Beating the market

Shane Whelan reports on the outcome of some potentially profitable research work commissioned by Hibernian Investment Managers.

Irving Fisher (1867–1947) is not popularly remembered for his innovative theory of interest or capital or his contributions to index construction or mathematical modelling in economics. The former professor of economics at Yale is remembered for a remark he made at the monthly meeting of the Purchasing Agents Association at the Builders' Exchange Club on 14 October 1929. 'Stock prices', he said with regrettable timing, 'have reached what looks like a permanently high plateau'.

Fisher was neither the first nor the last economist to wager his professional reputation on the stockmarket. Some do well (eg Ricardo, Keynes), some do badly (eg Merton, Scholes), and most, no doubt, do very much like the rest of us. However, some economists are now claiming that they have a winning system, as noted in an earlier article ('Academics and fund managers bury the hatchet', *The Actuary*, May 2001). Perhaps the most striking claim of an unusually profitable trading strategy, at least as far as the average equity investor is concerned, is made in a working paper by Jacobsen and Bouman. 'Sell in May and go away but buy back by St Leger Day' is one of the nursery rhymes of the stockmarket (possibly of very old vintage, as the St Leger classic horse race has been run every September since 1776 and has been so called since 1778). This old saying, they claim, gives a trading strategy that halves the risk of equity investing while not affecting the rewards.

'Sell in May and go away but buy back by St Leger Day'

The assertion is, at first sight, easily tested. We need just to break down the annual returns of equity markets into the two fractions of a year and look at the results. To make comparisons easy (and this does not affect the results) we break down the returns into the half-years May–October and November–April. Figure 1 does this for 19 of the largest equity markets in the world over the last three decades.

Figure 1 shows that, in every one of the 19 major markets studied over the last 30-odd years, the greater part of the return for the year is concentrated in the November–April period. The effect is very pronounced, with the (unweighted) average for the 19 markets being 10.5% in November–April and just 1.4% in the May–October period. The 19 markets above capture 97% of the total market capitalisation of world equity markets at the present time. MSCI indices with dividends reinvested are available for another 16 (smaller) markets from 1988, and these display a very similar seasonal pattern. In summary, the trading rule works with economic significance in 34 of the 35 markets. The effect cannot be accounted for by a seasonal incidence of risk, as risk – under the usual definition of standard deviation of returns – is similar in both halves of the year.

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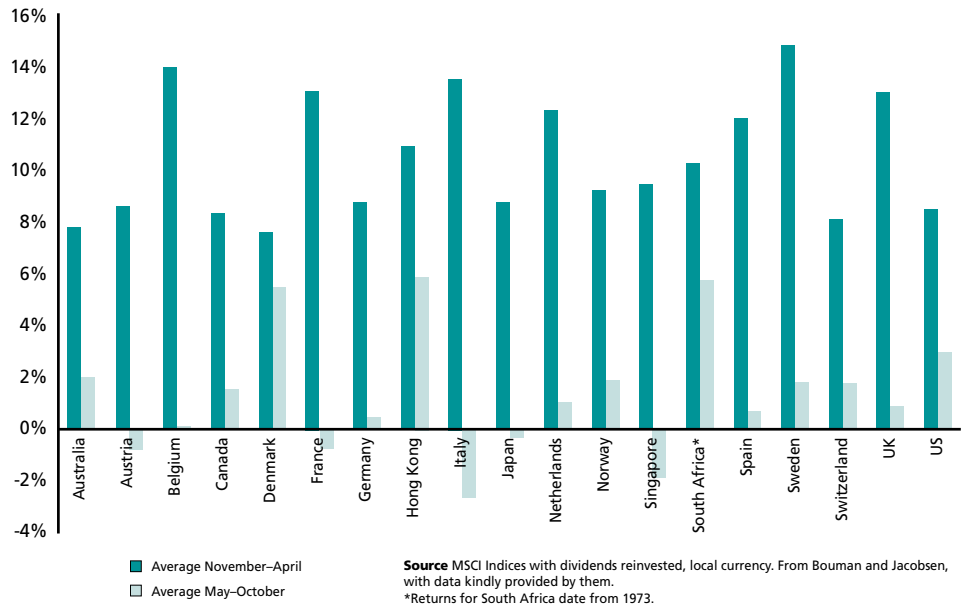
Figure 1 Average returns over two six-month periods, major markets, Jan 1970 to Aug 1998



Source MSCI Indices with dividends reinvested, local currency. From Bouman and Jacobsen, with data kindly provided by them.
*Returns for South Africa date from 1973.

➦ Naturally, these results are statistically significant, with the authors reporting significance at the 1% level for ten countries and at the 10% level for 20 countries. Finally, if in need of more convincing, Bouman and Jacobsen perform a test of their theory by applying it to a database of historic market returns. They trace returns on 11 markets back as far as records allow and report that it was profitable on a risk-adjusted basis in ten out of the 11 markets (failing in Australia) and was statistically significant at the 10% level in the UK market since 1694 (yes – over 300 years) and at the 5% level in the Japanese market since 1920, the Canadian market since 1933, and the Dutch market since 1950.

Still not convinced

Despite the apparent weight of evidence supporting this trading strategy, not everyone is convinced. Sullivan, Timmerman, and White (who claim, incidentally, to have promising technical trading strategies) dismiss the Bouman and Jacobsen strategy as being – albeit unwittingly – data mined. In a paper in the November 2001 issue of the *Journal of Econometrics* they claim that all calendar-based trading strategies can, in fact, be dismissed as such:

> 'We find that although nominal *p*-values of individual calendar rules are extremely significant [ie pointing to a low probability that the result is due to mere chance], once evaluated in the context of the full universe from which such rules were drawn, calendar effects no longer remain significant.' (Abstract)

But that is not the end of the story. In December 2001 a paper was read to the Statistical and Social Inquiry Society of Ireland that resolved the contradictory contentions. Using a virgin data set of market returns (see 'Irish financial history – in brief', *The Actuary*, August 2000), shown to be independent of stockmarkets previously studied, Lucey and Whelan provide an out-of-sample test of the 'sell in May' rule. Applying a battery of tests, Lucey and Whelan conclude that the profits from the trading strategy are indeed statistically significant at about the 6% level.

Fisher's price speculations

Irving Fisher lost more than his reputation with his public speculations on stock prices: he lost his self-earned fortune of about $10m in the stockmarket crash of 1929. Things got so bad that Yale had to buy his house and rent it to him to save him from eviction.

So, are the academics involved in this type of research so convinced of their promising trading strategies that they will pass the Fisher test of putting their money where their mouth is? When this indelicate question is put, one hears a lot about diversification of risks, the indigent academic, and other evasions. However, the 'sell in May' rule is especially suited to the risk-averse investor, as its claim is to remove unrewarding risk. If wrong, the down-side is an opportunity cost – the reward is halved as well as the risks. ❑

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