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**A COMPARATIVE STUDY OF THE SOUTH AFRICAN VENTURE  
CAPITAL AND PRIVATE EQUITY INDUSTRY WITH SPECIAL  
REFERENCE TO THE INVESTMENT DECISION-MAKING PROCESS**

**Thesis submitted to the Department of Accounting, University of Cape Town, in  
partial fulfilment of the requirements for a Masters of Commerce in Financial  
Management**

**by**

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**on**

**30 November 2001**

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**ISBN 0-620-28341-6**

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## **ABSTRACT**

The efficiency of the private markets is important in ensuring a healthy economy. This study sets out to shed light on the decision-making process applied by South African venture capitalists when they allocate capital. Venture capital is defined in this study as including private equity.

The study comprises an extensive survey by way of a detailed questionnaire which was mailed to 66 members and non-members of the South African Venture Capital and Private Equity Association (SAVCA) and achieved a 77% response rate. The questionnaire was based on previous work done in Western and Eastern Europe, and India. This ensured that quantitative South African results could be compared with international results. Quantitative statistical analyses were conducted and the results are presented. The study first identifies the criteria applied in the general evaluation of investments. Second, the required rates of return are established for each stage in the business cycle of the potential investment. Third, various risk factors which might affect the required rate of return are considered. Fourth, the study identifies the valuation methods employed at each stage in the business cycle of the potential investment. Fifth, the use of portfolio theory by South African venture capitalists and private equity investors is examined.

In keeping with most similar studies around the world, South African VCs seek out quality entrepreneurial teams. They do this using an array of evaluation criteria which endeavour to flush out the risks inherent in the investments they are evaluating. In South Africa VCs seek strong management and overwhelmingly rate integrity as the most important management quality. Far less important are market issues, followed by product or service issues. This may reflect the perceived dearth of management talent in South Africa.

This study analyses the required rates of return of different groupings of VCs by investment stage. It yields results consistent with financial theory as it applies to venture capital: the earlier the stage of investment, the higher the perceived risk profile of that investment. The study finds that more mature VC funds have lower required rates of return than less mature funds. Funds with a development or

empowerment objective have lower required rates of return than those without. Independent funds require higher rates of return than captive and semi-captive funds. The required rates of return have only increased by about 2% since the more buoyant mid to late 1990s. The debt-equity ratio has an increasing effect on the required rates of return as the investment moves through the earlier stages of investment to the later stages. While the required rate of return of an investment is generally determined by the risk band in which it falls, the effect of the debt equity ratio is dependent upon an assessment of the individual risk characteristics of the investment.

The general and specific factors which affect risk and required rate of return are ranked by South African VCs and the results are in keeping with international results. The general factors identify the lack of importance of the state of the general economy and long-term gilts to the VC's required rate of return, but the importance of the state of the actual sector in which the investee participates. Insofar as specific risks are concerned, management is of particular importance as an indicator of risk, both in respect of the quality of management and the predictability of management's behaviour.

An analysis was done of the valuation methods which are used at the different stages of the investment cycle. South African VCs prefer to use the discounted cash flow method of valuation at all stages of the investment, although different techniques are also used in the earlier stages of the investment cycle. A final valuation is based on a preferred method while using the other methods as a check. Gut feeling is an important component of this process. This research also confirms that the newly adopted SAVCA (BVCA) Valuation Guidelines have not affected the valuation process when an investment is made.

Most South African VCs apply reasonably sophisticated portfolio theory to their investment portfolios and the majority regard their portfolios as well-diversified.

Implications for both South African entrepreneurs and South African VCs are also presented.

**KEYWORDS:** venture capital, private equity, investment evaluation criteria, required rate of return, valuation techniques, portfolio strategy, South Africa

## **DECLARATION OF ORIGINALITY**

I declare that this thesis is my own work. It has not been submitted for any degree or examination at any other university. All references and sources of information have, to the best of my knowledge, been accurately reported.

Signed by candidate

Mark Jonathan George Taylor

30 November 2001

## **FOREWORD**

“The real trouble with this world of ours is not that it is an unreasonable world, nor even that it is a reasonable one. The commonest kind of trouble is that it is nearly reasonable, but not quite. Life is not an illogicality; yet it is a trap for logicians. It looks just a little more mathematical and regular than it is; its exactitude is obvious, but its inexactitude is hidden; its wildness lies in wait.” (GK Chesterton)<sup>1</sup>

This study is all about the management of risk as we endeavour to achieve the best result, something that people engage in every day of their lives irrespective of whether they are venture capitalists. It is the author's hope that this study will bring greater understanding to both practitioners and particularly entrepreneurs of a financial market often steeped in unnecessary mystique.

There are a number of people who played a role during what has been a difficult pregnancy but a happy birth:

- Were it not for a persuasive selling job by Professor Enrico Uliana, my supervisor, I would never have embarked on this journey. Were it not for his help, critical insights and encouragement, it would have been a poorer document.
- The willingness of so many VC industry players to participate overwhelmed me – I know how busy the life of a VC is.
- My colleagues at Venfin Ltd were, I suspect, amused at my industrious efforts but always supportive and understanding of my predicament. Hopefully I'll remember how to hold a golf club.
- Mike Wright and Andrew Burrows both took the time to communicate with me all the way from the University of Nottingham and gave me access to their questionnaire.
- Josh Lerner kindly furnished me with some excellent papers and notes on VC from the Harvard Business School.

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<sup>1</sup> Chesterton 1909:149.

- Freedom Gumedze, University of Cape Town, assisted with the performance of the statistical analysis.
- Tom Blok and PricewaterhouseCoopers acted as the independent data recipient and both lent their enormous credibility to my efforts and contributed a willing and hugely helpful slave in the form of Riette Niewoudt.
- Hein Carse, Jo' Schwenke, Cees de Haan and Richard Flett, fellow VC colleagues, contributed time and patience by allowing me to pre-test several versions of my questionnaire on them.
- Francois Jooste and Gerhardus Scheltema helped me out with some IT technical issues.
- Sabine Lorrimer was ever helpful after hours, correcting and sending out strings of questionnaires.
- Olga Kotze helped me collect economic data.
- Finally, the people who have borne the brunt of my studies have been my family. I would not have finished this without Susan's enthusiasm and active interest in my thesis. Olivia graciously tolerated my pre-occupation despite all the games we missed.

# 1 INTRODUCTION

“What is it that distinguishes the thousands of years of history from what we think of as modern times?...The revolutionary idea that defines the boundary between modern times and the past is the mastery of risk: the notion that the future is more than a whim of the gods and that men and women are not passive by nature.” (Peter L Bernstein)<sup>2</sup>

The efficient allocation of resources is an important element of a robust economy. Considerable study has improved our understanding of the public markets in this regard but far less research has been conducted on how the private markets, consisting of the private equity and venture capital markets, function. Little is known as to what extent the private markets are more or less efficient than the public markets and the reasons for this.

A greater understanding of the investment decision-making process whereby private equity and venture capital (“VC”), being a subset of risk capital, is accessed and allocated in South Africa (“SA”) should benefit the South African economy. For reasons set out later, venture capital is defined in this study as including private equity.

The objective of this study is to better understand the decision-making process of South African venture capitalists (“VCs”). This is set out schematically in Figure 1.1.

The following question is addressed in this study:

When considering a venture capital investment, what considerations do South African venture capitalists apply to:

- 1 the general evaluation of VC investment opportunities,
- 2 specifically in respect of the valuation of VC investment opportunities,
  - the evaluation of risk,

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<sup>2</sup> Bernstein 1996:1

- the required rate of return at each stage in the business cycle of the investment opportunity (eg seed, start-up, expansion, buy-out etc)
  - the valuation methods employed at each stage, and
- 3 the broad application of portfolio theory to their funds, and, where comparative data are available in respect of the above three issues, how do these considerations compare internationally?

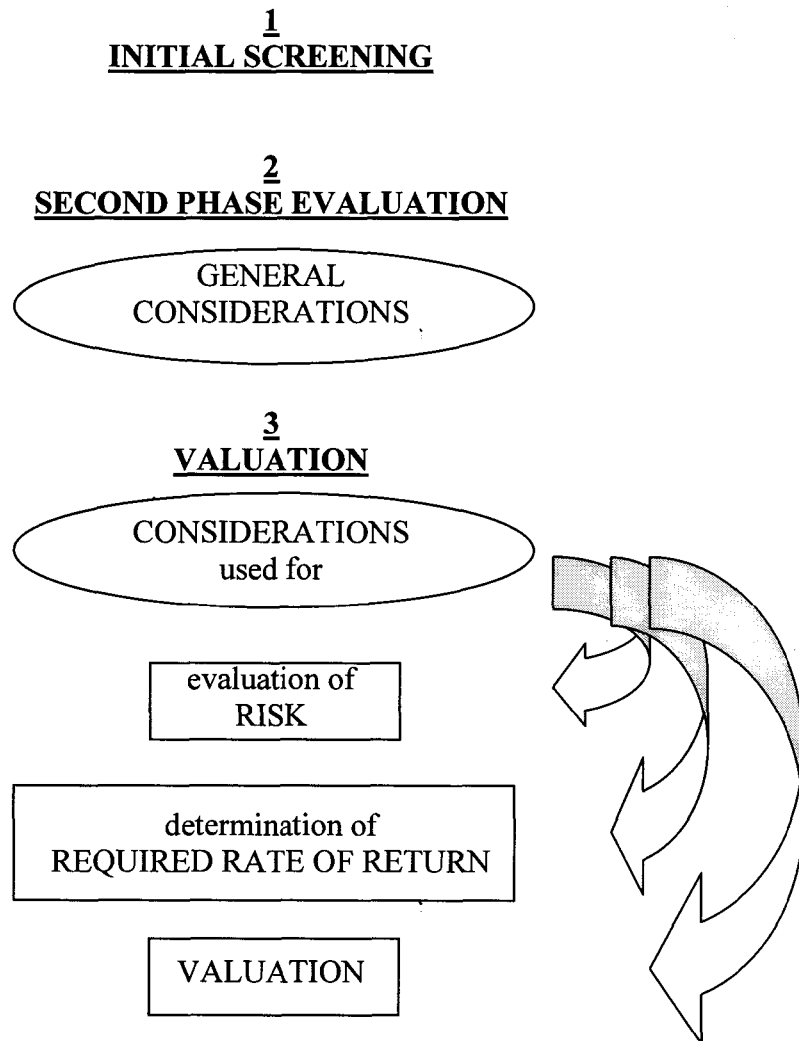


Figure 1.1

Venture capital revolves around the management of risk. “Venture capital firms attempt to reduce the riskiness of their portfolios, either by diversification (syndication) or information gathering (uncertainty reduction)” (Mull 1993:17).

There are few detailed quantitative studies of the VC decision-making process in SA. The South African economy is a melange of developed and emerging economies which suggests that a South African study may deliver interesting results. Therefore

existing international studies may be inappropriate to South African circumstances. This study will resolve this potential problem. In addition to many of the issues raised by various international studies, this study endeavours to extend the general body of knowledge of venture capitalism by examining some broader and deeper issues relating to South African venture capitalists.

The value of this study should be fourfold:

1 SA VCs can see how their practices compare both locally and internationally.

With SA's recent re-admittance into the global community, the South African VC industry needs to understand how it compares to other international VC markets. This will enable it, on the one hand, to benchmark itself in an effort to improve its own performance as well as, on the other hand, to understand unique South African market issues which may explain differences in practices. The SA venture capital market is relatively immature. Consequently many venture capitalists are less experienced than their developed market counterparts and they lack the knowledge of comparative international standard practices.

