Yesterday's heroes

The form guide is little help in picking winners

Investors persistently fall for the lure of managers' past performance. JOHN FORREST and DAVID MacKENZIE present more evidence that this is a strategy for attracting disappointing returns.

When selecting an investment product, there is a strong tendency for investors to chase historical performance. On face value, backing past winners seems like an obvious approach to selecting a superior performer. Further, fund managers are always alert for opportunities to advertise favourable performance, implying that these results are likely to be repeated in the future.

Recent evidence from the US suggests that performance-chasing among mutual fund investors tends to result in poorly timed cashflows akin to a buy-high, sell-low strategy. The impact of this poor timing is that US mutual fund investors have generally underperformed the funds in which they invest. In particular, when investment products attract high cash inflow, the difference between product returns and the typical investor's experience can become quite large. Under these conditions, traditional measures of product performance may not necessarily reflect the results attained by most investors.

To assess this phenomenon in the Australian context, we reviewed the Australian equities unit trust products that attracted the most cash inflows over the past eight years. For each product, we compared fund performance with an estimate of the typical investors' experience. Overall, the funds performed very well, while their investors suffered from a consistent performance shortfall. In fact, on average these investors underperformed the ASX All-Ordinaries accumulation index.

US EVIDENCE

Steven Nesbitt in a 1995 article in the Journal of Portfolio Management evaluated market timing behaviour for a range of mutual fund categories in the US over the period from 1984 to 1994. Nesbitt observed that mutual fund cashflows had a strong trend-following nature. He found that these cashflows repeatedly go to asset categories near their performance peaks, and then leave quickly after returns level off or fall.

Nesbitt assessed investor performance by calculating dollar-weighted returns across each mutual fund category. This measure, which reflects the investors’ success at growing their assets over the sample period, underperformed the actual returns generated by the mutual funds by about 1% per year.

The difference was due to poor market timing based on the pattern of chasing past performance. Since the products in Nesbitt's study had a
combined market value in excess of US$1.5 trillion, this performance shortfall implies an enormous loss of potential wealth to US mutual fund investors. In 1996, the market for US small-cap mutual funds proved particularly hazardous for US mutual fund investors. John Wyatt, writing in *Fortune* magazine3, commented that "contrary to all appearances the legions of investors who piled into small cap mutual funds got completely screwed".

Wyatt explained how investors who bought hot mutual funds in 1996 did much worse than the funds' published double-digit returns. As an example of this phenomenon, Wyatt reviewed the history of a product called the Aggressive Growth Fund. The 1996 returns for this product are shown in Table 1.

Between January and May of 1996, the Aggressive Growth Fund was the top-performing growth fund in America, attaining a spectacular 67.6% total return. Investors, attracted by this outstanding performance, injected large amounts of cash and the size of this fund rose from US$4 million to US$155 million. These new investors were bitterly disappointed in the second half of the year, as the fund then returned -30.5%.

This pattern of events meant that the Aggressive Growth Fund's performance in 1996 did not accurately reflect the experience of the fund’s investors. From a performance standpoint, the manager could correctly claim that the Aggressive Growth Fund attained a total return over the full year of 16.5%. In contrast, virtually all of the fund’s investors attained a far worse result.

Ernie Ankrim in a 1997 Russell Research Commentary4 explained that fast-growing investment funds posed a special problem from a performance-measurement standpoint. Under conditions of high cash inflow, conventional performance measures such as time-weighted returns or dollar-weighted returns may not accurately represent the typical investor’s experience. A particular problem is that these measures assess returns over the full period under investigation, which is not indicative of the experience of late-to-the-party investors. When cash inflow is high, this group can represent a large proportion of the funds clientele.

To address this issue, Ankrim proposed an alternative measure he termed flow-weighted returns (described in the appendix). This statistic measures the average of the annualised total returns enjoyed by each new dollar invested in the product over the period. To gauge the level of investor satisfaction, Ankrim compared these returns with the benchmark S&P 500 index.

In this context, flow-weighted returns can be likened to a meeting where every new dollar invested in a fund over a series of years shows up as a voter. Some dollars will have been there for a long time, others will have gained their voting rights only recently. In all likelihood, each group of voters will have had a different investment experience but, importantly, each dollar vote carries an equal weight regardless of its timing into the fund.

