The willingness or otherwise of life offices and superannuation funds to invest in businesses requiring venture and development capital has generated much debate in the financial community. This article examines the results of investment in this sector by the AMP Society. AMP has been an investor in unlisted equities since the 1950s, initially in rural and resource development and later, as the Australian economy matured, in resource processing, manufacturing and information-based industries. In this study, Peter Cassidy assesses the risk-reward performance of more than 50 AMP investments during the past 28 years and explains why some have failed to shape up.

The easiest method of judging the performance of an institution's portfolio of investments in the unlisted equities sector is to assess the cashflow into and out of the institution in relation to each investment, together with the current or final market value of the investment. The method does not attempt to consider the taxation implications of the cashflows, for either the institution or the investments, because the investments often span long timeframes during which tax rules have changed.

The most appropriate measure of the performance over time of each investment and of the portfolio is the internal rate of return (IRR). This can be likened to a compound interest rate on a bank loan or housing mortgage.

The reference framework for assessing the IRR performance is the performance of alternative investment opportunities from the time the unlisted equity investment was made. The alternative investment used here as a yardstick for the AMP unlisted equities portfolio is the stockmarket — specifically, the All Ordinaries Accumulation Index (AOAI), which measures the compound growth in the dividend and capital value of the Australian stockmarket. This is clearly the best proxy for a market IRR over the same period as the AMP's unlisted investment portfolio.

Where an investment is older than the AOAI, the All Ordinaries is used as the performance base with an adjustment for the dividend flow over the same period. The average dividend yield is about 5 per cent a year.

The AMP portfolio

The portfolio of unlisted investments, with a current market value of $1.6 billion, has been segmented into:

- Resource investments — long-term unlisted joint ventures including the Tomago aluminium smelter and the Gove bauxite and alumina operations. This segment has a market value of $940 million;
- Investments — non-resource investments with a market value of $314 million;
- Development, venture, management investment companies (MIC) and management buy-out (MBO) investments — all of AMP's invest-

---

Dr Peter Cassidy SLA (Aff) is manager, development capital and unlisted equities, with AMP Investments. His experience in the development capital industry in Australia includes the commercial assessment of scientific and technological innovations, and the establishment of the Tasmanian Innovation Council Ltd, an organisation providing advice and market research services to start-up businesses.
The IRR performance of the sectors in the portfolio is substantially better than the equivalent market performance (see Figure 1, in which those investments above the sloping line have outperformed the market and those below have underperformed). The results of each sector since the inception of the portfolio are:

- **the investment sector** has outperformed the market by 7 per cent a year over 28 years;
- **the resources sector** has outperformed the market by 18 per cent a year over 24 years. Most of the investment opportunities in this sector emerged in the 1970s and 1980s under unique circumstances determined primarily by government policy and the Foreign Investment Review Board. It is important to recognise that these outstanding returns reflect the benefits of being involved at the early stage of development. Today, these businesses are relatively mature and provide returns more in line with the market;
- **the terminated sector** has outperformed the market by 8.7 per cent over 26 years;
- **the development/venture/MIC/MBO sector**, in contrast, has underperformed the market by 20 per cent a year, with an annual IRR of minus 8.5 per cent over eight years.

The risk-reward relationship

In many forms of investment there is a likelihood that the return will be different from that expected when the investment decision was made. If the performance is better than expected, the investor is not likely to complain, but a lower-than-anticipated performance can create considerable concern. This is particularly so when an entire sector of a portfolio has underperformed.

It is of interest, then, to have some understanding of what is a reasonable return for an unlisted equity portfolio. Figure 2 shows the performance of the investments, resources and terminated sectors as at 31 December 1992. Several of AMP's corporate investments are also included, as they have been of a long-term development na-
The indications are that the IRRs will contain a premium. The relationship between the market return and the outperformance expectation for an unlisted investment is complex.

It is interesting that AMP has had only one short-term investment in the current cycle, which had a duration of three years and an IRR of more than 20 per cent. This was a mezzanine-debt investment and it may demonstrate that investors should be prepared to swap from pure equity to quasi-equity/debt instruments at the peak of an economic cycle when interest rates are high.

Market volatility is less of an influence in the long-term investments. In this case, however, the short-term investments have given the performance shown during a period when the economy has been relatively stable, although at a low ebb.

Most investments shown in Figure 2 are world-competitive businesses and many are greenfield start-ups. These investments provide a realistic performance benchmark that an investor in unlisted equities could expect from a successful portfolio which has been established for ten years or more.