2 A better understanding of their decision-making process will empower SA VCs to improve their investment performance.

Although VCs make internally consistent decisions, they do not always understand their decision-making process (Zacharakis 1995; Zacharakis & Meyer 1998). Notwithstanding this lack of understanding, VC-backed companies have a greater chance of success than new ventures in general (Dorsey 1979, Davis and Stetson 1984, Bruno & Tyebjee 1982). Mull 1990 also finds quantitative evidence to support the contention that American VCs "achieve higher growth rates in the firms in which they invest than do non-venture capital investors" (Mull 1990:80). Finally, the survival rate of VC-backed firms is higher than that of non-VC-backed businesses (Kunkel & Hofer 1990, Sandberg 1986, Timmons 1994). The failure rate of businesses<sup>3</sup> backed by venture capital is approximately 40 percent in the USA (Zacharakis 1995). Since it is not possible to improve performance if there is no understanding of the underlying process, this study should contribute to a better understanding and thus better performance by South African VCs.

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<sup>3</sup> This refers to earlier stage businesses which exclude buy-outs and buy-ins.

3 Entrepreneurs will benefit if they better understand the VC decision-making process.

Many entrepreneurs are unclear as to how to deal with the approach and evaluation process of a venture capitalist, particularly with respect to the pricing of the proposal. Once passing the initial screening stage, meritworthy investment proposals still often fail to receive a favourable response from venture capitalists.

4 This study should contribute to a growing body of international comparative study of venture capitalism.

Many studies have focused generally on the formal and informal screening criteria used by VCs. This study first examines the general evaluation criteria used by South African VCs and then focuses on the evaluation stage (second phase, detailed evaluation and valuation). It builds on, and extends, a series of comparative international studies conducted in Western and Central Europe and India by the University of Nottingham's Centre for Management Buy-out Research (Manigart, Wright, Robbie, Desbrieres & de Waele 1997, Karsai, Wright & Filatotchev 1997, Karsai, Wright Dudzinski & Morovic 1998, Wright & Robbie 1996, Wright, Lockett & Pruthi 2000). These studies and surveys are referred to throughout this study as "the precedent studies" or "the precedent surveys".

The precedent studies identify the general evaluation criteria and then focus on understanding the second phase evaluation stage of when the venture capitalist conducts a detailed evaluation and valuation of an investment proposal. In particular, the precedent studies consider general evaluation criteria, information sources, the required rate of return and factors (including risk indicators) which affect it, and the valuation methods employed generally. The precedent studies research these issues in the developed countries of the UK, France, the Netherlands and Belgium, the transition economies of Hungary, Poland and Slovakia, and an emerging economy, being India.

This study comprises a survey of South African VCs by way of a questionnaire. In Chapter 2 the literature and theory is reviewed, in Chapter 3 the research methodology is discussed, and the results are presented in Chapter 4. Finally, conclusions are drawn and areas of possible future research are identified in Chapter 5.

## **2 LITERATURE REVIEW & THEORY**

“Investment management is not art, not science, it’s engineering...We are in the business of managing and engineering financial investment risk.” (Charles Tschampion, managing director of General Motors pension fund)<sup>4</sup>

The literature and theory is reviewed by first discussing how the literature was sourced. Thereafter some VC concepts are clarified in an effort to ensure analytical consistency. Third, a brief overview is presented on the development and status of the VC industry both internationally and in South Africa. Fourth, the actual VC decision-making process is considered as a lead-in to the fifth section which reviews the precedent studies in detail. Sixth, the literature on the various criteria used by VCs to evaluate investments is discussed and synthesised. The seventh section deals with the valuation of VC investments. The eighth section covers portfolio theory. The required rate of return and the influence of various risk factors are considered in the ninth section. Finally, some conclusions are drawn in the tenth section.

While considerable research of the VC industry is being conducted, this is only a recent phenomenon. There is a disparate body of research and an attempt is made to draw it together in this wide-ranging and comprehensive literature review.<sup>5</sup>

### **2.1 SOURCING OF LITERATURE**

The explosive growth of the venture capital industry’s public profile has resulted in a plethora of literature on the topic. While there are innumerable magazine and newspaper articles, there is little academic research. This may be ascribed to the fact that venture capital has only recently become a significant investment asset class as

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<sup>4</sup> As quoted in Bernstein 1996:247.

<sup>5</sup> An excellent review of the literature on VC in general is to be found in Wright & Robbie 1998.

well as the difficulty of researching private companies and private investment funds. There is very little public information available other than various annual national venture capital performance surveys.

Most of the newspaper and magazine articles are anecdotal. Because of their general lack of substantiation or peer review, little emphasis has been placed on them, although many of these articles provided useful background to issues confronting venture capitalists in their day-to-day activities.

Both print and electronic information sources were consulted in the preparation of the literature review.

1. Use was made of electronic information sources and databases which included mainly South African material such as:
  - SA Citations,
  - SACat,
  - The Union Catalogue for Thesis and Dissertations (UCTD),
  - NAVTECH, and
  - BORIS (UCT Library's former OPACS).
2. Electronic information sources including mainly foreign material were used such as:
  - ABI Inform,
  - Dissertation Abstracts Ondisc,
  - UMI Proquest Digital Dissertations,
  - MIT Theses and E-Theses Online; and
  - Lexis-Nexis Academic Universe.
3. The on-line facilities offered by the Jagger Library at the University of Cape Town ("UCT") were extensively utilised. Use was also made of UCT's Graduate School of Business library.
4. The Internet was used to source academic papers, venture capital organisation websites and statistics. While the scholarly nature of the sources available through UCT is of a high standard, the Internet was approached with some caution. For this reason, the Internet was mainly used to access *bona fide* websites of various venture capital organisations (such as [www.nvca.com](http://www.nvca.com), [www.evca.com](http://www.evca.com) and [www.bvca.co.uk](http://www.bvca.co.uk)), VC statistics from auditors' websites and, where so recommended by academic colleagues, to websites such as

[www.cob.ohio-state.edu](http://www.cob.ohio-state.edu). Other general venture capital sites were accessed for background information.

5. Contact was made directly with overseas academics who have researched issues relevant to this survey. Both the Harvard Business School and the primary driver behind the precedent studies, the University of Nottingham's Centre for Management Buy-Out Research, were approached.

Interesting anecdotal evidence of the growth in interest in venture capital in South Africa can be derived from the results of a search for venture capital articles. Using the University of Cape Town's on-line facility (SA Citations/ISAP), a search for the adjacent words "venture capital" yielded the following numbers of articles containing the term in South African periodicals: 1996 (0), 1997 (14), 1998 (52), 1999 (71), 2000 (73).

## **2.2 VENTURE CAPITAL CONCEPTS**

Venture capital is well-established in developed countries. Comparative surveys conducted in different countries in different stages of economic development need to be founded on consistent concepts so as to ensure analytical comparability.

The most important concept is that of "venture capital" itself. There is a difference in definition between the American and the European terminology. In America "venture capital" excludes management buy-outs or buy-ins which, when these are included with VC, are classified as "private equity" (nvca.com 2000 <sup>6</sup>). The European Private Equity and Venture Capital Association ("EVCA") notes that "venture capital is, strictly speaking, a subset of private equity and refers to equity investments made for the launch, early development, or expansion of a business. In Europe, these terms are generally used interchangeably and venture capital thus includes management buy-outs and buy-ins" (evca.com 2000 <sup>7</sup>). Furthermore, the precedent studies were based on the European terminology. The South African Venture Capital and Private Equity Association ("SAVCA") has adopted the EVCA terminology (SAVCA 1999).

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<sup>6</sup> <http://www.nvca.com/def.html>, 6/1/2000.

<sup>7</sup> <http://www.evca.com/venture.html>, 6/1/2000.

Therefore, unless otherwise stated, "venture capital" and "private equity" will be used interchangeably in this study and defined as describing equity or quasi-equity investments in (generally) unlisted businesses seeking strong growth (ie this excludes so-called "lifestyle" businesses<sup>8</sup>). Where the American terminology is intended, reference will be made to "(US) VC". The differences in definition are set out schematically in Figure 2.1.

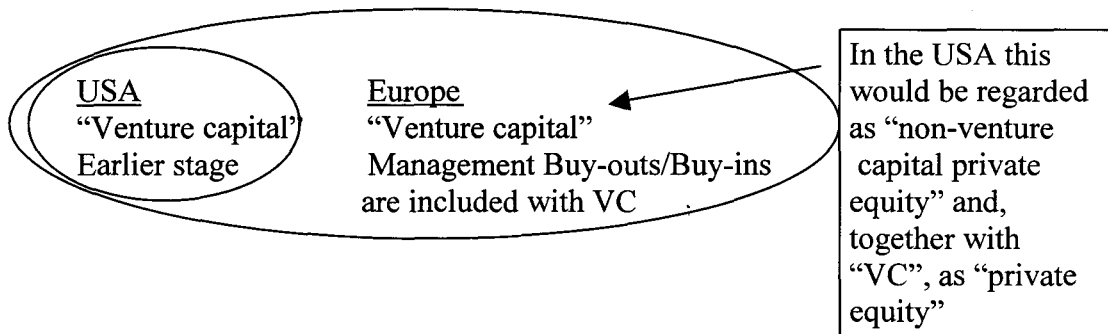


Figure 2.1

An important implication of the foregoing discussion relates to the comparability of studies conducted by US researchers and those conducted by European researchers. Aggregated results in respect of the US VC industry will be based on a smaller, earlier stage subset of investments than those in Europe which will include management buy-outs and buy-ins. Caution should therefore be exercised in making comparisons between US and European studies. This caution appears to be rarely observed in comparative studies where the practices of US VCs are compared, for example, to European practices (eg Knight 1994). Many of the South African studies simply assume that research on VC in the USA applies to VC as defined by SAVCA. The confusion in South Africa is not helped by SAVCA stating on one hand that it follows the European convention (SAVCA 1999, SAVCA 2000) and on the other hand it endorses the American usage in the performance survey it has conducted with the accounting firm, KPMG (KPMG 2000). Even more mature and larger VC associations such as the European Venture Capital Association create confusion: the EVCA Mid-Year Survey 2000 (EVCA News Network 2000:1) defines VC more broadly than KPMG, but more narrowly than the definition in its own website (evca.com 2000)!

<sup>8</sup> A "lifestyle" business is not focused on growth, but only on achieving a size that will provide the owner with a certain lifestyle (for example, much of Business Partners' financing falls into this category).

It is submitted that the various national VC associations could perform a useful exercise in resolving the definitional issues surrounding the term “venture capital”. This confusion might be dealt with by the national associations agreeing upon the accepted terminology. The terminology is less important than the value of having consistent concepts: a rose by any other name would smell as sweet.

The precedent studies were conducted across the United Kingdom, the Netherlands, Belgium, France, Slovakia, Hungary, Poland and India. These are countries of great cultural, linguistic and economic difference. It would appear that a common glossary was not used in these surveys, which could potentially call the comparability of the results into question.

However, the precedent surveys were conducted largely by the same researchers, and the European Private Equity and Venture Capital Association defines most of these terms on its website (evca.com 2000<sup>9</sup>), although it is unclear whether the terms were similarly defined in 1995 when the European studies were done. In any event, it is submitted that many of the concepts are reasonably well understood and, other than noting this potential problem, it has been assumed that the terms enjoyed a common understanding by respondents to these surveys.

The accounting firm, KPMG, and the South African Venture Capital and Private Equity Association have recently conducted two performance surveys on members of SAVCA (KPMG 2000 and KPMG 2001). Notwithstanding the difference in definition of “venture capital” the SAVCA/KPMG glossary is materially consistent with the EVCA definitions (evca.com 2000<sup>10</sup>).

Finally, the term “venture capitalist” needs some elaboration. In this study, venture capitalists were regarded as those institutions with discretionary control<sup>11</sup> over funds which they have raised<sup>12</sup> for the purpose of making venture capital investments. The views of these types of institutions were sought because they could be expected to apply experienced, independent views of the VC market. Captive funds, which still make a large proportion of the VC industry in SA, are also included in the survey. A

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<sup>9</sup> <http://www.evca.com/pdf/Definitions.pdf>, 6/1/2000.

<sup>10</sup> <http://www.evca.com/pdf/Definitions.pdf>, 6/1/2000.

<sup>11</sup> This discretion will be subject to the fund investment mandate and perhaps investor representation on the investment committee of the specific fund.

