

Here is a description of investment principles that I employ in constructing our investment portfolios.

Diversification

In 1952, Markowitz won a Nobel Prize for his study showing (among other things) that **diversification reduces risk**.

Diversification is the name used for the old adage, “don’t have all of your eggs in one basket”. There are four basic asset classes that you can include in your portfolio. These are shares, property, fixed interest and cash. When interest rates are rising, share prices are often falling, so one part of your diversified portfolio might be losing value while the other part might be gaining value.

By including each of these asset classes in your investment portfolio, you will reduce risk and volatility. Studies have shown that a diversified portfolio can produce higher returns with less volatility than you would have received if you invested only in any of the component parts.¹

Predicting the Future

In 1965 Samuelson won a Nobel Prize for his work and one of his studies showed that Market prices are the best estimates of value, **price changes follow random patterns and future share prices are unpredictable**.

I have never met anyone who can predict the future.

If someone advises you to invest in a particular company share, they are saying to you that the value of this company will increase more than the value of other companies. Effectively they are predicting the future. For every person that buys a company share, someone is selling it.

Nobody knows when markets will go up and when they will go down. Do you know what the share market will do tomorrow or next week?

Investment Risk and Return

In 1966 Fama, published a study known as the *Efficient Market Hypothesis*.

A fundamental principle of investment is that risk and return are related. We regard an investment in government bonds as a risk free investment (on the basis that the government will not default). When we invest in shares, we are taking more risk and investors expect to be rewarded with a higher return as compensation for higher risk. This higher return over the risk free return is called the market premium.

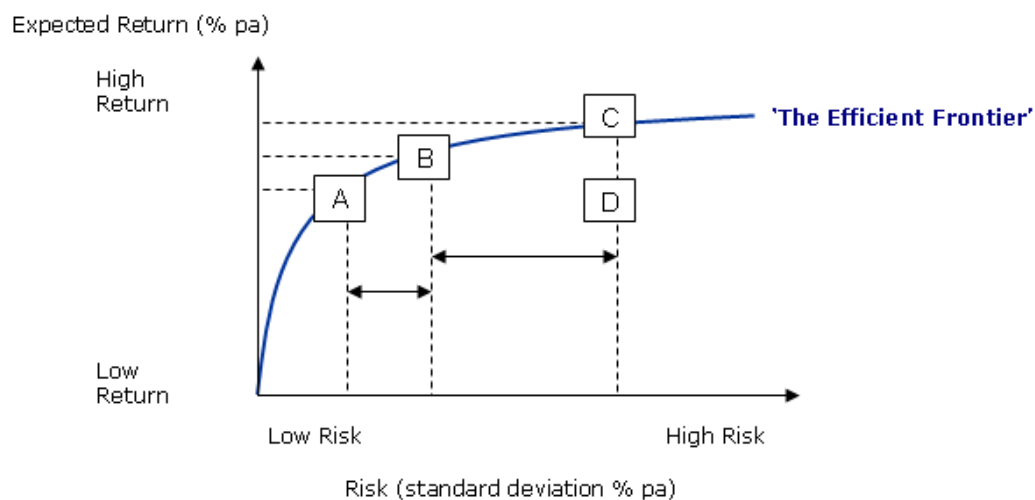
By measuring risk, we can quantify the return we expect. How you expose your investment portfolio to risk in the different asset classes is the most critical decision

¹ The rewards of multiple-asset-class investing, Roger C Gibson, *Journal of Financial Planning*; Mar 1999; 12, 3; ABI/INFORM Global

you make in determining the return you can expect. If you invest in the whole market using, for example an index fund, then you will expect the market rate of return. The only way you can achieve a higher return is to accept a higher risk.

The key to an efficient investment portfolio is in making sure that you are rewarded for the risk that you take. Out of 20 investment portfolios that I have recently measured (from 20 different advisers), I found that 19 of them were receiving less than the market rate of return but were taking higher than market risk. These were inefficient portfolios because they were taking unrewarded risk. The following diagram illustrates this point.

Managing risk is the key to investment success. You can't manage risk if you don't measure it.



- Portfolios A, B and C are efficient because they do not have any unrewarded risk.
- Note that portfolio C is taking substantially more risk than A but the increase in return is relatively modest.
- Here is the point. Portfolio D is taking the same risk as C but has the same return as A. Portfolio D is inefficient because it has unrewarded risk.

