe it's time to adapt our approach. An adaptive approach to asset allocation could lead to more stable results, but it requires revisiting some traditional views, more work and additional governance.

Is it time to adapt?

Many pension schemes have suffered unstable outcomes – volatile funding levels and ballooning deficits. With static asset allocations in an uncertain and complex world maybe this is to be expected.

Why then do so many schemes hold static portfolios? Often the static asset allocation is set using statistical asset-liability models. These models are typically based on long-term assumptions that humans all act rationally and that booms and busts cannot happen.

If you want, or need, more predictable solvency results in this uncertain world, maybe it's time to adapt to a reality that recognises man is irrational and that booms and busts do occur.

A portfolio that is robust to a range of economic conditions and resilient to market stresses will deliver more predictable results. This needs a different approach to portfolio construction; a scenario approach that adapts over time to reflect the current market conditions and the outlook ahead.

A beautiful theory

To decide on an appropriate asset mix, many pension schemes use an asset-liability model. The 'optimal' asset mix typically is translated into a static long-term portfolio represented by market indices. These asset-liability models are founded on neo-classical economics.

This particular theory offers straight forward solutions to complex problems and it has become the foundation of public policy, central banking policy and long-term investing.

We must, however, keep in mind that any theory or model is only as strong as its weakest assumption. Unfortunately, it is clear that several of the foundations that neo-classical theory is built upon, do not hold.

A crucial assumption is that all of us are rational and make informed decisions without involving emotions or asking other people.

The world economy is made up of over seven billion individuals interacting and making the world unpredictable. There are no such things as long-term stable equilibriums as predicted by the neo-classical theory. At best we can observe different economic regimes emerging and disappearing over time.

Why make strategic decisions on the portfolio mix based on a model whose basic assumptions do not hold?

An uncomfortable reality

If we accept that reality is not as easy as the model suggests, we need to accept that traditional views that are based on the neo-classical theory may need to be revised. There is no such thing as an optimal long-term asset mix that an investor can hold without having a market view. Actually, holding a static asset allocation is the consequence of a specific and very extreme market view.

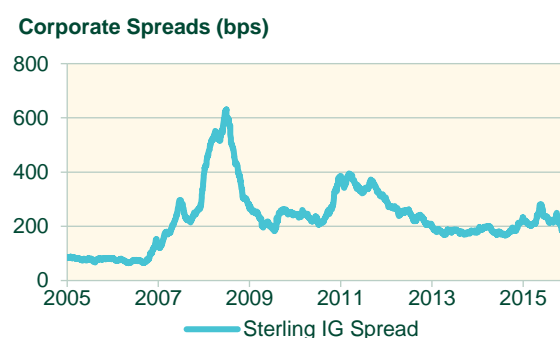
The neo-classical theory offers a false sense of security and will frequently be caught off-guard by the harsh consequences of the economic reality. So you may think that it is better to prepare for the situation when something bad could happen.

From a logical perspective it makes sense to embrace uncertainty, and adapt the way we invest. Taking the step from thought to action is not easy from an emotional perspective. As humans we prefer simplifications and we tend to emotionally favour the (false) illusion of control rather than accepting that we are living in a complex uncertain world that is largely unpredictable.

Return is compensation for risk

Theory tells us that investors are compensated with an additional return for bearing risk. But the compensation that investors require for taking risk will vary over time. As a consequence investors must continuously reassess the risk-reward trade-off of different investments.

Credit risk is a good illustration of how the rewards for taking risk evolve over time. In 2006 credit spreads, the reward for taking risk, were less than one percent. In 2008 credit spreads ballooned causing dramatic falls in the value of corporate bonds.



Source: Bloomberg. Period from 03/10/2005 to 03/10/2016.

This simple example illustrates the necessity for a more nimble approach where the investor invests in assets or strategies when the compensation for risk is sufficiently high in the near- or mid-term future. The same holds for most other types of investments. In other words, there is no static long-term optimal asset mix.

Expect the unexpected – the power of scenario thinking

The use of a scenario-based approach to support strategic decision making is common among large non-financial corporates. Experience shows that working with scenarios naturally introduces more diversity of thought into the decision process, and it prepares management to better detect signs of a changing world and to act pro-actively.

A powerful tool at our disposal is asking simple questions starting with “What if...?”

To address these questions in a structured way, we could begin to paint a number of pictures of plausible futures, or regimes that could emerge, and analyse how these impact our investment returns. This is called a scenario approach. A multi-disciplinary mind-set and practical investment experience is needed to turn scenarios into a meaningful decision tool to adaptively set the asset allocation.

To derive the consequence of a scenario on the financial markets we go back to the first principles of what is driving the price of financial assets. This relies on the causal economic relationship instead of statistical correlations. We believe the two main economic drivers of financial asset prices are growth (of the economy) and inflation. We then need to be aware that market dynamics are largely driven by investor behaviour.

What if growth surprises?

In this scenario, there is strong economic growth with inflation under control. Company profits grow and drive up share prices. With more confidence, interest rates can increase too. This is great for pension schemes: the assets rise, the liabilities fall and the sponsor covenant strengthens. This is generally the central assumption most pension funds use in their asset-liability models.

What if we enter a Japanese Scenario?

