

Understanding asset prices

Angela Ashton | PortfolioConstruction Forum | 13 November 2013

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If you thought that this year's winners of the Nobel Prize in Economic Sciences were garnering more attention than usual, you would be right. The Nobel Prize's website shows this year's three winners – Eugene Fama, Lars Peter Hansen and Robert Schiller – hold the number 1, 2 and 3 spots on the list of Top 10 Most Popular Economics Science Laureates (yes, there is such a list). John Nash, of "A Beautiful Mind" fame, comes in at number 4 (he won in 1994) and last year's winners (Roth and Shapley) are numbers 8 and 10, respectively.

So why the fuss?

The winners were awarded their prize for "their empirical analysis of asset prices". Predictability of asset returns is one of the most important and interesting questions in financial economics.

For a long time, the idea that new information was quickly incorporated into asset prices meant the general consensus was that asset prices in all asset classes were largely unpredictable (but expected returns were thought to be constant over a longer time period).

In its strict form, this would mean that investment approaches such as fundamental analysis and value investing would be quite futile, as mispricing would generally not occur. All new information would be reflected in prices immediately, leaving only a random walk. Further, rebalancing back to a stated asset allocation would be the best strategy for a multi-asset class fund.

Effectively, the work of this year's winners – seemingly at odds with each other individually – when combined has shed enormous light on asset price predictability. They have shown us that asset prices in the short term are unpredictable, but become more able to be forecast in the longer run. They have also established some knowledge about the cross-section of returns, including size and value. This work has also led to new branches of research, such as behavioural finance.

Fama was involved in a series of studies which helped show prices are random in the short term. [Fama's 1969 work showed that information is quickly integrated into prices, so short-term predictability in markets is very limited.](#) This leads to the idea that it is hard to beat the market in the short term – and so, set the scene for developments such as index funds.

However, in the early 1980s, Schiller showed that the pattern of stock returns over the longer term were quite predictable and were related to ratios such as the Price/Dividend (or

Price/Earnings) ratio. Similar patterns in other asset classes were also shown to hold. [Schiller also showed that, in the long run, stock price volatility is much higher than it should be if people were using discount rates to value stocks. Shiller thought that, perhaps, people use multiple discount rates \(or time varying discount rates, or risk premia\) to value assets.](#)

In 1982, Lars Peter Hansen developed an econometric methodology that could be used to test Shiller's idea. The Generalised Method of Moments (GMM) supported Shiller's conclusions – asset prices fluctuate too much to be reconciled with standard theory involving rational investors and discount rates.

This finding led to a number of new fields of study, including behavioural finance and variations of CAPM which dropped the rational investor assumption.

Fama also conducted important research into differences in returns across different types of assets (as opposed to returns over time). His work on the well-known three factor model showed that small firms and those with low Price/Book ratios had provided superior returns. This work was akin to the work conducted by Schiller and also could perhaps be explained to some degree by behavioural finance theory.

The Nobel Laureate Committee summed it up with this quote:

"We now know that asset prices are very hard to predict over short time horizons, but that they follow movements over longer horizons that, on average, can be forecasted. We also know more about the determinants of the cross-section of returns on different assets. New factors – in particular the book-to-market value and the price-earnings ratio – have been demonstrated to add significantly to the prior understanding of returns based on the standard CAPM. Building on these findings, subsequent research has further investigated how asset prices are fundamentally determined by risk and attitudes toward risk, as well as behavioural factors

One last and entirely irrelevant but interesting fact – the two most common birth dates for Laureates are 21 May and 28 February. (My birthday is 1 March which I suspect means something. Perhaps I was 'this close' (aka Maxwell Smart) to greatness? Or that even being a day late is a bridge too far).

[Read the Committee's abridged paper "Trendspotting in asset markets"](#)

[Read the Committee's full paper "Understanding asset prices"](#)