Ankrim applied this measure to evaluate investor experience in 34 fast-growing US equity mutual funds over the 11 years ending 1996. Overall, the typical investor in these products underperformed the fund returns by approximately 1.4% per year. This finding reinforces Nesbitt's observation that US mutual fund investors tend to lose significant value through poor cashflow timing.

The five top-performing funds in Ankrim’s study are particularly illustrative of how product performance can differ from investor experience. The results for these products relative to the S&P 500 Index are shown in Table 2.

These products were very successful, outperforming the market index by between 2.14% and 3.88% on an annualised basis. In contrast, the results attained by the investors in these products were quite poor, as only one product had investors who were ahead of the index in terms of flow-weighted returns.

Paradoxically, these investors could rightly claim to be investing in some of the best-performing funds in America, while at the same time underperforming the market index. The reason is that they tended to invest after these products had established their outstanding performance records.

**EVIDENCE FROM AUSTRALIA**

To assess the behaviour of retail investors in the Australian context, we reviewed historical total returns (net of
ongoing management fees), fund sizes and cashflows for unit trusts included in Assirt Investment Research and Technology's diversified equity category. At December 1997, this grouping consisted of 62 Australian equities unit-trust products with combined assets in excess of $6.4 billion.

Our focus was to evaluate products which had a relatively long-term performance track record, and which had demonstrated success in attracting fund inflow. To achieve this, we applied the following selection criteria:

- minimum of eight years history to December 1997;
- minimum value of $50 million at 31 December 1997;
- positive net contributions over the eight-year study period.

Of the 62 products in the Assirt grouping, only 11 products satisfied these requirements. While at first this appears to be a small sample size, these products in fact represented 75% of the assets invested in Australian equities unit trusts at December 1997. This implies a very high degree of concentration of retail fund flows into a very small group of seemingly successful products.

Following the methodology of the Ankrim study, we reviewed the results for these products in terms of the fund returns generated by these products as well as the flow-weighted total returns which estimate the typical investor's experience. To control for the overall market performance, we have expressed these results as excess returns relative to the ASX All-Ordinaries accumulation index performance. The funds in our survey are labelled alphabetically ranked by their performance over the eight-year period.

Overall, the managers of these funds did very well, beating the All-Ordinaries accumulation index on average by 2.7% each year. In particular, the four top-performing funds were extremely successful, generating levels of excess returns that are quite unusual over such an extended period.

These results are consistent with the contention that products with strong historical results tend to attract large cash inflows. It also means that investors who were in these funds continuously from 1990 to 1997 might have reasonably expected to have outperformed the All-Ordinaries.

However, this select group represents only a small subset of the total investors in these products. At January 1990, the total size of these products amounted to only $470 million. This figure is dwarfed by the $2.5 billion in net cashflows contributed between 1990 and 1997.

Under these conditions, flow-weighted returns provide a better indication of the typical investors experience. As shown in Table 3, these investors consistently got poorer than advertised performance. For every fund in our sample, the flow-weighted returns were below the product return.
The pronounced difference between published fund returns and the actual experience of fund investors is symptomatic of a major weakness in investor behaviour.

over the period. On average, the flow-weighted returns attained by these investors was 0.95% below the All-Ordinaries accumulation index. Figure 1 illustrates how this problem can occur. The investors in this product underperformed the market index, while over the same time horizon the product itself outperformed the index.

The bars in the graph show Fund C's annual excess returns in percent versus the All-Ordinaries accumulation index from 1990 to 1997 and the line shows net contributions into the fund in millions of dollars for corresponding periods. This fund essentially built its successful track record in 1991 and 1992. At this time net cash inflows were at fairly low levels. However, in 1993 and 1994 a large amount of new money arrived, just in time to experience a period of underperformance. The dynamics underlying this result can be characterised as follows: the fund does well, this attracts attention and new cashflows, and the latest investors don't enjoy the outstanding performance that attracted them to the product in the first place.