<sup>12</sup> This means that they do not act as agents or raise funds on an *ad hoc* basis.

further distinction is made between the institutions (which manage different pools of funds) and the individual funds themselves<sup>13</sup>. Responses were sought from as many funds as possible. It is possible that one institution may manage several funds. This might mean that one institution would furnish several identical responses for each fund because each fund served the same market. However, where the institution had several funds which serve different markets (eg a buy-out fund and a high tech early stage fund), then the responses by each individual fund would likely be different in respect of the criteria, required rates of return and valuation techniques.

In reviewing the membership list of the South African Private Equity and Venture Capital Association and the researcher's private database of VC market participants as a source of potential respondents, intermediaries and institutions which raise *ad hoc* funds for individual projects were excluded since their views on the evaluation of investments are primarily determined by their investors or principals on a deal-by-deal basis. Also excluded were those which primarily supply debt or fund lifestyle businesses.

### **2.3 THE STATE OF THE VENTURE CAPITAL INDUSTRY**

#### **DIFFERENCES BETWEEN VENTURE CAPITAL AND TRADITIONAL CORPORATE FINANCE**

While corporate finance theory holds true in a venture capital setting, there are some important features of VC which give rise to differences in the application of corporate finance theory (Wright & Robbie 1998). The primary issue which drives these differences is the lack of publicly available information about VC investments which necessitates far closer and more active monitoring of investments than is required in the public markets where investment strategies are more passive. More active monitoring of VC investments is also driven by the lack of liquidity of shares in private companies. The application of typical corporate governance mechanisms is

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<sup>13</sup> The SAVCA/KPMG surveys similarly make the distinction between VC 'firms' and VC 'funds'.

also insufficient in a VC investment and powerful contractual rights are normally required by investors to manage the conflicts identified in agency theory. Capital raising by entrepreneurs is restricted to a relatively small group of VC financiers rather than the broad public markets. Although this is less so with management buy-outs, the raising of finance is still not as efficient as in the public markets. The valuation process in a VC setting is constrained by the lack of history and a greater uncertainty in respect of future cash flows. This means that the palette of valuation methods available to a VC is not as large as those used in the public markets. The valuation process is further complicated by the real options inherent in the staging of VC investments which are not typically available in the public markets. These differences are further analysed later when the concept of the perfect capital market is examined.<sup>14</sup>

## INTERNATIONAL

The international venture capital industry has largely taken its cue from developments in the USA. The venture capital industry as we know it today began developing in the USA in the 1950s and 1960s (nvca.com 2000) driven largely by wealthy individual investors (“business angels”<sup>15</sup>). This was the dominant method of investment until the end of the 1970s. The evolution of the limited partnership in the early 1980s coupled with subsequent regulatory and fiscal changes resulted in explosive growth in the American venture capital market. Professional venture capital fund managers proliferated and from 1980 to 1995 managed funds grew from US\$ 4.7 billion to US\$ 175 billion (Fenn, Liang & Prowse 1997). During this period venture capital (as defined in the USA) grew fifteenfold and non-venture capital private equity (as defined in the USA) grew a massive sixty five times (Fenn et al 1997).

In the UK market the growth lagged the USA, but was no less explosive (O’Hanlon 1990). Indeed, the buy-out sector of the UK private equity market has, as with the USA, been preferred because it has generated better returns for less risk (O’Hanlon 1990). More recently (since about 1995 in the USA and about 1998 in the UK) venture capitalists have directed a greater proportion of funds into earlier stage

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<sup>14</sup> See also Bygrave & Timmons 1992.

<sup>15</sup> See Freear, Sohl & Wetzel 1995 for a discussion of the role of business angels in the American VC market and both Harrison & Mason 1992 and Mason & Harrison 1996 for an international perspective.

investments. This has been driven largely by the enormous growth in the information technology sector (such as software, the Internet, electronics, wireless and telecommunications). Notwithstanding the recent market corrections in this regard, this growth is expected to continue. As might be expected in a growing market, average returns for VC funds have fallen internationally since the early 1980s (Wright & Robbie 1998).

The PricewaterhouseCoopers and 3i “Global Private Equity 2000” survey which focuses on 6 regions worldwide found that US\$ 136 billion had been raised in the 12 months to mid-2000, an increase of 5 percent from the previous year (as reported in Business Day 2000). While a considerable amount was uninvested, the sectors seeing the greatest growth in attention were technology investments (at US\$ 45 billion, up to 33 percent from 29 percent the previous year) and early stage investments (at US\$ 22 billion, up to 16 percent from 11 percent the previous year). The USA accounted for 73 percent of the total raised (US\$ 99.4 billion), nearly four times that in Europe.

The emerging markets have embraced venture capital for reasons which include the decline of Communism, globalisation, weak public markets and an improved regulatory environment. Notwithstanding this, many emerging economies have inexperienced venture capital industries both due to the relative youth of the industry and also due to infrastructural and macroeconomic conditions (Aylward 1998a, Karsai et al 1997 and 1998, Sagari & Guidotti 1992, Wright et al 2000). The infrastructural problems which may bedevil an emerging economy refer not only to power, communications and transport, but include matters such as the legal entities which VCs may use and which are often not appropriate for marrying the interests of the VC manager and those of the investors (Barger, Carter & Kuczynski 1996). In addition, emerging economies may face challenges relating to the legal and fiscal environment, and the existence, health and liquidity of public markets where exits may be effected.

It would appear that the basic financial theory of VC is applicable to developing countries in much the same way as it applies to developed countries. In a study of European and Asian VC practices, Aylward 1998a:239 notes that “the investee company structure and governance arrangements used in venture capital in developing countries depend on characteristics of investee company assets in ways that they

typically do in standard corporate finance practices elsewhere. There do not appear to be any inherent differences in venture capital in developing countries that would make corporate finance norms generally inapplicable". Thus, while South Africa may be subject to special circumstances which may distort the results of this study, none of the circumstances should be so different that they result in a fundamental deviation from accepted financial theory of VC.

The above assertion, that corporate finance theory in developed countries is largely applicable to developing countries, should be seen in a more complex context. In an extensive review of the literature on venture capital, Wright & Robbie 1998 explore the linkages between various areas of disparate study of VC and tie them back to an overall view of the current state of knowledge of VC. In so doing, they highlight some difficulties in applying some of the accepted theories of finance, particularly corporate governance issues relating to the agency problem.

Aylward 1998b studied VC trends in Central and Eastern Europe and also in Asia drawing on the membership of the local associations, IFC investees and the author's own database. Aylward 1998b found that the median return on realised investments was 26% (in US\$) measured up to mid-1995.

In a study of the international competitiveness of developing countries for risk capital, Hiemenz, Nunnenkamp, Agarwill, Langhammer & Spinanger 1991:130 points out that "macroeconomic instability and policy-induced distortions of goods and factor markets were all shown to significantly reduce locational advantages of individual countries in the international competition for investable funds".

## SOUTH AFRICA

Relatively little VC research has been conducted in South Africa. The business press comprises largely anecdotal reporting and much of the student work which has been done is unpublished and qualitative in nature. However, good quantitative surveys conducted in South Africa to date are those of SAVCA and KPMG (KPMG 2000 and KPMG 2001) which assessed the composition and performance of VC funds in South Africa during 1999 and 2000. For the 1999 survey, KPMG identified 55 private

equity firms in South Africa. Questionnaire responses were received from 29 of them and information was gathered on a further 11 non-respondents. For the 2000 survey, KPMG identified 56 potential private equity firms. 30 responses representing 41 funds were received. Information was gathered on a further 16 non-respondents. This suggests that there has been little growth in the number of participants in the South African industry which is now nearing maturity. While there is legitimate criticism of performance surveys generally<sup>16</sup>, it is submitted that the KPMG 2001 figures are the best that are available. It is expected that the annual SAVCA/KPMG survey will continue to gather momentum and credibility in the VC industry.

The VC industry still largely comprises captive funds, although independent funds are growing. R 33.1 billion of private equity funds is under management including R 7.5 billion of undrawn commitments (KPMG 2001). Total VC investments as at the end of 2000 were US\$ 4.3 billion which, to put this in perspective, is approximately 4.2 percent of South Africa's gross domestic product (KPMG 2001). This is a greater percentage than the UK (2.3 percent), the Netherlands (1.3 percent), and Sweden (1.2 percent) and compares favourably with the USA (4.9 percent) (KPMG 2001). This is an indication of a maturing of the South African VC industry.

Campbell 2000 estimates that at the beginning of 2000, South Africa's VC market comprised some 77 institutions. This appears high, and may be explained by the possibility that this figure includes a number of intermediaries which raise VC funds for individual investments on a commission basis. It is also possible that included in the number of institutions are a number of funds managed by the same institution or corporate group. Campbell found that the vast majority (77 percent) of VC institutions is based in Gauteng. KPMG identified about 55 funding institutions in

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<sup>16</sup> The criticisms of performance surveys encompass a lack of transparency and consistency. The results are affected by whether unrealised or realised returns are included. In the USA, for example, only realised returns are included whereas in the Netherlands unrealised returns (which often includes the poorer returns of non-performing investments) are also included which generally results in lower overall returns. For example, between 1986 and 1990 Dutch VC returns were 13 percent overall and -3 percent for early stage (Wright & Robbie 1998). The method of valuation of unrealised investments is crucial. Although VC valuation guidelines (which are voluntarily applicable) generally require recent unrealised investments to be valued at cost, older unrealised investments may be valued in several ways. Furthermore, some surveys measure gross IRRs and others measure net IRRs (ie after deduction of all the fees and costs of the fund). These comments are not designed to refute the value of the SAVCA/KPMG performance surveys, but rather to place them in the context of the challenges faced by this kind of research. KPMG 2001:18 sets out clearly the limitations to its own research on IRRs and why it elected to produce a more modest but intellectually defensible set of results.

1999 and this figure had not increased by much as at the end of 2000 where KPMG only identified 56 funding institutions (KPMG 2000, KPMG 2001). This may partly be because the world-wide decline in technology VC performance since April 2000 has shaken out the market resulting in considerable attrition amongst VC funds.

Campbell found that about half of the institutions had some kind of foreign influence through either foreign ownership or executives with foreign experience and is of the opinion that this will enhance the quality of participation in the South African industry. Most VC institutions were younger than three years in 2000 (Campbell 2000). This relative lack of maturity of the SA industry is corroborated by Watling 1998, a study of VC investment monitoring in South Africa, which reveals that only 5 of the 31 VC respondents had been in VC for longer than 10 years.

Several South African studies have highlighted the fact that most South African VCs seem to eschew early stage and start-up investments (Stillman, Sunderland, Heyl & Swart 1999, Campbell 2000). By way of apparent contradiction, another recent survey noted that 40 per cent of the SA investors which were surveyed invested in start-up initiatives and fully 70 per cent invested in early stage investments (Capital B Management 1999). This contradiction may be explained in that the Capital B Management result is likely influenced by the relatively small sample of respondents and respondents possibly stating intent rather than fact. For example, 40 per cent of institutions may well target a small portion of their funds to start-ups, but may not find meritworthy opportunities and, when they do, they may still only commit a relatively small amount of funding.

The issue of risk aversion is more elegantly dealt with by considering actual investment of total funds by SA VC institutions<sup>17</sup>. As at the end of 1999, only 0.4 percent of funds invested had been made in seed investments and only 5.7 per cent in start-ups and early stage opportunities (KPMG 2000). This is comparable with a level of 6 percent in the European market in 1995/6 (Wright & Robbie 1998). However, the percentage investment (by funding value) had increased to almost 19 percent in Europe in 2000 (EVCA News Network 2000). In keeping with this trend, by the end of 2000, KPMG 2001 found that 25 percent of investments (by funding value) were

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<sup>17</sup> Wells 1974 regards VCs as risk averse because the risk premia they apply to their valuations exceed their own measures or proxies of risk by a substantial margin.

made in seed and early stage opportunities. Obviously, given the lower average value of earlier stage investments, the number of companies receiving earlier stage funding comprises a significantly higher percentage of total companies receiving funding across all stages of VC investment.

