Forecasting long-term returns
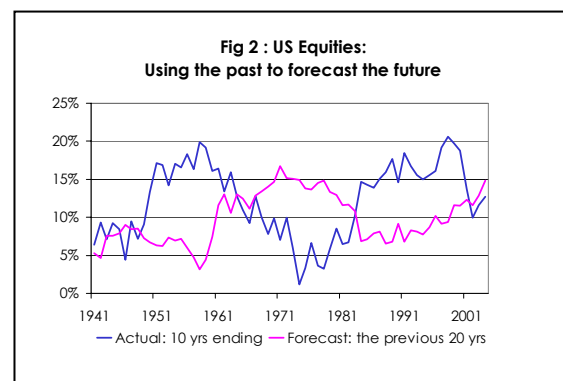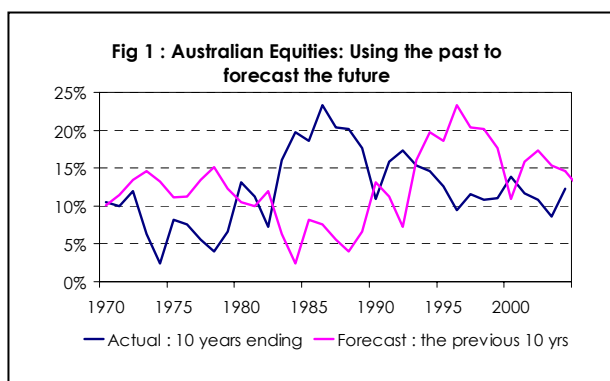
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The art of financial markets forecasting has a well earned reputation for unreliability. Nonetheless it is not possible to carry out asset allocation without some form of forecast, be it formal or implied. Even the statements, 'equities outperform in the long term' or 'equities are more risky than bonds' have forecasts embedded in them. Given this situation it is better to formally approach the task of forecasting returns, and to do so in full knowledge of the reliability or otherwise of the techniques used.

Academics and the efficient market

The state of the art with academics goes along these following lines…. Markets are efficient which means that assets with higher levels of risk will have higher expected returns. The amount of the return is estimated by adding the risk free rate (normally either the bond rate or the cash rate) to a premium to reflect the risk of the asset class. Because that risk premium cannot be directly measured ahead of time, the best estimate is the historical difference in returns between, say, equities and cash for the equity risk premium, or property and cash for the property risk premium.

So, if over the past 20 years equities have returned 10% more than bonds we assume that over the next, say, 10 years equities will again return bonds plus 10%.

Unfortunately, even using quite long-term historical data, say 10 to 30 years, this approach has proved to be stunningly unsuccessful. Over these types of timeframes this sort of methodology tends to produce the highest forecast returns at times when the returns are about to be the lowest and vice versa. This is clearly illustrated in the charts below.

Fig 1 : Australian Equities: Using the past to forecast the future
— Actual : 10 years ending — Forecast : the previous 10 yrs

Fig 2 : US Equities: Using the past to forecast the future
— Actual: 10 yrs ending — Forecast: the previous 20 yrs

Chasing past returns

In the so-called real world few practitioners, that is investors, fund managers and financial planners, believe in efficient markets but still behave as if they do. It's called chasing past returns, which is really just a less sophisticated version of the academic approach. The idea goes something like this; short term market moves are

notoriously hard to predict, even the academics say that you can't pick markets, so we might as well invest in with the latest top performing assets, and stay away from the poorly performing assets.

If you are in the business of managing other people's money this is quite a safe strategy. You will rarely be fired for being invested in assets that have been hot and turn sour (who could have known?) whereas if you invest in assets that have performed poorly in the past and continue to perform poorly in the future (how could you be so stupid???) client retention becomes difficult to say the least.

However, while chasing past returns is a strategy that may be safe from a business perspective, it is any thing but safe from an investment perspective. As many planners and investors have found, it is a reliable recipe for producing terrible returns.

