UNLISTED NUMBERS

WHAT THE INVESTORS EXPECT IN RETURN

A survey provides evidence about the minimum acceptable equity rate of return that would be required for an investment in the average unlisted security, compared with current rates of return required for listed securities. GRANT HYDE examines implications for venture-capital investment.

Theories have been developed in the United Kingdom to calculate required equity returns for specific investments in listed companies. These theories are based on many studies which have been undertaken to determine actual equity returns from listed securities.

Comparatively few studies have been made into determining equity returns from unquoted securities. However, venture capital institutions in the UK were examined recently to determine their required rates of return on unquoted securities.

This paper reviews the findings from this survey and compares the data with studies and theories relating to quoted securities. The results of the survey provide an indication of what the required rates of return on unquoted securities would be in countries with developed capital markets, such as Australia.

RISK AND RATES OF RETURN

In 1952 Markowitz wrote an article titled "Portfolio Selection" which analysed the relationship between risk and rates of return and indicated how the principles could be used to construct a portfolio of securities. This laid the foundation for further studies and in the 1960s the capital asset pricing model (CAPM) was developed. The CAPM established a direct relationship between the expected level of risk premium on a security and its beta (a stock's sensitivity to changes in the value of a market portfolio).

The CAPM was followed by other models, such as arbitrage pricing theory (APT), which claim to provide a more accurate indication of the equity returns that should be expected when investing in listed securities. APT states that the expected equity return for a listed security depends on a range of factors specific to that stock. These could include the level of industrial activity, oil prices and other macroeconomic factors.

Models such as CAPM and APT are also used by corporate financiers in establishing values for listed companies in takeovers and reconstructions and by strategy and finance executives to assess the relative attractiveness of various capital projects.

EQUITY PREMIUM STUDIES

Many studies have been undertaken in the UK of actual returns on listed securities to determine the levels of equity premium over a risk-free rate of return that should be used in calculating expected returns on equity investments (or cost of equity capital).

The results have varied, depending on the time-frame selected. For example, the BZW Equity-Gilt Study in 1994 indicated that for the period 1919 to 1993, real (excluding inflation) equity premiums were between 5.8 per cent per annum and 8 per cent per annum, depending on whether a geometric or arithmetic mean was used.

If actual historical equity returns for listed securities are assumed to be reasonable indicators of expected equity returns, then these risk premiums would indicate that the current (nominal) cost of equity capital in the UK would be in the range of 14 per cent per annum to 17 per cent per annum, based on current long-term risk-free rates in the region of 8.5 per cent per annum and a security with...
average market risk.

However, there is no consensus on whether actual achieved equity returns are useful in estimating expected equity returns. In submissions made to the Monopolies and Mergers Commission under the Gas and Fair Trading Acts in September 1993, OFGAS (the official body regulating the UK gas industry) suggested that expected equity premiums could be as low as 1 per cent per annum, which in terms of cost of equity capital would mean a current nominal rate of about 9.5 per cent per annum.

UNLISTED SECURITIES

The research and conclusions that can be drawn from studies into the estimated cost of equity capital is very helpful for investments involving listed securities. In the UK, however, only about 3,000 companies are listed on the London Stock Exchange out of a total population of more than a million companies. Obvious questions arise, such as how to calculate the cost of equity for an unlisted company and whether there is a relationship between the expected returns for listed and unlisted companies.

There have been various attempts to answer these questions. For example, in 1981 an informal survey of investment practice concluded that there was considerable irrationality in investor behaviour (Christopher G. Glover, Valuation of Unquoted Securities). Some investors did not apply discounts for lack of marketability while others applied discounts as high as 50 per cent. The most commonly used discount appeared to be 25 per cent.

In 1990 the Stoy Hayward/Acquisitions Monthly Private Company Price Index (PCP index) was launched to provide a guide to the valuation of shares in unlisted securities. The PCP index compares price-earnings ratios of listed companies (originally using the FT 500 index and more recently the FT Non-Financials index) to an average price-earnings ratio of unquoted companies. The PCP index includes data from 1987. The average discount of unquoted to quoted price-earnings ratios has been in the region of 40 per cent over the life of the index, although the current discount is 33 per cent.

The Glover survey and the PCP index are useful if the capitalised-earnings method of valuation, based on the application of price-earnings multiples, is to be used to value the unlisted company. No explanation has been provided, however, of how these discounts may be used in determining the appropriate cost of equity capital to apply to unlisted companies in the UK.

SURVEY OF VENTURE CAPITAL INDUSTRY

A recent study by the University of Nottingham, sponsored by Touche Ross Corporate Finance, focused on determining how participants in the venture capital industry assess the equity rate of return they require for investing in unlisted securities and also the current equity rates that are applied. The survey covered 66 UK venture capitalists.

The results of the survey provide the first formal evidence in the UK on the levels of equity rates that are applied to unquoted companies. A summary of the equity rates used are shown in Figure 1, showing a comparison with current equity rates for listed companies and with the risk-free rate of return. Figure 1 indicates that venture capitalists consider investments in unlisted companies have significantly higher risk than those in listed companies.