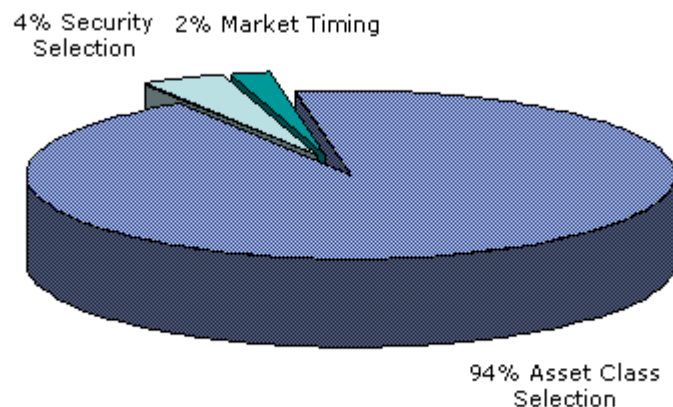
Determinants of Portfolio Performance

In 1990, Brinson, Randolph & Beebower published a landmark study, *Determinants of Portfolio Performance*.² Over a 10 year period they studied 91 US Pension Funds with diverse portfolios.

They found that the market timing decisions (whether to be in or out of the market) accounted for 2% of the variance in returns, the stock selection decisions (which shares to buy or sell) accounted for 4% of the variance in returns and the remaining

² Source: Study of 91 large pension plans over 10-year period. Brinson, Randolph & Beebower "Determinants of Portfolio Performance" Financial Analysts Journal, Jul-Aug 1986 and "Revisiting Determinants of Portfolio Performance: An Update" 1990.

94% of the variance in returns came from the asset allocation decisions (how much is in different classes of asset).



Source of the contribution to the variance in returns of diversified investment portfolios.

It is interesting to observe that the global investment industry spends most of its time, money and energy in market timing and stock selection knowing that this only accounts for 6% of the variance in returns. The logical approach is to accept that nobody can predict the future and spending most of your time on the decisions that are proven to contribute the least to the investment return, does not make sense. Better to be expert at asset allocation because this is where the most variance in return is produced.

An Intelligent Framework for Constructing Investment Portfolios

In 1992 Fama & French produced their landmark paper on the *Multifactor asset pricing model & value effect*.³ They found that three factors explained most of the return of stock portfolios.

The Market Factor

Stocks are riskier than government bonds therefore investing in stocks will deliver a higher return. The stockmarket has an expected premium over government bonds.

The Size Factor

Small companies are riskier than large companies and therefore have higher expected returns (Banz 1981).

The Book to Market Factor⁴

³ Fama, Eugene F. and Kenneth R. French, 1992. The cross-section of expected stock returns. *Journal of Finance* 47 (June): 427-465

⁴ The "BtM" is the ratio of a firm's book value of equity to its market value of equity. Book value of equity is determined by the firm's accountants using historic cost information. Market value of equity is determined by buyers and sellers of the share using current information. A high BtM ratio indicates that the book value per share is high relative to the share price.

Stocks with a high BtM ratio are generally “distressed” stocks and therefore carry higher risk and this means higher expected returns. These stocks are also referred to as “value” stocks.

Recent research has identified a fourth factor.

The Profitability Factor⁵

Stocks with higher profitability tend to have higher returns than stocks with lower profitability.

This leads to a simple view that to achieve above market returns in a stock portfolio;