The performance for the start-up investments is the value created for accepting the start-up risk in a venture where the entry price is the cost of establishing the business and does not contain a premium.

The AMP portfolio shows the relationship through a recession where market return has been less than the long-term average and at times negative. In this situation, the relative outperformance, compared with the market, mathematically approaches infinity as the market return approaches zero, and a relative measure is meaningless at that point. A relevant measure can be made when both performances are greater than one.

The outperformance in the long term of 7-10 per cent a year, against the long-term market return of 12 per cent, yields a relative outperformance of 1.6 to 1.8 times the market. The current shorter-term AMP investments with time-frames up to six years have performed in a band of 0-5 per cent outperformance while the market has had returns of minus 2 per cent to 10 per cent, depending on exactly when the investment was made. The relative outperformance of these shorter investments varies from 1.4 to 1.9 times the market in the region where the market has had a positive return.

This performance over the short term is in line with the long-term performance and supports the view that the value and relative performance of investments in good unlisted companies broadly follows the market.

The blue sky effect

In some situations, the IRR calculation may not be representative of the business performance.

This can occur when a business is valued to market before the investment program has been completed and the cashflows have emerged. In one sense this is ascribing a certain level of "blue sky" to the emerging business. The outcome is that the IRR can reach very high numbers, in the order of hundreds, before settling down to the equilibrium level.

The Tomago aluminium smelter shows this trend, with the IRR reaching 585 per cent after year two. Figure 4 has left out the valuation impact on the IRR over the initial four years. The trend is similar to Gove (Figure 3) for the subsequent years with the

![Figure 4: The IRR performance of Tomago relative to the market](image-url)
annual IRR stabilising in the range 22-25 per cent. Today, Tomago is one of the world's low-cost aluminium producers.

The commissioning of the third pot-line in 1993 will ensure Tomago remains a bottom quartile producer, well positioned for an upturn in the world economy. The IRR performance of Tomago is similarly expected to show an upturn in performance even though the business has comfortably outperformed the market for many years.

From a trading perspective it may have seemed good business to realise the investment when the IRR was high. However, an investor who intended to do that would not have been invited in the first place to participate in the venture; the industry partners seek stability through the development phase. Equally, care has to be taken not to get out of a good investment too early. In the absence of better opportunities, it would be pointless to sell out of long-term investments with stable IRRs and strong cashflows simply because of their age.

The development of Stanbroke Pastoral is an example of a very long-term strategy. Realising the potential business value which had been initially envisaged required opening up the Japanese and Korean meat markets. Faith in the long-term strategy was justified, with the IRR return to 1992 outperforming the market by 1.6 times. Most of the growth occurred during the 1980s, yet the Stanbroke concept was developed and carefully pursued in the 1960s and 1970s while land prices were low.

### Effect of gearing

Many of AMP's unlisted investments have relatively low gearing, particularly those start-up businesses where the shareholders are effectively subscribing equity capital. Debt, if used, is often subordinated loans from the shareholders and is effectively equity. The effect of low gearing is to establish a strong business, even though returns may be somewhat lower than if the project had third-party debt.

In contrast, the stockmarket is made up of companies which are usually geared with true third-party debt. The compound return from the market is effectively a geared return. If this were taken fully into account, the unlisted investments would record a greater outperformance than shown in this paper.

A corollary is that one may expect a less-g geared investment to have a lower IRR volatility, as the earnings and hence valuation are less influenced by the interest-rate cycle.

However, there is little support in this study for this conjecture and it appears that other factors, such as commodity prices, economic conditions and the quality of the business, are more important factors in determining the volatility of the IRR.

### Duration and return

The duration of an investment is effectively the time taken to get the investment dollars back to the investor. It provides a measure of the matching between assets and liabilities in a portfolio.

The inverse of the IRR can provide an indication of the duration of the portfolio. However, the duration concept by this measure has no meaning when a portfolio has a negative IRR.

The duration of AMP's portfolio shows a range of 3.4 to 10.5 years (Table 1) while the comparable market duration was 8.0 to 9.1 years. Care needs to be taken with these broad indicators.

For example, when the duration of the individual investments across all sectors for companies with positive IRRs is examined (see Figure 5), it is seen that the market has a broad peak in the range of 5-10 years with a maximum in the range of 7.5-10 years.

In contrast, the AMP portfolio has two maxima, one at 2.5-5.0 years and the second corresponding to the mar-
The weakness in this methodology is that it is effectively a measure of the steady state equilibrium position of the portfolio. Start-up investments may take a number of years to realise their potential. The portfolio has been examined from this perspective. Figure 6 shows that while the distribution of the durations is bimodal, the distribution of the number of years for an investment to achieve its equilibrium return is much flatter with a longer tail.