The risk profile within the unlisted companies can be further stratified as shown in Table 1. The majority of respondents indicated that they would require equity rates of return on management buy-outs and later-stage investments in the range of 26 per cent to 35 per cent per annum. Management buy-ins are considered to be of higher risk, with more than two-thirds of respondents requiring rates of return of between 31 per cent and 45 per cent per annum. (A management buy-in is defined as a management buy-out where the new management is not already involved in the operation of the target company.) The higher required equity returns for MBIs

![Figure 1: Required rates of return* for listed and unlisted securities](image-url)

*By the majority of survey respondents
compared with MBOs is likely to reflect the perceived greater risk of backing a new management which has, perhaps, less detailed knowledge of the company's operations.

The highest equity returns relate to early stage investments, where over two thirds of respondents indicated that they require equity returns in excess of 45 per cent per annum.

Respondents were also asked what was the benchmark for the minimum required rate of return currently used to evaluate expected after-tax returns. The mean benchmark rate of return for all unlisted investments was 29 per cent per annum, which is between 70 per cent and 110 per cent higher than the current rates of return for listed companies.

To people who have been closely involved with the venture capital industry these results will probably be consistent with their expectations. What may surprise some, however, is that there appears to be no direct correlation between equity returns for listed securities and those used by venture capitalists for unlisted securities. For example, most respondents to the survey indicated that they seldom or never altered their equity returns for:

- changes in long-term gilt rates;
- changes in equity returns for listed securities; or
- changes in base rates.

This would indicate that the decrease in real rates of interest in the past two years would have little or no effect on the level of investment in unlisted securities. This could have ramifications for government policies on increasing the level of investment in the UK.

It is also generally accepted in financial theory that there is some correlation between gearing and equity rates of return. Most participants in the survey, however, indicated that the level of gearing was not very important in determining equity rates of return. This is surprising, as it was the high gearing levels of the 1980s that made many companies vulnerable when economic conditions deteriorated in the early 1990s.

If the above results are considered in the context of a portfolio of both listed and unlisted investments, then it would be incongruous if equity returns for unlisted securities were based on entirely separate and independent criteria than for listed securities.

Another interesting result from the survey was that venture capitalists only sometimes altered their required rates of return to reflect the difference between minority or majority positions in their investments. This is particularly curious, as many studies in the US and the UK have indicated that investors are prepared to pay significant premiums for takeover premiums in the UK over the past four years is in the range of 22 per cent to 32 per cent (Acquisitions Monthly/Amdata III).

**SUMMARY**

The information from this survey provides a sound basis for understanding how venture capitalists, who are significant investors in unlisted securities, view risk and therefore the returns that they require. This information is helpful to anyone involved in the valuation of unlisted securities. It appears from the survey that the minimum acceptable equity rate of return that would be required for an investment in the average unlisted security is between 70 per cent and 110 per cent higher than current rates of return required for listed securities.

The venture capital industry, however, does not appear to assess equity returns for unlisted securities by reference to equity returns for listed securities, which could be considered anomalous.

The answer to the important question of whether there should be any relationship between the equity returns of unlisted and listed securities may have to wait until there is sufficient evidence on the level of actual returns from unlisted investments. This information may, however, be a little more difficult to obtain from the venture capital industry.

### Table 1: Required rate of return on equity

<table>
<thead>
<tr>
<th>Rate of return (%)</th>
<th>INVESTMENT TYPE</th>
<th>Later-stage investments</th>
<th>Management buy-outs</th>
<th>Management buy-ins</th>
<th>Early-stage investments</th>
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<tbody>
<tr>
<td>Below 20</td>
<td></td>
<td>5.9</td>
<td>1.9</td>
<td>0.0</td>
<td>2.4</td>
</tr>
<tr>
<td>21 - 25</td>
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<td>19.6</td>
<td>15.4</td>
<td>7.7</td>
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<td>26 - 30</td>
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<td>25.5</td>
<td>19.2</td>
<td>15.4</td>
<td>4.8</td>
</tr>
<tr>
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<td></td>
<td>31.4</td>
<td>46.2</td>
<td>28.8</td>
<td>7.1</td>
</tr>
<tr>
<td>36 - 45</td>
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<td>15.7</td>
<td>13.5</td>
<td>40.4</td>
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<tr>
<td>46 - 55</td>
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<td>1.9</td>
<td>5.8</td>
<td>40.5</td>
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<tr>
<td>Above 55</td>
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<td>2.0</td>
<td>1.9</td>
<td>1.9</td>
<td>26.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td>26%-30%</td>
<td>31%-35%</td>
<td>31%-35%</td>
<td>46%-55%</td>
</tr>
<tr>
<td>Sample size</td>
<td></td>
<td>51</td>
<td>52</td>
<td>52</td>
<td>42</td>
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