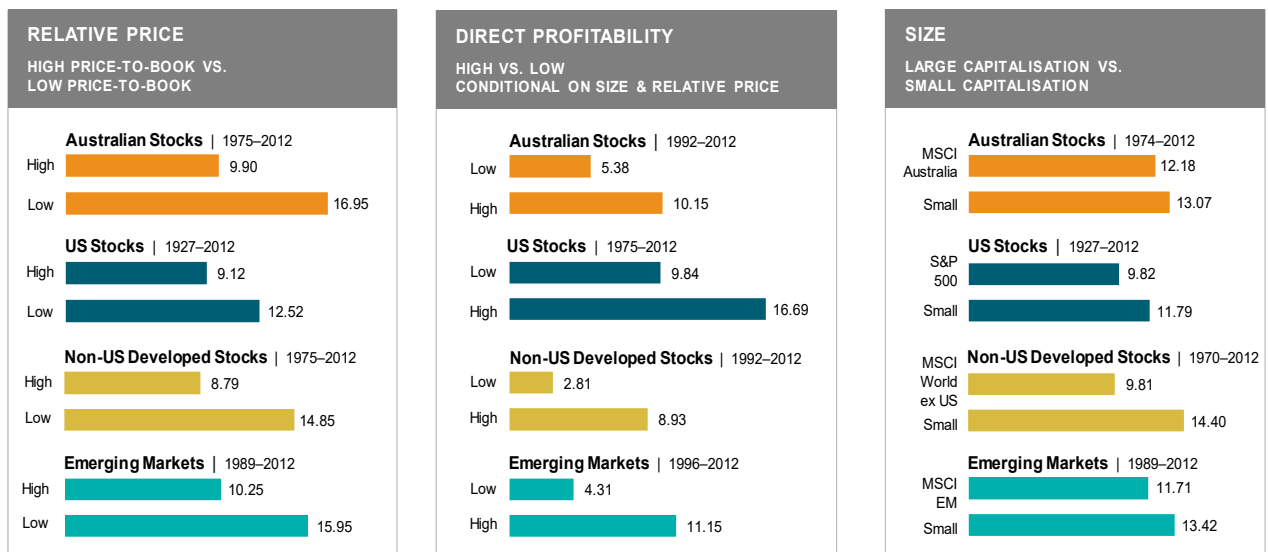
- you could ensure the market rate of return with an index investment; and
- then add to that return with a tilt to small company, value stocks and higher profitable stocks.

The following table illustrates how value, small capitalization and higher profitable stocks have outperformed the markets over time.



Dimensions of Expected Returns

Illustrative Global Index Performance



Be persistent, pervasive and robust



All figures represent annualised compound returns (%) in US dollars with the exception of the Australian Stock returns, which are in AUD. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not indicative of future performance. Australian high and low price-to-book research index data provided by Fama/French. Australian small index data compiled by Dimensional from Bloomberg/ARC/CRF securities data. US high and low price-to-book, and US small research index data provided by Fama/French. The S&P data are provided by Standard & Poor's Index Services Group. Non-US Developed high and low price-to-book data provided by Fama/French from Bloomberg and MSCI securities data. Non-US Developed small data compiled by Dimensional from Bloomberg, Style Research, London Business School, and Nomura Securities data. MSCI Australia Index, MSCI World ex US Index and MSCI EM Index are gross of foreign withholding taxes on dividends; copyright MSCI 2013, all rights reserved. Emerging Markets high and low price-to-book, and Emerging markets small data simulated by Fama/French from countries in the IFC investable universe; simulations are free-float weighted both within each country and across all countries. Profitability data compiled by Dimensional from CRSP, Compustat, and Bloomberg. Methodology used for computing profitability premiums: Dimensional controls for relative price (B/M) and size (market cap) when computing the annualised compound returns for high and low profitability stocks in US and Non-US Developed markets and controls only for relative price in emerging markets and the Australian market. Profitability is measured as operating income before depreciation and amortisation minus interest expense scaled by book. Asset class filters were applied to data retroactively, rebalanced annually, and with the benefit of hindsight. Asset class returns are not representative of indices or actual portfolios, and do not reflect costs and fees associated with an actual investment. Actual returns may be lower. Eugene F. Fama and Kenneth R. French (Fama/French) are affiliated with Dimensional.

⁵ A Five Factor Asset Pricing Model, Fama & French, May 2014

Fama & French added a further two factors to their pricing model to account for the fixed interest effect.

The Maturity Factor - Longer-term fixed interest investments are riskier than shorter-term fixed interest investments.

The Default Factor - Fixed interest investments of lower credit quality are riskier than fixed interest investments of higher credit quality.

Consequently, fixed interest is best kept short in maturity and high in credit quality, so the risk exposure of the portfolio can be increased in the equity markets, where expected returns are higher.

Asset Class Investing

As we learned earlier, decisions about which stocks to buy or sell or whether to get into or out of markets, contribute little to the variance in returns but the asset allocation decision has a major impact. This is why it is important to understand the risk and returns of different asset classes and to use this data to model and construct investment portfolios that efficiently capture the returns of these asset classes.