The conclusion is that while an investor may expect to see a performance from a portfolio in less than ten years, the reality is that the performance of individual investments does not follow the portfolio or investment-duration trend; an investor has to be prepared to develop an understanding of the strategies and underlying values in the portfolios in which they have an exposure.

Failure of the risk-reward relationship
A clear example of the failure of the risk-reward relationship is in the Development, Venture, MIC and MBO sector of the AMP unlisted portfolio. Since 1985, AMP has invested about $100 million into this market, with a number of fund managers with a range of styles.

These have included pure equity funds; leveraged investors who have used borrowed money to gear their equity base; pure mezzanine-debt funds; and pure equity funds which invest in highly leveraged transactions. These funds have operated, by and large, through Australia's biggest economic boom before 1987 and through a severe recession. Investor returns from the funds were generally promising significantly higher returns. Some of the fund managers could point to particular returns that exceeded 30 per cent in a year and the business plans supporting the underlying investments often suggested significantly higher returns.

Some of the fund managers could point to particular returns that exceeded the 30 per cent but on an individual fund basis the performances have been poor and this sector of AMP's portfolio has underperformed the market by 20 per cent. Figure 7 shows only two investments that can be considered to have performed in line with the market. Although AMP has participated in 14 funds during this period, judicious allocation of money means that the total cash loss over the full time of all investments is likely to be relatively small.

The other unfortunate feature of the sector is that no investment has emerged from these funds as a large, strong international business, with the possible exception of Nucleus Ltd, which was well on its growth path by the time the venture-capital market became established.

Risks in investment
Some of the risks which have been poorly assessed are:
- **valuation risk** where entry prices into an investment were too high;
- **market risk** where the business could not achieve the revenue forecast;
- **management risk** resulting from the inability of people to organise the business efficiently;
- **gearing risk** resulting from selling a highly geared business with warranty liability which could substantially erode the equity base in the fund;
- **exit risk** arising from the inability to achieve full value at the time of sale of an investment.

For many investors there is also a risk associated with the fund manager. Management fees have been a major source of complaints by investors, suggesting that some funds are structured to maximise the return to the manager at the expense of the investor. For example, fees may be charged against the initial capital raised or a percentage of the total assets, whichever is higher. This is reasonable when the return expectations are 30 per cent or more.

However, the fees become unacceptable when the asset base of the fund declines. There have been instances where investors have acquired the management of a fund and have effectively been able to buy a substantial equity position in the fund at prices less than the management fee.

These situations create much shareholder debate, often with the result

---

**Table 1: AMP SECTOR PORTFOLIO DURATION COMPARED TO THE MARKET DURATION**

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Duration (Yrs)</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development, venture, MIC &amp; MBO</td>
<td>NA</td>
<td>8.7</td>
</tr>
<tr>
<td>Investments</td>
<td>5.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Corporate</td>
<td>10.5</td>
<td>8.7</td>
</tr>
<tr>
<td>Resources</td>
<td>4.9</td>
<td>8.0</td>
</tr>
<tr>
<td>Terminated</td>
<td>3.4</td>
<td>9.1</td>
</tr>
</tbody>
</table>
that fees are negotiated down substantially. Unfortunately these issues sometimes arise when the fund is in its death-throes and long-term patient investors have little chance of recouping their money.

Key factors in the success of unlisted equities

Several key features can contribute to successful long-term investment in unlisted equities:

- detailed research to identify strategically significant investment opportunities;
- financially strong and technically competent partners who work for the benefit of all shareholders;
- the right to nominate a board member, receive management accounts and contribute to the management of the business;
- an agreed exit strategy to enable the investor to achieve market valuation.

The trend for the 1990s

The 1990s will undoubtedly be different from the previous decade, with the first years of the nineties spent in recession, record unemployment in Australia and the prospect of long-term low global interest rates. For AMP's unlisted portfolio, a relative premium over the market of 1.4 to 1.8 times the market should be achievable but the ability to achieve an absolute portfolio performance of 20-25 per cent a year is clearly dependent on the market.

There will be opportunities which will yield 20-25 per cent IRRs. However, they will be scarcer than in the past, when inflation made life easy. A review of real returns may provide a clearer insight to performance that can be expected in a low-inflation environment.

It is likely that in the 1990s a portfolio performance of 1.4 to 1.8 times above the compound return of the All Ordinaries Accumulation Index will remain a reasonable target for investors in unlisted equities for an investment in the order of 10 years.