A forward looking approach

A much better approach is to seek to firstly understand what drives returns and to then to sensible forecast those drivers. One such approach is the Occam's Razor methodology developed by John Bogle[1] , named after Sir William of Occam who declared the simplest explanation is generally the best. And this is indeed a simple approach, and all the more powerful because of it.

This approach to forecasting decomposes market returns into three drivers of returns

- Income
- Growth in income
- Effect of changing valuation ratios

The three elements can then be simply added together to produce remarkably reliable long term return forecasts:

Returns = Income + Growth in income +Effect of changing valuation ratios

Or for those that prefer equations: $R = Y + G + V$

Where   Y is the current investment yield, a known quantity; hence no forecasting is required for this input.
          G is the annualized growth in income or earnings for the asset, for

- Property it is growth in rents
- Equities it is growth in Earnings Per Share
- Fixed interest growth is zero, by definition!

          V is the Valuation effect; it is the compound effect of an increase or decline in PE ratios or yields on the value of the asset.

So, for equities, over a one-year period:

V= (PE at end of period / PE now) −1

For example, if PEs rose from 10 to 12 then V = 12/10 -1 = 0.2 or a 20% increase

For longer time periods, we use the compounded growth rate:

V= (PE at end of period / PE now)$^{1/10}$ –1
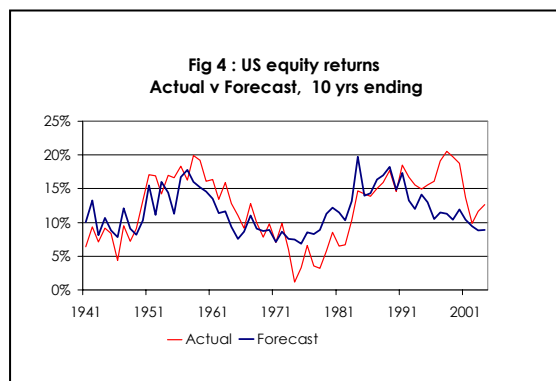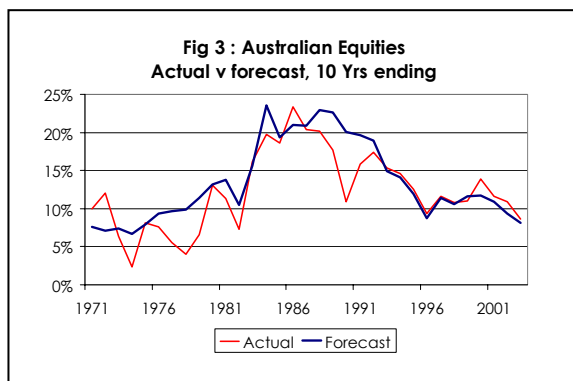
Using the same example over 10 years

V= (12/10)$^{.1}$-1 = 1.0183-1= +1.83%pa

Over long periods, this method has proved to be a remarkably useful forecasting tool because over longer time periods, say 10 years, EPS growth rates become quite predictable and PE and other valuation metrics tend to revert to the mean.

A simple mechanical back test of this methodology can be done using retained earnings as a forecast of real EPS growth and assuming PEs stay at their starting level over rolling 10 year periods. While this is a more simplistic approach than one would use in real time, when back testing it is good practice to keep subjective measures out of any calculations as far as possible.

Nonetheless the track record of this simple device is quite impressive as is shown for the US and Australian equity markets in the charts below. While not perfect by any means, the general pattern is more than useful and a vast improvement on simply using historical returns as a basis for forecasts.

Fig 3 : Australian Equities
Actual v forecast, 10 Yrs ending

Fig 4 : US equity returns
Actual v Forecast, 10 yrs ending

The original Bogle paper is strongly recommended reading for any who are interested in learning more about this method. Once grasped, this basic methodology is simplicity itself, can be used on a large number of assets and is something that every competent planner should fully understand.

Endnote

[1] John Bogle. "Investing in the 1990s: Remembrance of Things Past and Things Yet to Come." *Journal of Portfolio Management*, Spring 1991, pp. 5-14