KPMG 2001 identifies South African VCs as having invested R3.4 billion in 2000. This was divided amongst the various stages of the business cycle and is summarised in Table 2.1.

| <u>Stage</u>          | <u>Percentage invested</u> |
|-----------------------|----------------------------|
| Seed                  | 10%                        |
| Start-up and early    | 15%                        |
| Expansion             | 20%                        |
| Buyouts & replacement | 55%                        |

Source: KPMG 2001

Table 2.1

KPMG estimates that there are a total of about 319 investment executives in the domestic industry (KPMG 2001), many of whom have consulting backgrounds (Campbell 2000). Mullet 1998 points out that many of these executives have corporate finance experience which is rooted in merchant banking and an accountancy training. This background has often been anecdotally raised as the reason why SA VCs are regarded as risk averse.

Campbell 2000 concludes that, while the South African VC market is “young and in a state of flux...there are indications of maturity” (Campbell 2000:117). Campbell 2000 also makes the unsubstantiated claim that the investment screening process amongst South African VCs is as rigorous and “at least on a par with their USA counterparts” (Campbell 2000:120), although they may place emphasis on different areas to their American peers.

An interesting feature of South African venture capital has been the growth of so-called “empowerment” funds being those with a stated policy of favouring investments which empower previously disadvantaged communities in South Africa. Campbell 2000 estimates that about 20 percent of VC institutions have adopted this

kind of policy. The instant study may shed light on whether empowerment funds require a different rate of return to their non-empowerment peers. The empowerment issue is addressed in the design of the instant questionnaire to include questions relating thereto. This is dealt with more fully in Section 3.2 of Chapter 3.

Table 2.2 summarises the gross internal rates of return (“IRRs”) as reported by each of the respondents in the KPMG/SAVCA studies for 1999 and 2000. Obtaining this kind of information is a sensitive matter for obvious reasons. An IRR is the discount rate at which the net present value of a series of cash flows is equal to zero. It should not be confused with the opportunity cost of capital<sup>18</sup>. The reported IRRs are set out in Table 2.2. SAVCA has recently adopted the British Venture Capital Association (“BVCA”) valuation guidelines in an effort to standardise the valuation of a fund’s underlying investments which make up its reported IRRs. The impact of these valuation guidelines will be discussed later. While in the KPMG/SAVCA study for 1999, 18 VCs claimed to have applied either the BVCA or SAVCA Valuation Guidelines, in the same study for 2000, only 13 VCs applied the Valuation Guidelines, a disturbing trend. Due to both this and other inconsistencies identified by KPMG, the results should be treated as merely indicative. Note that “realised” returns are those where an actual valuation event has taken place and “unrealised” returns are those where the VC institution applies its own valuation to the underlying investments<sup>19</sup>.

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<sup>18</sup> “Here is a word of caution. Some people confuse the internal rate of return and the opportunity cost of capital because both appear as discount rates in the NPV formula. The internal rate of return is a *profitability measure* which depends solely on the amount and timing of project cash flows. The opportunity cost of capital is a *standard of profitability* for the project which we use to calculate how much the project is worth. The opportunity cost of capital is established in capital markets. It is the expected rate of return offered by other assets equivalent in risk to the project being evaluated” (Brealey & Myers 1991:81).

<sup>19</sup> While the realised IRRs would be less subjectively calculated typically reflecting assets valued by the open market, they will, however, exclude the negative effects of investments which are difficult to exit.

INTERNAL RATES OF RETURN REPORTED BY RESPONDENTS TO SURVEY

| Year                      | <u>2000</u>                             |                                         | <u>1999</u>                             |                                         |
|---------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|
|                           | Total gross IRR since inception of fund | Realised gross IRR since fund inception | Total gross IRR since inception of fund | Realised gross IRR since fund inception |
| Number of funds reporting | 14                                      | 10                                      | 9                                       | 10                                      |
| IRR below 15%             | 4                                       | 2                                       | 3                                       | 3                                       |
| IRR between 15% and 40%   | 4                                       | 1                                       | 2                                       | 2                                       |
| IRR in excess of 40%      | 6                                       | 7                                       | 4                                       | 5                                       |

Source: KPMG 2001:19

Table 2.2

It is useful to note that the Johannesburg Stock Exchange permits an initial public offering to three different boards, each with its own set of requirements. A “main board” listing has the most stringent listing requirements in SA. A “development capital” listing has less stringent requirements and a “venture capital” listing has the least stringent requirements. The Johannesburg Stock Exchange’s use of the term “venture capital” typically refers to young, high risk, listed companies rather than unlisted companies (which are the arena of the VC investor). Thus the venture capital board is a potential exit mechanism for VCs (notwithstanding that, to some extent, it is an alternative source of finance to VCs themselves). Accordingly, the Venture Capital board is ignored for the purposes of this study.<sup>20</sup>

Stillman 1999 analyses those funds which focus on socially responsible investment in black empowerment initiatives<sup>21</sup> and notes that almost all exclude investments of less than R2 million, thus ignoring the vast majority of black entrepreneurial businesses requiring funding.

A valuable study in respect of black empowerment is embodied in two papers, KNC

<sup>20</sup> See also Loubser 1998.

<sup>21</sup> Any reference to ‘black empowerment’ should be seen as a reference to the empowerment of any previous disadvantaged group in South Africa, not just African people.

2001a and KNC 2001b, which investigates the black empowerment issues prevalent in the South African venture capital industry. It echoes the distinction drawn by the Black Economic Empowerment Commission between the narrow definition (merely the transfer of ownership, often to small groups of black businesspeople) and the broad definition of empowerment (which envisages the transformation and broader participation of black people in the economy). KNC 2001b notes that the difficulties which black entrepreneurs face in raising venture capital and conclude that for structural reasons, the VC industry is generally not geared to handle the unique issues of empowerment.<sup>22</sup> Their empowerment proposals endeavour to address these structural issues.<sup>23</sup>

#### **2.4 THE VENTURE CAPITAL DECISION-MAKING PROCESS**

Many studies have examined the separate steps that make up the investment decision-making process of VCs (Wells 1974, Pence 1982, Tyebjee & Bruno 1984, Silver 1985, Hall & Hofer 1993). While there are some minor differences in terminology and whether certain steps should be split up further, the analyses are all largely similar. For the sake of convenience, the analysis of Hall & Hofer 1993 is used in this study.

Hall & Hofer 1993 identifies five broad steps or processes, being “deal originating” (finding potential investments), “screening” (first phase, initial filtering), “evaluation”

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<sup>22</sup> These include, first, the quality and experience of previously disadvantaged people who, by definition, will need mentorship and training. Second, there is an equity gap between the small size of the average empowerment initiative and the preferences of VCs. Third, VCs typically require that the entrepreneur has invested some of his or her own funds which requires a personal capital base not usually available to the average black person. Other underlying problems are the high transaction costs of investments and the greater aversion to risk found in less wealthy people. See also Ferreira & Potgieter 1989.

<sup>23</sup> While outside of the scope of this work, some comments on empowerment initiatives are in order. Black empowerment is a complex issue with noble intent. It has often been implemented naïvely, at best, and cynically, at worst, with little thought being given to its financial implications and its philosophical and social underpinnings. It is submitted that the fact that many black empowerment initiatives have failed or underperformed since 1999 provides an opportunity for black empowerment protagonists to recapture this runaway train and craft initiatives that satisfy not only the hue of annual financial reports, but also the needs and aspirations of those who continue to suffer hardship due to historical imbalances in South Africa. A healthy realism and committed integrity would ease this process.

(second phase, detailed examination and valuation), “deal structuring” (agreement of contractual terms) and “post-investment activities” (investment monitoring and value realisation).

The evaluation stage (second phase, detailed examination and valuation) can be further subdivided. During evaluation, venture capitalists will typically follow sub-process in their investment-making cycle as follows (Manigart et al 1997):

1. Gathering of information on the investment opportunity, management and profit potential.
2. Use of information to estimate the expected cash flows and profit potential.
3. Use of information to appraise the investment opportunity's risk and thus the required rate of return.
4. Application of one or more valuation methods.

The various stages are set out schematically in Table 2.3.

#### VENTURE CAPITAL DECISION-MAKING PROCESS

| 1                | 2         | 3                                                                                                                                                                                                                                                               | 4                | 5                          |
|------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------|
| Deal origination | Screening | Evaluation                                                                                                                                                                                                                                                      | Deal structuring | Post-investment activities |
|                  |           | SUB-PROCESSES:<br>1. Gathering of information on investment, management and profit potential<br>2. Estimation of cash flows and profit potential<br>3. Appraisal of risk (and hence required rate of return)<br>4. Application of one or more valuation methods |                  |                            |

Table 2.3

Notwithstanding the identification of separate stages in the general evaluation of investment opportunities, only a few studies (such as Wells 1974, Hall & Hofer 1993, Zacharakis 1995, Zacharakis & Meyer 1998) make the distinction between these stages when considering which evaluation criteria are applied. While conceptually

there are distinct sub-processes, the entire process does not, in practice, happen in a sequential or compartmentalised fashion. The process is largely an iterative one (Manigart et al 1997) and this makes this kind of study difficult to conduct in a satisfactory manner. "This means not only that it is highly probable that different criteria are used in different stages but also that any new research of venture capitalist decision-making must use methodologies that can and will capture any possible differences among stages. It also means that the findings reported to date have probably 'mixed' different stage criteria and possibly even generated some spurious results" (Hall & Hofer 1993:29). The issue of the stage at which criteria are applied will be revisited later when the literature on evaluation criteria is reviewed. Suffice to say at this point that there are good reasons why the time at which criteria are applied may be a red herring.

It has further been shown that the application by venture capitalists of criteria to the general screening process is both poorly understood and potentially subjective (Zacharakis 1995, Zacharakis & Meyer 1998). Further, it would appear that intuition is used interstitially by venture capitalists to fill the gaps between theory and practice. This means that studying the decision-making process is complicated by unarticulated non-rational prejudices and personal preferences. While this is not unusual in other investment asset classes, it is compounded by both poor market efficiency in the venture capital market and the lack of the investee's pre-investment track record.

Manigart et al 1997 assumes that the investment opportunity has passed the initial screening successfully. The second phase evaluation (which includes a valuation) is in progress. "Recent research...has shown that the due diligence<sup>24</sup> process is an iterative one, where the first step is to assess whether a proposal meets the investment criteria of the venture fund (for example, with respect to the investment stage, sector,

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<sup>24</sup> In South Africa the term "due diligence" typically refers to a verification process which takes place after a transaction has been agreed, but before cash is actually invested. Investment transactions are usually subject to a "due diligence" investigation at which stage the investor is afforded an opportunity of verifying the correctness of statements which were made by the entrepreneur. This might, for example, include verifying the incorporation of the investee company, reviewing original supply agreements, checking that patents are indeed registered, and ensuring that the staff incentive scheme is duly constituted. The precedent studies (including, for example, Hall & Hofer 1993) regard due diligence as a broader concept which includes detailed evaluation of the potential of the investment opportunity. "Venture capitalists perform an extensive due diligence process before investing in a company. In this way, they want to minimise their investment risk by getting to know the entrepreneur or the management team, the product, and the market potential presented in the investment proposal...(T)he due diligence process is an iterative one, where the first step is to assess whether a proposal meets the criteria of the venture fund..." (Manigart et al 1997:29).

or magnitude of the investment proposal) and whether the proposal is viable at first sight. A formal valuation of a company will only be performed when the proposal passes this initial test” (Manigart et al 1997:29).

The presentation above regarding the different stages of the decision-making process is a useful conceptual model. It may be less useful in understanding the practice of a VC in evaluating and valuing an investment opportunity. For example, Wright & Robbie 1996 and Manigart et al 1997 seek to evaluate the documentation used by venture capitalists at the “valuation” stage. In practice, the entire process of evaluating the investment opportunity contributes to the venture capitalist’s assessment of value<sup>25</sup>. Thus, while this exercise may be valid conceptually, it is submitted that in practice it would be difficult for a VC to determine at what stage he or she was considering certain documentation. This complexity is further compounded by the lack of understanding of the decision-making process (Zacharakis 1995).