IMPLICATIONS FOR INVESTORS
The pronounced difference between published fund returns and the actual experience of fund investors is symptomatic of a major weakness in investor behaviour. The real challenge facing investors is to implement a strategy likely to generate superior returns in the future. Currently, there is far too much focus on rewarding managers for their past achievements. Investment advisers can add real value to their clients' portfolios by protecting them from the type of performance shortfall we have highlighted. This can be best achieved if the adviser has a well-thought-out investment philosophy that their clients can implement in a disciplined fashion. In our view, chasing yesterday's winners is not such a philosophy.

APPENDIX: RETURN CONCEPTS IN THIS PAPER
Time-weighted rates of return are the standard basis for measuring performance in the investment industry in Australia and the US. Time-weighted rates of return eliminate the impact of investor cashflows from the performance result. They are therefore very useful for assessing the performance of an investment manager independent of their clients' cashflow patterns. Conveniently, unit trust prices automatically provide the necessary data for calculating time-weighted returns.

Dollar-weighted returns are otherwise known as internal rates of return. This performance measure represents the return on an investment portfolio taking into account both the underlying performance of the manager as well as the impact of cashflows. When the dollar-weighted return is less than the time-weighted return, client cashflows have detracted from investment performance.

Both time-weighted and dollar-weighted return measures relate to a defined investment horizon. While appropriate for most applications of performance measures, under conditions of high cash inflow these measures can differ markedly from the typical investor's experience. In particular, fund clients who were not invested in the early part of the investment horizon tend to be given a lesser weighting by these performance measures.

As an alternative approach, flow-weighted returns assign an equal weighting for each dollar of cash inflow to the fund, regardless of when it occurs. This figure is calculated by first determining the annualised total return for the remainder of the sample period at the time of each observed cash inflow into the fund. These results are then weighted by the relative size of each cashflow to provide an overall summary figure. Under conditions of high cash inflow, this measure yields a result that is likely to be more representative of the overall experience of the funds investors than either the time weighted return or the dollar weighted return.

EXAMPLES OF FLOW-WEIGHTED RETURNS
1. Flow-weighted vs time-weighted returns
Table 4 is a simplified example demonstrating the difference in calculation methodology between

<table>
<thead>
<tr>
<th>Year</th>
<th>Cashflow at start of year</th>
<th>Percentage of total cashflows</th>
<th>Fund return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$100</td>
<td>10%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Year 2</td>
<td>$900</td>
<td>90%</td>
<td>0%</td>
</tr>
<tr>
<td>Total over period</td>
<td>$1,000</td>
<td>100%</td>
<td>9.5% per year*</td>
</tr>
</tbody>
</table>

* The fund return of 9.5% per year is calculated as \( [(1+0.20)(1+0.0)]^{0.5} \)
annualised time-weighted returns and flow-weighted returns. Consider a fund that returns 20% in the first year and 0% in the second year. Investors contributed $100 at the beginning of Year 1 and $900 at the beginning of Year 2.

The annualised return of 9.5% correctly reports the fund's performance over the two-year period. However, it does not accurately represent the typical investor's experience. Only the 10% of cashflows that were invested in Year 1 attained this return of 9.5%. The 90% of cash flows that arrived in Year 2 attained a return of 0%. To provide a more representative result, the flow-weighted return is calculated as the weighted average of these figures; i.e., it is equal to 0.95%.

2. Controlling for market risk

Table 5 shows an example of a flow-weighted excess return calculation. We compare the returns for a hypothetical fund relative to the All-Ordinaries index. In this example, cashflows are assumed to occur at the beginning of each year for the eight years ending 31 December 1997.

The fund had $11.1 million at the beginning of 1990, achieved a -10% return in that year and finished the year with $10 million in assets. If invested for the entire eight-year period, investors contributing the original $11.1 million would have received an annualised return of 11.55% or 1.07% pa above the All-Ordinaries accumulation index. The flow-weighted excess return of -0.02% is calculated by summing the product of the percentage of total cashflows occurring each year (column 7) and the difference in period returns (column 5).

NOTES
2. Each of the return concepts used in this paper is described in the appendix.
5. Periods of less than one year are not annualised.