In this case, economic growth is weak along with very low inflation. For equity-like assets, returns will be low and volatile. Bond yields will be zero or even negative. Here most pension schemes will struggle to meet their existing recovery plans and sponsors will have difficulties offering additional contributions.

What if the debt mountain triggers a recession?

With over \$200 trillion of global debt and inflated asset prices, the next recession might not be that far away. In this world asset prices and interest rates will fall together, creating a perfect storm for pension schemes. In addition, the businesses of many sponsors will struggle, and maybe even fail, potentially creating a long line of pension schemes seeking the help of the Pension Protection Fund.

Understanding how your scheme is impacted by specific scenarios allows you to create a portfolio that is more robust across the range of possible scenarios. The portfolio can then be adapted over time depending how likely you believe each scenario to be.

Think the unthinkable – how much pain can you bear?

Using scenario thinking results in a more diverse investment strategy, but it is important to be aware that diversity is not insurance against investment losses. Since the world is complex, uncertain and unpredictable we must also ask ourselves what the consequences are if we are wrong.

Consequences that cause severe pain for the scheme and ultimately could bring down the sponsor should be avoided. In other words, we need to consider stress scenarios. These are very unlikely to occur, but if they do they will have a severe impact on the scheme's solvency. The stress scenarios try to capture such outcomes and

it is a more diverse method compared to the backward looking statistical risk measures.

What might happen in a stress scenario?

One option is to consider an event that would place extreme stress on a pension scheme. This could be a large fall in asset prices (e.g. consistent with equities falling by over 20%) and an increase in liabilities (e.g. long-term interest rates falling by about 1%).

Another option could be events considered as appropriate from time-to-time (e.g. European crisis, Brexit, stagflation, etc.). The advantage of using stress events is that you do not need to rely on assumptions about the statistical properties between the major asset classes when examining extreme risk.

From the financial crisis in 2008, it was clear that backward looking statistical risk measures were not able to capture extreme risks. We were told that this was a one-in-a-million event. Was it really? Or is it more likely that the models couldn't cope with extreme events?

We only have financial market observations from the last 100 year or so. So maybe we shouldn't be surprised that backward-looking models find it difficult to assess such extreme risks.

Due to the lack of observations, statistical estimates of extreme risk will inevitably be driven by assumptions. Adding the knowledge that extreme risk is not constant over time makes statistical attempts to estimate such risks even more futile.

An adaptive portfolio

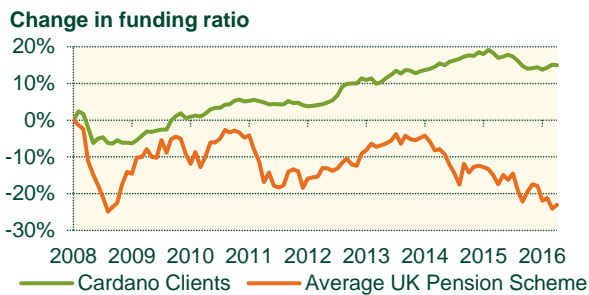
Holding a static long-term portfolio is to place all your bets on a theory whose assumptions do not hold in practice. The alternative is to construct an adaptive portfolio that is robust across economic scenarios which evolve over time. This means that the long-term becomes a combination of shorter-term investment portfolios.

To make sure that the current portfolio is resilient, it has to pass the stress scenarios without experiencing unacceptable losses.

This is not a perfect approach but it may be better at being approximately right, rather than being precisely wrong. At each step of the process you need to make assessments and informed

decisions. This requires a more proactive and nimble approach.

Is the extra work and governance worth it? We think so. This is something we have applied since 2007 and in our experience it is possible to deliver predictable results in an uncertain world.



Source: Cardano, 30/06/2008 to 30/09/2016. Performance shown is for our clients following our fiduciary management approach with a full liability benchmark and net of all Cardano's and underlying managers' fees. *Due to the lack of published information, average pension scheme performance is estimated based on information contained in the Purple Book published by The Pensions Regulator and the Pensions Protected Fund using market index returns and implied hedge ratios based on the bond asset allocation only. No allowance for deficit repair contributions have been made. The liability benchmarks in the calculation of relative returns are taken from the composite of Cardano clients. Past investment performance is not a reliable indicator of future results, no guarantees of future performance are provided.

Time to adapt

We wish that we could offer a fool proof answer accompanied by check lists and process recommendations. But the world is what it is despite our attempts to capture it with beautiful theories, therefore we recommend:

- Acknowledge that behavioural biases and group dynamics are key to all aspects of investing. The world economy is nothing more than over seven billion humans interacting.
- Don't rely on one theory alone. Always ask – what if we're wrong?
- Apply common sense and only take risks that are expected to be rewarded within a

reasonable time frame. Hedge unintended financial risks and avoid static risk exposures.

We believe the traditional approach of a static asset mix is broken and investors should use scenarios as the main tool in the strategic decision process. This will have implications for day-to-day implementation as this approach requires greater investment skills, pro-active and nimble management and the governance that this entails.

At the end of the day, each of us can make a choice. We can choose to stay with the comfort of a stable asset mix and accept the uncertain outcomes or we can adapt over time to achieve predictable results in an uncertain world.

About the authors

- Tony Baily looks after a number of Cardano's clients and is involved in managing the relationship and providing advice on all aspects of their investment strategy
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