As a further example, Manigart et al 1997 notes from a European survey that venture capitalists generally do not consider the curriculum vitae of management as an important document at the time of conducting the valuation, arguing that this is contrary to the well-regarded notion that the quality of management is a primary indicator of the success of a venture capital investment opportunity. Manigart et al 1997 may be correct, but the conclusion does not necessarily follow from this argument. It is submitted that few venture capitalists will actually read the curriculum vitae at the time that they are determining, for example, the required rate of return. Rather they will have previously read the curriculum vitae, have met management, and have an intuitive feel for management’s capabilities and the risk inherent in management’s capabilities.

It is submitted that, while still subjective, research on valuation methods during the valuation exercise is somewhat less subjective than the general screening process. This is because the venture already enjoys a positive view from the venture capitalist,

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<sup>25</sup> It is reasonable to assume, for example, that the evaluation of the riskiness of an investment starts from the first exposure of the venture capitalist to the entrepreneur and continues through to the final conclusion of the investment transaction. Even in the final negotiation, a venture capitalist may decide that the way in which the entrepreneur is negotiating is in bad faith and this increases his earlier sense of the risk associated with this particular investment.

it falls within the venture fund criteria, and the valuation is about to be conducted with a view to negotiating an investment.

## **2.5 THE PRECEDENT STUDIES**

This study builds on, and extends, a series of comparative international studies conducted in Western and Central Europe and India by the University of Nottingham's Centre for Management Buy-out Research (Manigart et al 1997, Karsai et al 1997, Karsai et al 1998, Wright & Robbie 1996, and Wright et al 2000) ("the precedent studies").

### **WRIGHT & ROBBIE 1996 (UK)**

Wright & Robbie 1996 focuses on the general policies which are applied during the second phase detailed screening by UK venture capitalists in respect of their due diligence, valuation techniques, required rates of return and risk indicators. Wright & Robbie 1996 assessed these matters by conducting a survey of full members of the British Venture Capital Association ("BVCA") in early 1994. In order to overcome the challenges of uncertain future prospects and adverse selection<sup>26</sup>, venture capitalists consider a wide range of information, both accounting and non-financial. A thorough due diligence is conducted which includes testing the robustness of the financial projections and often the use of sensitivity analyses. Wright & Robbie 1996 concentrates on the second phase detailed evaluation of the investment opportunity which includes a valuation.

Wright & Robbie 1996 grouped valuation methods broadly into asset value, price earnings multiple and discounted future cash flow ("DCF") methods. It found that the most commonly used methods fell into the group comprising price earnings multiples. These results are summarised in Table 2.4 below.

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<sup>26</sup> "Adverse selection occurs when one party misrepresents her or his abilities to the other" (Zacharakis 1997:30).

## METHODS USED IN VALUING POTENTIAL INVESTMENTS (BVCA)

| <u>Ranking</u> | <u>Valuation Technique</u>                                    | <u>Mean score*</u> |
|----------------|---------------------------------------------------------------|--------------------|
| 1              | Capitalised maintainable earnings (PE multiple) (prospective) | 4.31               |
| 2              | Capitalised maintainable earnings (PE multiple) (historical)  | 4.27               |
| 3              | Capitalised maintainable earnings (EBIT multiple)             | 3.91               |
| 4              | Recent transaction prices for acquisitions in the sector      | 3.63               |
| 5              | Discounted future cash flows                                  | 3.23               |
| 6              | Industry 'rule of thumb' ratios (eg turnover ratios)          | 2.97               |
| 7              | Responses to solicit bids for the investee (initiated by VC)  | 2.74               |
| 8              | Historic cost book value                                      | 2.42               |
| 9              | Dividend yield basis                                          | 2.22               |
| 10             | Liquidation of assets (orderly sale)                          | 2.05               |
| 11             | Replacement cost asset value                                  | 1.98               |
| 12             | Recent PE of the parent company's shares                      | 1.97               |
| 13             | Liquidation of assets (forced sale)                           | 1.97               |

\* Where 5=almost always used and 1=almost never used

Source: Wright & Robbie 1996:158

Table 2.4

Over 80 percent of respondents placed greatest reliance on one valuation method and used the others as a check. Also, many VCs made use of the internal rate of return of an investment as a measure of performance notwithstanding the theoretical drawbacks of this approach.

Insofar as appraising the investment was concerned, the most important features related to management. In order, this included proven leadership, thorough familiarity with the chosen sector and then the ability to evaluate and react to risk well. Further, a capacity for sustained effort, a relevant track record, good references, a thorough and coherent business plan, sound financial controls and a strong market niche for the product were all regarded as essential (scoring 4 or over on a five point Likert scale).

Wright & Robbie 1996 also examines the rates of return required by venture capital investors and how these are arrived at. The benchmark required IRR was a mean of 29.2 percent (a median of 30 percent)<sup>27</sup>. The earlier the stage of investment, the higher was the required IRR. Adjustments were made for smaller deals (an increase of 3.9 percent) or those which would require greater “post-deal reorganisation” (an increase of 7.6 percent).

Further, Wright & Robbie 1996 shows that the majority of BVCA members “felt that it was important or essential that the proposed investment met a specific rate of return on equity according to the individual characteristics of each investment, though the size of the standard deviation indicates that a substantial minority of venture capitalists do not share this view” (Wright & Robbie 1996:162).

Factors which affected the required rates of return were studied. The most common factors were, in order, the expected time to exit, market conditions in the investee sector, general economic conditions, the investee sector itself and, finally, the expected gearing ratio. Changes in general financial variables were considered relatively unimportant. Also less important were the size of the investment, geographical location and whether a majority of the equity was held.

The riskiness of the investment was assessed on the basis of management’s contribution of skills followed by the state of the market targeted by the investee’s product. While still important, actual financial contribution by management was less important as a risk indicator, as was the expected time to exit.

Wright & Robbie 1996 also shows that “venture capitalists focusing on later stage investments placed significantly greater emphasis on valuation methods which made use of past performance information and sale prices than did those also prepared to fund early stage projects. The latter placed greater emphasis than the former on DCF valuation methods” (Wright & Robbie 1996:164). VCs targeting later stage investments rated the importance of financial information more highly than VCs looking at early stage investments, presumably owing to the greater reliability of trading track records.

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<sup>27</sup> Presumably these returns are denominated in Pounds Sterling.

Wright & Robbie 1996 shows that differences in practice arise between venture capitalists and analysts of publicly quoted ordinary shares<sup>28</sup>. Differences also arise amongst venture capitalists on the basis of whether they are independent or captive funds on the one hand, and whether they focus on all stages in the investment cycle of the business or whether they concentrate only on later stage investments. Independent funds have to raise their own funds from third parties while captives have access to the balance sheet of their parent. In addition to the challenges of fund raising and reporting to investors with which an independent fund must deal, the independent fund typically has a fixed life time and is forced to focus more aggressively on quick value realisation than a captive fund. Furthermore, because many captives have financial institutions as parents, they are inclined to prefer later stage projects. In 1994, independent VCs in the UK invested 54% of all new funds invested<sup>29</sup>.

#### MANIGART ET AL 1997 (UK, FRANCE, THE NETHERLANDS & BELGIUM)

Manigart et al 1997 extends the study of Wright & Robbie 1996 to France, the Netherlands and Belgium by surveying members of the respective national venture capital associations. They found that there are noticeable differences between each of these countries and the UK insofar as required rates of return, valuation techniques and informational requirements are concerned.

Manigart et al 1997 uncovers some striking differences in the required rates of return across the various countries (Belgium and the Netherlands yielded very similar results and are grouped together)<sup>30</sup>. The required rates of return are set out in Table 2.5.

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<sup>28</sup> See, for example, Arnold & Moizer 1984.

<sup>29</sup> While not properly comparable, in South Africa 40 percent of funds by value was managed by independents in 2000 (KPMG 2001).

<sup>30</sup> Differences in attitude towards value realisation between UK and French entrepreneurs is evident from Bleackley, Hay & Robbie 1996. See also Franks & Meyer 1990.

REQUIRED INTERNAL RATE OF RETURN PER INVESTMENT STAGE,  
EXPRESSED IN NATIONAL CURRENCIES

| <b><u>MEDIAN OF<br/>REQUIRED IRRs</u></b> | <b><u>UK</u></b> | <b><u>FRANCE</u></b> | <b><u>BELGIUM/<br/>NL</u></b> |
|-------------------------------------------|------------------|----------------------|-------------------------------|
| Overall (all stages)                      | 30%*             | 25%                  | 15%                           |
| Seed/start-up/early                       | 46-55%           | 36-55%               | 31-35%                        |
| Expansion/development                     | 26-30%           | 21-25%               | 21-25%                        |
| MBO                                       | 31-35%           | 26-30%               | 21-25%                        |
| MBI                                       | 31-35%           | 26-30%               | 21-25%                        |
| Secondary                                 | Not asked        | 26-30%               | <20%                          |

\*The mean required rate of return was 29.2%.

Source: Manigart et al 1997:37

Table 2.5

Two potential issues which are not dealt with expressly in Manigart et al 1997 need to be clarified. First, what is the effect of different national accounting policies on these returns and how are the returns calculated? The returns are based on the required IRR of the investments over the period of the fund's life (typically 10 years). While not expressly stated, this presumably refers to the realised required rates, although the use of unrealised rates should not make any difference. Differences in accounting will not affect this process since the valuation process endeavours to establish the exit value and this is not determined by accounting practice. Second, how are the inflation differentials adjusted to ensure that the returns in the separate countries are comparable? This is not a trivial issue for investors in countries with volatile national currencies such as South Africa where the inflation differential between SA on the one hand and the USA and the UK on the other hand has fluctuated around 4 percent per annum for the last 5 years. While the differential between the risk-free rates of the UK, France, Belgium and the Netherlands is small, the required rates of return have been adjusted nonetheless and re-stated in two different ways: first, as returns in South African Rands (Table 4.13) and, second, as risk premia with the risk-free rates stripped out (Annexure 7.6). Table 4.13 will be of interest to South Africans who will be able to evaluate the required rates of return directly in local currency terms. Annexure 7.6 will be of interest to those who wish to evaluate the required rates in another currency because they will simply need to add that currency's risk-free rate to the risk premium to arrive at a comparable local currency return.

The investment stage is a key determinant of the required return. The required returns of British venture capitalists are considerably higher than the other countries. One might have expected to see lower returns because of the market being more mature and possibly more competitive. The authors conclude that this may be because British venture capitalists have more experience (and are thus more critical) than their Continental counterparts.

Also interesting was the result that expansion projects required a lower return than later stage investments. The authors argue that this is probably because there is no potentially disruptive change in ownership or management. Notwithstanding this, they note that "the expected time horizon (to exit) seems to be a good, albeit not perfect, indicator of perceived risk" (Manigart et al 1997:37).

In reviewing the factors that influence the required rate of return, the most important factor was the degree of innovation of the proposal. Notably, changes in long bond rates, borrowing rates or the equity markets have little influence on the required return. While Manigart et al 1997 expresses surprise at this result, it is submitted that this is in keeping with theoretical considerations simply because the changes in long bond rates account for such a small percentage of the total required rate of return. Finally, little importance was placed on whether the investment was pure equity or not and whether a majority stake was held by the venture capitalist.

The final part of the study focused on the methods of valuation. Five groupings of valuation method were identified and the overall ranking was as follows: (1) earnings multiples, (2) discounted cash flows, (3) dividend yields, (4) sector-specific ratios (such as the price sales ratio) and (5) asset value methods. As can be seen from Table 2.6, there was a great difference between the various countries.

## VALUATION METHODS IN ORDER OF IMPORTANCE

| <u>UK</u>                                                     | <u>FRANCE</u>                                                 | <u>BELGIUM/NL</u>                                             |
|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Earnings Multiples<br>(Historical/prospective<br>P/E or EBIT) | Earnings Multiples<br>(Historical/prospective<br>P/E or EBIT) | DCF                                                           |
| DCF                                                           | Rule of Thumb ratios                                          | Earnings Multiples<br>(Historical/prospective<br>P/E or EBIT) |
| Rule of Thumb ratios                                          | DCF                                                           | Rule of Thumb ratios                                          |

Source: Manigart et al 1997:39

Table 2.6

It is interesting that, in keeping with studies of the public markets (Ogle & Uliana 2000), British and French venture capitalists use earnings multiples whereas in many countries VCs prefer to use the discounted cash flow method<sup>31</sup>.