A number of fund managers provide managed funds that are designed to capture the returns of classes of assets. For example, you can invest in funds that capture the returns of small company stocks in the Australian market. These funds don't decide which stocks they should buy or sell (as active managers do), they simply replicate the effect of all small stocks in the market and you can capture the return of small company stocks as an asset class. Because these fund managers are not actively trading, the transaction costs and taxation implications are minimised, and the cost of funds management is reduced.

By constructing portfolios based on capturing the returns of different asset classes you can build more efficient portfolios and manage the risk and the return. You can also reduce the cost of the portfolio.

The alternative is to build actively managed portfolios where advisers and fund managers are constantly trading and attempting to predict the next winning investment or timing the market. Our observation is that these are generally inefficient portfolios that tend to under-perform the market and often take higher than market risk. They are also generally high cost portfolios, particularly after taxation.

Constructing an Asset Class Portfolio

We recommend that your portfolio be aligned with the "Asset Class Investing" approach. We believe that adopting such an approach provides the potential to achieve a superior long-term risk-adjusted return. In fact, we have spent extensive time consulting with leading financial economists and academics to ensure that our recommended portfolios are robust and built on proven methodologies.

Our key investment beliefs are:

- Investing is not speculating.
- Financial markets are efficient.
- Portfolio Structure (Asset Allocation) explains performance.

- Diversification is essential.
- Risk and return are closely related.
- We focus on the known sources of risk and return.
- Costs and taxes matter.
- Discipline is paramount.

The following sections are a brief outline of how our approach is applied within the three major markets of equity, property and debt.

Equity Exposure (Growth)

Where an investor is seeking additional return over and above the market rate of return, then additional risk (in the form of an increased exposure to small and value companies) is required. Additionally, a bias towards companies with higher profitability will add to returns. Research also implies that more commonly accepted ways in which to increase returns, such as market timing and security selection, have minimal effect on portfolio performance over extended periods.

Exposure to these factors potentially increases return, with the underlying risk being managed by broader diversification. We recommend the following mix of large, small and value sub-asset classes within the Australian and international equity component of your portfolio:

- Large Companies – 40%.
- Small Companies – 20%.
- Value Companies – 40%.

In addition, we recommend a portion of your international equity exposure be invested in emerging markets. Our research shows that emerging market stocks have higher expected returns than similar “developed market” stocks (albeit with higher risk). Therefore, including emerging market investments in a portfolio aims to improve the portfolio’s risk / return characteristics.

Property Exposure (Growth)

Research demonstrates that listed property (also known as Real Estate Investment Trusts, REITs) is a separate asset class distinct from fixed interest assets or equity assets. Returns from REITs come from two sources, income from rents and returns from capital growth, property development and property management.

The stream of rental payments is similar to a fixed income investment, while the potential for capital growth is similar to an equity investment. Over time, the proportion of the return generated by each source may vary, but given the potential high volatility in the REIT sector, it is prudent to consider the sector as a growth asset. Historically, REITs have displayed moderate correlations to both equities and fixed interest, thus adding a layer of investment diversification in a portfolio.

We believe that your portfolio should have exposure to both Australian and international property securities. While Australian and international property have similar return characteristics, they may have low correlation with each other, which improves the diversification benefits.

Debt Exposure (Defensive)

Cash and Interest Bearing Securities (Defensive)

The defensive component of your portfolio includes interest bearing securities and cash investments. These asset classes are most likely to offset volatility in your overall portfolio. We see this as the main role of cash and interest bearing investments.

Research on the role defensive assets play in increasing the overall return of an investment portfolio shows us that in order to increase returns, a disproportionately higher level of risk needs to be accepted. Unfortunately, this higher risk does not necessarily translate into improved portfolio performance when compared to the expected long-term returns from equities. As such, we are very selective about the cash and interest bearing investments used to form the defensive part of the portfolio.

When considering defensive assets, we aim to optimise the risk-adjusted return of the underlying assets by ensuring that the portfolio is adequately rewarded for the primary dimensions of interest bearing securities risk, which are:

- 'Credit Risk', which involves investing in high credit quality securities. The further you drift from highly rated securities, the greater the investment risk to your portfolio.
- 'Duration Risk', which looks at the relative maturity date of the security (e.g. the longer the maturity date, the higher the volatility of the security).

The solutions we have selected for your portfolio accurately and effectively manage the dual dimensions of interest bearing securities risk. In addition, the solutions aim to minimise the overall volatility within your portfolio.