### KARSAI ET AL 1997 AND 1998 (HUNGARY, POLAND & SLOVAKIA)

Karsai et al 1997 studies the initial development of the Hungarian venture capital market. Karsai et al 1998 extends the study and compares some of the issues raised in Manigart et al 1997 and Wright and Robbie 1996 by examining the screening and valuation approaches of venture capitalists in Hungary, Poland and Slovakia. Karsai et al 1998 shows that there are differences between the various Central and Eastern European ("CEE") venture capitalists and their developed country counterparts (The UK, France, the Netherlands and Belgium). The authors note that, given the small number of respondents, the statistical results should be treated with caution, but they do provide interesting data.

There are differences between the CEE countries and the UK. As hypothesised, VCs in the CEE countries were less discriminating about the industries in which they invested, and they applied less sophisticated and more standardised approaches to the financial benchmark ratios of the investees as indicators of likely success. VCs in the CEE countries used standard benchmarks for establishing the required rates of return rather than adjusting the return for each individual investment, as is done in the UK.

<sup>31</sup> The French also use earnings multiples as a primary valuation method, but the higher standard deviation in the French results suggests that there is less unanimity in France than in the UK in this regard.

General and sector market conditions in the CEE countries were considered more important than in the UK, as was the amount of the shareholding (the greater the better in the CEE countries) and the length of investment. These latter findings reflect the specific problems faced by the CEE countries in dealing with information asymmetries which result from less sophisticated reporting and other legal requirements.

In assessing riskiness, Karsai et al 1998 shows that VCs in the CEE countries like to see a greater financial contribution by the entrepreneurs than their UK counterparts. Interestingly, the CEE venture capitalists make far greater use of DCF valuation methods and dividend yield methods while earnings multiple methods are eschewed, probably a reflection of the unsophisticated public markets in the CEE countries<sup>32</sup>. Asset-based valuation methods, as in the UK, are not widely used, although where they were used in the CEE countries, attention was focused on replacement and liquidation values.

#### WRIGHT ET AL 2000 (INDIA)

Wright et al 2000 examines the screening criteria used in the Indian venture capital market. It draws on the methodology of the studies of Wright and Robbie 1996, Manigart et al 1997 and Karsai et al 1998, and notes that there are differences between the approaches of developed and developing venture capital markets. Caution should be exercised in respect of these statistical results due to the small number of respondents.

The studies of Wright et al 2000 and Karsai et al 1997 and 1998 give context to a study of South African VC activity. "It is important to recognise, however, that the (various) emerging venture capital markets while representing different socio-cultural, economic and legal environments to Western economies, are themselves heterogeneous, embracing as they do transition, developed and developing market economies. These differences suggest that the well-known informational asymmetry

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<sup>32</sup> It is also very likely that the quality of the financial statements is regarded as less reliable in developing markets. This would mean that using earnings, which is a figure dependent on the applicable local accounting standards, may be less reliable than using actual cash flow for valuation purposes.

problems between insiders (entrepreneurs) and outsiders (venture capital firms) may vary between countries, with consequent implications for the behaviour of venture capital firms” (Wright et al 2000:1).

As with the legal and regulatory infrastructures in the CEE countries, Indian differences in the legal and regulatory infrastructures and the relative lack of sophistication compared to Western economies lead to different investment patterns to, for example, the UK, France, the Netherlands or Belgium. Wright et al 2000 finds that for Indian VCs the sector in which a potential investment falls is more important than for UK VCs. This is in keeping with the findings of Roberts-Baxter and Stapelberg 2000 in respect of the South African market. Further, and as with the CEE countries, the expected time to exit, the application of less sophisticated standardised required rates of return and the importance of an own due diligence report were all more highly regarded by Indian VCs than by UK VCs.

In India, there are differing regulatory regimes which apply to foreign and domestic VC firms (such as registration and fiscal considerations). These have an influence on the differences noted between foreign and domestic Indian firms, although there were considerable similarities insofar as sources of information required for valuation purposes were concerned. This suggests that local conditions affect the nature of the investment evaluation process.

The precedent studies did not survey the valuation methods by investment stage, but surveyed them generally for any venture capital investment, regardless of whether they were early stage or later stage. It is submitted that a survey of valuation methods used during such disparate stages in the business cycle (from seed through to buy-out) of a VC investment might usefully shed light on the valuation process.

## **2.6 CRITERIA BY WHICH INVESTMENTS ARE EVALUATED**

Due to lack of literature on the VC evaluation process, an effort has been made to incorporate as much of the literature in this review as possible. Also, due to the

disparate nature of the literature an effort has also been made to conclude with a synthesis thereof.

It is, at the outset, necessary to distinguish between a normative model of evaluation criteria and a positive model thereof. In some ways, the difference may also be highlighted by asking who benefits from the results of the study. In a normative model, the VC would learn what criteria he or she should apply to achieve the best investment performance. In a positive model, the entrepreneur would learn what the VC was looking for and this would enhance the entrepreneur's ability to raise funding but the VC would not know whether the evaluation criteria enhanced his or her performance.

Developing a normative model of VC evaluation is a challenging endeavour which is outside the ambit of this study. This study, being an initial study in South Africa, describes the actual criteria applied by VCs and makes no attempt to determine which criteria will result in the best VC investment performance.

There have been many attempts to determine a normative model of VC evaluation in the USA and a useful discussion of the entrepreneurial criteria appears in Fausnaugh 1995. The early models largely revolve around the theory of entrepreneurship and the importance thereof in relation to strategic and market considerations. Macmillan, Siegel & Subbanarisimha 1985 concludes that the quality of experience of the entrepreneur is central to ensuring funding from (US) VCs, but MacMillan, Zamman & Subbanarisimha 1987 finds no statistically significant correlation demonstrating that any characteristics of the entrepreneurial team are predictors of new venture success<sup>33</sup>. Interestingly, MacMillan et al 1987 only identifies two criteria which were predictors of success (although neither was regarded as essential). They were the effectiveness of the barriers to competitive entry and the extent to which the market adopted the product or service – neither relate directly to entrepreneurial characteristics. Fausnaugh 1995 cites only one study which has been in any way successful in linking new venture performance with

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<sup>33</sup> MacMillan et al 1987 used the same criteria as in MacMillan et al 1985 and carried out a study by asking 67 VC firms to rate successful and unsuccessful investments in which they had invested. No characteristics of the entrepreneurial team were found to be predictors of success. Cluster analysis revealed that the VCs attributed the lack of success of 68 percent of the unsuccessful ventures directly to entrepreneurial characteristics. Notwithstanding this, regression analysis showed that entrepreneurial characteristics were not statistically significant.

entrepreneurial characteristics<sup>34</sup>. She notes that “research has failed to consistently confirm the existence of any statistically significant link between demographic, psychological, or sociological characteristics of the entrepreneur studied and new venture performance” (Fausnaugh 1995:10).

Insofar as positive models are concerned, there have been many studies of VC investment patterns which focus on the criteria used in the general evaluation of investment opportunities by foreign VCs (Wells 1974, Poindexter 1976, Tyebjee & Bruno 1984, Silver 1985, MacMillan et al 1985 and 1987, Timmons et al 1987, Dixon 1991, Hall & Hofer 1993, Knight 1994, Zacharakis 1995, Guild & Bachher 1996, Zacharakis & Meyer 1998). There are no detailed published studies of the criteria used by South African VCs.

Hall & Hofer 1993 have been referred to earlier as having raised a concern about studies which do not identify the stage of the VC decision-making process at which evaluation criteria are applied. However, Fausnaugh 1995 argues that the criteria are not cognitively applied at specific stages, but as and when there is enough information to draw a conclusion. In fact, Hall & Hofer 1993 allude to this when they observe that “not all criteria were assessed in each proposal. Rather, the process proceeded until the venture capitalists identified a reason to reject the proposal or completed that stage of review without discovering a ‘fatal flaw’” (Hall & Hofer 1993:34). Accordingly, it is submitted that far more sophisticated research methodologies would be required to accurately assess at which stage which criteria were actively considered to be of key importance (rather than determining at which stage compliance with the criteria was most easily established). It is further submitted that this may not be a useful exercise because in practice each evaluation criterion is probably only applied once sufficient information is available to make a decision regarding that criterion.

Boocock & Woods 1996 comprises a case study of the investment patterns of a two year old UK venture capital fund and it notes that compliance with certain investment criteria are more easily identified at different stages of the investment process. For example, a VC would determine whether the market was growing fast enough to be interesting at an early stage in the process, but may take some time to determine

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<sup>34</sup> Herron 1991 found high level statistical support for individual entrepreneurial skills as predictors of success.

whether management had the wherewithal to be successful. Boocock & Woods 1996 argues that it would be inappropriate to conclude that market growth was an important consideration during initial screening and that the quality of management was only important during second phase evaluation. It is submitted that this argument is correct and that the early stage screening process relies on the use of easily measurable proxies which are indicators of the general quality of the proposal.

Boocock & Woods 1996 also questions the weighting or significance of different evaluation criteria used by VCs. The paper concludes that, in practice, both entrepreneurial skills and market potential appear to be considered to be very important throughout the evaluation process.

It should also be noted that there is some evidence of a shifting in investment criteria over time. As long ago as 1985, Macmillan et al 1985:126 noted that “the major shift that has occurred since Tyebjee and Bruno’s study is that venture capitalists in the mid-1980s have reduced their expectation of specific skills (marketing, technical, and so on) on the part of the entrepreneur and shifted these expectations to the venture team”. In addition, Knight 1994 finds that some of the Canadian criteria have changed in ranking over time and suggests that this is a result of the maturing of the Canadian VC industry. The impact of the Internet and wireless technology may be expected to change some of the criteria further, particularly in their ranking of importance. Thus a study of evaluation criteria needs to be contemporarily comparable. The precedent studies were carried out about 5 years prior to the instant study which, it is submitted, is sufficiently contemporaneous for the purposes of comparison of evaluation criteria. Direct comparison is, however, hindered by the fact that MacMillan et al 1985 studies the criteria applied by (US) VCs.

The criticisms raised in the preceding paragraphs will be relevant to placing the results of the instant survey of evaluation criteria in context. An appreciation of these issues should serve as a warning that to simply assume that a highly rated evaluation criterion is sacrosanct would be erroneous. The evaluation process is far richer and the context more lush than a statistical result might indicate.

What do the studies of positive evaluation models reveal, particularly insofar as entrepreneurial characteristics are concerned? Wells 1974 conducted in-depth

interviews so as to rank the criteria used by 7 (US) VC firms and found that, in order of weighting, management commitment, product, market, and management marketing skill ranked the highest. Wells 1974:116 noted that contrary to VC folklore that management skill is the most important factor in venture capital investment decision-making, both the product and the market ranked as highly as management skill, which was the highest weighted management skill factor.

In a study aimed at identifying the criteria used by VCs at different stages of the investment process, Hall & Hofer 1993 conducted semi-structured interviews with four (US) VC firms and asked them to “think aloud”<sup>35</sup> in considering protocols comprising summarised case studies. The study found that VCs decide whether to proceed with a proposal during initial screening in less than 6 minutes and in less than 21 minutes when the proposal is assessed during the second stage. At the initial screening stage, VCs were found to favour those investments which fell within their investment mandate and a market offering long term growth and profitability. At the evaluation stage (second phase), greater emphasis was placed on the source of the proposal and whether it had been previously reviewed by a trusted party. Hall & Hofer established that during the early stage of the VC’s investment process, and contrary to previous studies, the entrepreneurial team and the business strategy were granted relatively little importance (ie no proposals were rejected because of a poor strategy). “The basic conclusion based on both the more general observations and the two exceptions is that the characteristics of the entrepreneur are not important in proposal screening and proposal assessment, except at the extreme ends of the distribution of entrepreneurial talent (i.e., the very incompetent and the potentially very competent.” (Hall & Hofer 1993:39)

Two interesting papers analyse the evaluation criteria used by VCs from a cognitive psychology perspective. Zacharakis 1995 and Zacharakis & Meyer 1998, in a preliminary study, found that entrepreneurs and VCs who were parties to the same failed ventures often disagreed on the reasons (perhaps due to attribution theory<sup>36</sup>), which suggests that one of the parties did not always understand the correct reasons.

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<sup>35</sup> Verbal protocols require the interviewee to provide a verbal commentary of their thoughts while carrying out a task. The protocols are then analysed by an expert.

<sup>36</sup> “People tend to attribute their own failures to environmental circumstances, but others’ failures to personal flaws” (Zacharakis and Meyer 1999:10).

The dilemma arising from this conclusion is that at least one of the parties made a decision based on faulty reasoning.

In addition, Zacharakis 1995 and Zacharakis & Meyer 1998 reason that if VC decision-making is internally consistent, then there is an opportunity to learn from and develop the process better by understanding it. If the process is inconsistent, then the opportunity for improvement is limited. They note that in a study by Stahl and Zimmerer 1984 of 42 executives making merger and acquisition decisions, even though the executives did not have insight into why they actually made the decisions, their decisions were internally consistent.

Applying social judgement theory<sup>37</sup> from cognitive psychology, Zacharakis & Meyer 1998 endeavours to understand the differences which arise between the VC's stated decision-making process, and the actual process which the VC uses during the initial screening process. Two sets of facts were developed which had been summarised from 50 different actual business plans. The researchers already knew whether the various businesses had survived or failed. One set of facts contained four informational cues or facts, and the other set contained eight such cues. The respondents (51 US VCs) were divided up and asked to identify which businesses had survived and which had failed on a seven point Likert scale. Regression analyses of the results were then computed.

The results of Zacharakis 1995 and Zacharakis & Meyer 1998 were striking:

- VCs' actual decision-making policies differ from their stated decision-making policies, although they have "relatively good insight".
- VCs actually focus far more on market competition than they realise.
- VCs, while ranking entrepreneurial leadership as most important in their stated policies, in fact rank it as relatively unimportant in their actual decision policies.
- The VCs who were confronted with less information (the first set of data comprising only four informational cues) better understood their decision processes.

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<sup>37</sup> Social judgement theory is predicated on the assumption that decision-makers do not possess real information, but perceive it from proximal cues. The cues are used to quantitatively identify the relationship between the actual judgement and the information used to arrive at that judgement.

- VCs stated that they rated product superiority 2.3 to 3 times more importantly than other factors (including the entrepreneurial team), while product superiority is actually regarded as 3.5 to 5.5 times more important.
- VCs apply their actual decision-making policies very consistently.
- VCs turn their attention from the entrepreneur to the market as the amount of information they have increases (ie the entrepreneur is crucial if there is little market information, but once the VC is comfortable with the market, the entrepreneur becomes less important).
- Only 24 percent of surveyed VCs used some kind of checklist or scorecard, but as their experience grows, VCs could improve their initial screening process by developing such a checklist.

## OTHER INTERNATIONAL STUDIES

Studies which have been conducted in other parts of the world are included here for the purposes of completeness.

Bachher 1995 performed a survey of Canadian business angels, private venture capitalists, and public venture capital funds and concludes that for all three types of investor “the general characteristics of the entrepreneur(s) (are) most important when deciding to invest in an early stage technology based company” (Bachher 1995:102). Bachher 1995 notes that very few of the studies of screening and evaluation criteria which he reviewed paid much attention to the evaluation of the technology of the product or service.

Chotigeat, Pandey & Kim 1997 surveyed the criteria applied in the developing Asian markets of Taiwan, Sri Lanka and Thailand. The study concludes that in Taiwan the most important issues are financial returns and market potential, in Sri Lanka the most important issues are financial indicators and the management team and in Thailand the management team is the most important consideration.<sup>38</sup>

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<sup>38</sup> For research on VC evaluation in Korea, see Rah, Jung & Lee 1994.

Knight 1994, a cross-cultural comparison of evaluation criteria used by (US) VCs, replicates the USA study of MacMillan et al 1985 and focuses on Canada, Europe and the Asia Pacific region. Unfortunately Knight 1994 does not clarify whether the early stage focus of the study of MacMillan et al 1985 was controlled for in comparing to the results of the EVCA members (which, by definition, include later stage investors). It is unclear whether the respondents from other countries apply the American definition of VC or the European definition. The implication of this is that the comparability the results of Knight 1994 may be suspect. Nonetheless, it provides useful qualitative insights for the purposes of this discussion. The study finds concurrence across national boundaries insofar as the primary importance of entrepreneurial personality and experience are concerned. The differences which emerge may well be explained by definitional differences: the aversion to “high tech” investments in the rest of the world other than America may well be due to the fact that the rest of the world includes buy-outs in the definition of “venture capital”. This is certainly a likely explanation for the apparent requirement for higher rates of return by American VCs than their counterparts in the rest of the world. Other cross-cultural differences can be accounted for as deriving from the classic concerns of early stage investors as opposed to later stage investors.

## SOUTH AFRICAN EVIDENCE

Fourie 1999 studies the evaluation criteria used by five seed and start-up stage VC funds in SA. While the sample is not very representative of this section of the VC industry<sup>39</sup>, the results are presented in Table 2.7 as being of an exploratory nature.

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<sup>39</sup> Two of the respondents are primarily providers of debt and one is an agent that raises funds for projects on an *ad hoc* basis rather than a discretionary manager of funds.

EVALUATION CRITERIA FOR SEED AND EARLY STAGE VC INVESTMENT FUNDS IN SOUTH AFRICA

| <u>Evaluation criteria</u>                             | <u>Rating*</u> |
|--------------------------------------------------------|----------------|
| Target market enjoys good growth                       | 3.8            |
| Product is beyond the point of a functioning prototype | 3.8            |
| Management is capable of sustained effort              | 3.8            |
| Management is familiar with market                     | 3.8            |
| Management reacts well to risk                         | 3.6            |
| Personality of Management is compatible with VC        | 3.6            |
| Existing market being expanded                         | 3.2            |
| Management displays leadership ability                 | 3.2            |
| Management has a relevant track record                 | 3.2            |
| Management is familiar with industry                   | 3.0            |
| Product/technology is proprietary                      | 3.0            |
| Management is articulate in describing the business    | 3.0            |
| Management displays attention to detail                | 3.0            |
| Limited competition                                    | 2.8            |
| Venture is creating a new market                       | 2.8            |
| Venture's product enjoys market acceptance             | 2.8            |
| Investment opportunity was referred to VC              | 2.6            |
| Management has a good reputation                       | 2.4            |
| Product can be described as "high tech"                | 2.2            |

\* Rating based on a four point Likert scale where 1 is irrelevant and 4 is essential

Source: Adapted from Fourie 1999

Table 2.7

Roberts-Baxter & Stapelberg 2000 studied the requirements of 15 early stage investors which evaluated investment opportunities. They discovered that 67 percent of their sample vary their required rates of return according to the sector in which they are investing (eg high tech, media, agriculture). Notwithstanding the significance and representativeness<sup>40</sup> of their sample, further research of this issue would be valuable because the instant study suggests that, while the sector is important, there are a considerable number of issues which are more important.

Roberts-Baxter & Stapelberg 2000 interestingly identify a potential weakness in their study that suggests that respondents may not have understood the definition of an internal rate of return because of the significant divergence in required rates of return. An alternative conclusion might be that this is anecdotal evidence that the VC industry is less sophisticated than expected. Other SA commentators have identified a

<sup>40</sup>There appear to have been only 11 VCs. The inclusion of agriculture as a sector would not typically fall within the sectoral interest of most VCs.

lack of maturity in the SA VC industry (Watling 1998, Campbell 2000). In any event, a broader South African study might cast an interesting light on the conclusions of Roberts-Baxter & Stapelberg 2000.

Both Roberts-Baxter & Stapelberg 2000 and Stillman 1999 note that SA VCs only seek to hold between 20 percent and 49 percent of an investment, with 77 percent of those surveyed in Roberts-Baxter & Stapelberg 2000 stating that they did not wish to have control of the investment.

Stillman 1999, drawing on interviews with about 50 stakeholders, is a study commissioned by the South African Department of Trade and Industry to understand the role which government might play in encouraging the growth of small business entrepreneurs in South Africa. It is an extensive study of comparable initiatives in other countries and is focused on making policy recommendations to government. Risk aversion, lack of expertise, inexperience and (implicitly) high transaction costs are cited as reasons for the slow growth in early stage investments or (US) VC. Investment criteria include only investment opportunities which have existing successful businesses (at least two years old), good management, a shareholding anywhere between 20 percent and 49 percent and a minimum required rate of return in excess of 30 percent per annum. Stillman 1999:66 highlights the importance of gut feel or intuition in the initial assessment of investments and notes that many VC interviewees feel that they are not sufficiently street-wise in this regard.

## SYNTHESIS

The foregoing discussion has been lengthy because the literature review has tried to draw together disparate research. The review has addressed the issue of the applicable stage in the VC decision-making process, which criteria are applicable at which stage and what those criteria are. There are conflicting views on the applicable stage and there are differing results in respect of which criteria are most important. These views are summarised and the following synthesis is offered.

- 1 The decision-making criteria can be categorised into three broad groups:
  - Certain criteria are very mechanistic in their application. The investment opportunity can be quickly filtered by these criteria because they are usually answered in a single question. Examples include the size range of the investment, the percentage of the equity offered, the industry, and geographic location. These filtering criteria could be administered by a relatively inexperienced person.
  - Certain criteria require more consideration, greater analysis and may include some of the apparently mechanistic issues (such as the stage of the business cycle and whether there is proprietary intellectual property). Examples of criteria requiring more consideration also include enquiries as to whether the market is large or growing, whether the product has international potential and whether there are barriers to entry.
  - Finally, certain criteria are very difficult to assess in a short period of time and require a longer process of experienced consideration. Examples include assessing the riskiness of the business, the market potential of the product or service and the quality of the entrepreneurial team.
  
- 2 The process of evaluation moves from initial filtering through to detailed evaluation unabated. The various informational cues are considered at the time they are encountered and are disposed of more quickly if they are mechanistic in nature and take longer to dispose of if they are more complex. If a fatal flaw arises, the evaluation is terminated.
  
- 3 Informational cues can be divided in terms of how immediately the VC needs the information to proceed. The level of immediacy diminishes as the issues require greater subjective judgement.
  - At certain points in the evaluation the VC requires specific information at his or her immediate disposal to proceed further. This is particularly true at the time of valuation (for example, the financial projections, audited accounts, market growth expectations and valuation comparables).
  - Other information is less immediately necessary but important nonetheless (for example, marketing and distribution plans and competition analyses).

- Finally, some information is not immediately necessary but will have been assimilated by the VC in an almost osmotic fashion during the evaluation process but will still have an important impact on the valuation (for example, the quality of the entrepreneur and a general assessment of riskiness).
- 4 At the time of valuation a point in the process has been reached where there are informational pre-requisites, failing which a valuation cannot properly be conducted. This is in contradistinction to the general evaluation of an investment where informational cues are received about the competence of management or the condition of the market. The valuation is done at a specific point in time, whereas the general evaluation may take place over a period of time. This suggests that the valuation stage is not only conceptually distinct but also practically distinct, and can therefore be studied as a specific stage in the decision-making process.
  - 5 Table 2.8 summarises the nature, sample size and results of various American studies of (US) VC criteria. Notwithstanding the oft-quoted mantra that management is the most important factor for the success of a business, the literature differs as to whether VCs actually follow this approach as a strict rule. It would appear that often market issues (such as the level of competition and the barriers to entry) and product issues (such as market acceptance and functionality) are more important. None of this suggests that the quality of the entrepreneurial management is unimportant, but sometimes VCs back a “B” team with an “A” product.

Where appropriate, the design of the instant questionnaire was adjusted to take this review of the literature on evaluation criteria into account. This is dealt with in Section 3.2 of Chapter 3.

INFORMATION FACTORS USED IN (US) VC DECISION (SEED, START-UP AND EARLY STAGE INVESTMENTS)

| <u>STUDY</u>                                        | <u>Wells<br/>1974</u> | <u>Poindexter<br/>1976</u> | <u>Tyebjee &amp;<br/>Bruno 1985</u> | <u>MacMillan et<br/>al 1985</u> | <u>MacMillan et<br/>al 1987</u> | <u>Robinson<br/>1987</u> | <u>Timmons et<br/>al 1987</u> | <u>Hall &amp;<br/>Hofer<br/>1993</u> |
|-----------------------------------------------------|-----------------------|----------------------------|-------------------------------------|---------------------------------|---------------------------------|--------------------------|-------------------------------|--------------------------------------|
| <u>METHOD</u>                                       | Personal interviews   | Questionnaire              | Phone survey & questionnaire        | Questionnaire                   | Questionnaire                   | Questionnaire            | Unstructured interviews       | Verbal protocols                     |
| <u>SAMPLE SIZE</u>                                  | 8                     | 97                         | 46 (Study 1)<br>41 (Study 2)        | 100                             | 67                              | 53                       | 47                            | 16                                   |
| <b><u>Entrepreneurial/team characteristics:</u></b> |                       |                            |                                     |                                 |                                 |                          |                               |                                      |
| Mgmt skill & experience                             | X                     | X                          | X                                   | X                               | X                               | X                        | X                             | X                                    |
| Venture team                                        |                       |                            |                                     | X                               | X                               | X                        |                               | X                                    |
| Mgmt stake in firm                                  |                       | X                          | X                                   |                                 |                                 |                          |                               |                                      |
| Personal motivation                                 | X                     |                            |                                     |                                 |                                 | X                        |                               |                                      |
| Entrepreneur personality                            |                       |                            |                                     | X                               |                                 |                          |                               |                                      |
| <b><u>Product/service characteristics:</u></b>      |                       |                            |                                     |                                 |                                 |                          |                               |                                      |
| Product attributes                                  | X                     |                            | X                                   | X                               | X                               |                          |                               |                                      |
| Product differentiation                             |                       |                            | X                                   |                                 |                                 |                          | X                             |                                      |
| Proprietary                                         | X                     |                            |                                     | X                               | X                               |                          |                               |                                      |
| Growth potential                                    |                       |                            | X                                   |                                 |                                 |                          |                               |                                      |
| Market acceptance                                   |                       |                            |                                     | X                               |                                 |                          | X                             |                                      |
| Prototype                                           |                       |                            |                                     | X                               |                                 |                          |                               |                                      |
|                                                     |                       |                            |                                     |                                 |                                 |                          |                               |                                      |

| <u>STUDY</u>                                 | <u>Wells<br/>1974</u> | <u>Poindexter<br/>1976</u> | <u>Tyebjee &amp;<br/>Bruno 1985</u> | <u>MacMillan et<br/>al 1985</u> | <u>MacMillan et<br/>al 1987</u> | <u>Robinson<br/>1987</u> | <u>Timmons et<br/>al 1987</u> | <u>Hall &amp;<br/>Hofer<br/>1993</u> |
|----------------------------------------------|-----------------------|----------------------------|-------------------------------------|---------------------------------|---------------------------------|--------------------------|-------------------------------|--------------------------------------|
| <b><u>Market<br/>characteristics:</u></b>    |                       |                            |                                     |                                 |                                 |                          |                               |                                      |
| Market size                                  | X                     |                            | X                                   |                                 |                                 |                          | X                             | X                                    |
| Market growth                                | X                     |                            | X                                   | X                               |                                 | X                        | X                             |                                      |
| Barriers to entry                            |                       |                            | X                                   |                                 |                                 |                          | X                             |                                      |
| Competitive threat                           |                       |                            |                                     | X                               | X                               |                          | X                             |                                      |
| Venture creates new<br>mkt                   |                       |                            |                                     | X                               |                                 |                          |                               |                                      |
| <b><u>Financial<br/>characteristics:</u></b> |                       |                            |                                     |                                 |                                 |                          |                               |                                      |
| Cash-out method                              | X                     |                            | X                                   |                                 |                                 |                          |                               | X                                    |
| Expected IRR                                 |                       | X                          | X                                   | X                               |                                 |                          | X                             |                                      |
| Expected risk                                |                       | X                          |                                     |                                 |                                 |                          |                               |                                      |
| Percentage of equity                         |                       | X                          |                                     |                                 |                                 |                          |                               |                                      |
| Investor provisions                          |                       | X                          |                                     |                                 |                                 |                          |                               |                                      |
| Size of investment                           | X                     |                            | X                                   |                                 |                                 |                          |                               |                                      |
| Liquidity                                    |                       |                            |                                     | X                               | X                               | X                        |                               |                                      |
| <b><u>Other:</u></b>                         |                       |                            |                                     |                                 |                                 |                          |                               |                                      |
| References                                   | X                     |                            |                                     |                                 |                                 | X                        |                               |                                      |
| Venture development<br>stage                 |                       | X                          | X                                   |                                 |                                 |                          |                               |                                      |
| VC investment criteria                       |                       |                            |                                     |                                 |                                 |                          |                               | X                                    |

Source: Zacharakis & Meyer 1998:61

Table 2.8

## 2.7 VALUATION

### THE PERFECT CAPITAL MARKET AND EFFICIENT MARKET HYPOTHESIS

The venture capital market is characterised by investments in private, unlisted companies. Much of the existing research on valuation techniques is based on studies of listed companies in the formal public markets. This is for good reason: our understanding of finance is rooted in the concept of the perfect capital market. Our understanding of valuation is based on this theory and has been refined to take account of real world circumstances. Miller & Modigliani 1961 identifies the assumptions underpinning the perfect capital market. These include the following:

- no transaction costs,
- no taxes,
- sufficient buyers and sellers so that no individual can affect pricing,
- all investors have equal access to the market,
- informational symmetry,
- homogeneous expectations, and
- no financial distress costs.

While it is generally accepted that few of these hold true in practice (Brigham & Gapenski 1996), it is useful to consider whether, notwithstanding the imperfections of the capital markets, they are efficient. Efficient capital markets presuppose that all information relating to a share price is freely available to all investors and that this information is reflected in the price of that share. The venture capital markets are far less efficient than the public markets (even where an over-the-counter market exists). They are more inefficient in that the transaction costs are far higher relative to making investments in the public markets. There are not large numbers of buyers and sellers because only institutional venture capitalists and wealthy business angels generally participate in this market. Because of the lack of reporting requirements, there are huge information asymmetries, both between management and investors and amongst investors themselves. Expectations may not be homogeneous because of the different investment mandates of the venture capitalists (eg some venture capitalists are expected to invest largely in “empowerment” projects and some government-related

venture capitalists have to satisfy development policy objectives). Finally, given that many young private companies fail, the distress costs are a serious factor in any venture capitalist's evaluation.<sup>41</sup>

A further issue which requires consideration is that, in the formal public markets, agreements to sell shares are standardised. This is not the case in the venture capital market. Thus, where a venture capitalist and an entrepreneur differ on the valuation, the gap can sometimes be bridged by introducing terms into the contract which regulate the value according to performance. There are many types of mechanism that enable this – convertible preference shares, performance-based “ratchets”, share “claw backs”, staged investments etc (Bartlett 1988). It is submitted that they are far more important in the venture capital valuation process than in the public markets. Presumably the venture capitalist would value the company by notionally incorporating the value of the discount afforded by the use of the mechanism in some way. The study of the effect of these contractual mechanisms does not fall within the ambit of this study but their effect should not be underestimated.

In 1972 Scholes observed that company shares were not unique works of art but abstract rights which could be approximated directly or indirectly. This is one of the implications of the efficient market hypothesis and, insofar as public markets are concerned, there is mixed and controversial research which suggests that increased capital inflows into the public markets may cause prices to rise. Gompers & Lerner 2000 studied 4000 venture investments between 1987 and 1995 and drew the following conclusions:

- A doubling of capital inflows into (US) VC funds resulted in (US) VC investee values increasing by between 7 percent and 21 percent.
- A 100 percent increase in public market values results in (US) VC investee values increasing by between 15 percent and 35 percent. Given that this reflects improved market prospects, this result is not surprising. However, it is interesting that percentage increases in the public markets are not more closely mirrored by VC investee values.

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<sup>41</sup> The major cost of failure is often not the cost of liquidation itself but the lost opportunity cost associated with the VC institution's staff who become distracted by the distressed investment.

- Prices are most affected by the above variables in territories where (US) VCs are most active.
- Capital inflows into funds with focused investment mandates increase the values of investees which fall within those mandates.

“Overall, the evidence is most consistent with the demand pressure explanation” (Gompers & Lerner 2000:4).

This appears to be a different finding to Manigart et al 1997, which found that, in the UK where VC activity is greater than in other European countries studied, the required rates of return were, in fact, higher, thus resulting in lower valuations. This may be explained by the fact that Manigart et al 1997 does not purport to study the changes in required rates of return relative to inflows of investment, but rather compares different countries’ required rates at a point in time. In addition, the discount rate is not the only variable in a valuation calculation.

## VALUATION THEORY

It is trite financial theory that the valuation of an equity investment is determined as the net present value of its expected future cash flows, discounted at the required rate of return (Brigham & Gapenski 1996, Copeland, Koller & Murrin 1996, Brealey & Myers 1996, Correia, Flynn, Uliana & Wormald 1993).

While the discounted cash flow (or net present value (“NPV”)) valuation technique is accepted as the most sound (Brealey & Myers 1991)<sup>42</sup>, practitioners often resort to other techniques which are intended to be proxies for the DCF/NPV method. Indeed, a recent study of Chartered Financial Analysts (“CFAs”) in the USA reveals that only 15.2 percent of CFAs always use DCF/NPV analysis in evaluating listed shares, and only 54.3 percent of CFAs make any use of it at all (Block 1999). Accounting earnings can be a better measure of company performance than realised cash flow. Cash flow includes opportunistic cash flows whereas where there is a stable pattern of

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<sup>42</sup> The theoretical issues surrounding the use of internal rates of return are dealt with later in this chapter.

earnings this can be a better surrogate for measuring share performance (Ogle & Uliana 2000).

The valuation process comprises three conceptually distinct steps (which are not necessarily sequential). The first is an information gathering exercise in respect of the investment opportunity, its prospects and its environment. Second, the information is used to consider the financial position of the investment opportunity which will typically include considering the likely future cash flows or income, the riskiness of their receipt and thus the required rate of return appropriate to the risk profile. Finally, a valuation method is used which is regarded by the venture capitalist as appropriate to the type of investment (Manigart et al 1997).

Manigart et al 1997 divides valuation techniques into three broad methods, viz those based on future cash flow, those based on accounting figures and those based on “rules of thumb”. They cite option pricing theory (“OPT”) and arbitrage pricing theory (“APT”) as being theoretically useful but impractical to use.

Manigart et al 1997 used cluster analysis to arrive at the following groupings of valuation methods as identified by respondents:

- methods based on multiples such as price earnings ratios (before or after tax earnings);
- cash flow methods (such as DCF or NPV calculations);
- “Rule of Thumb” methods (which are primarily sector-specific) such as turnover ratios, subscriber values, solicited offers, or parent company price earnings ratios; and
- replacement cost methods based on accounting book values or liquidation values.

Insofar as valuation “rules of thumb” (such as the number of patents owned by a biotechnology company) are concerned, Lerner 1994 has demonstrated that the breadth of patent scope significantly affects valuations of biotechnology firms.<sup>43</sup>

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<sup>43</sup> Lerner 1994 shows that a “one standard deviation increase in patent scope is associated with a 21 percent increase in the firm’s value. Broad patents are more valuable when substitutes in the same product class are plentiful, a finding consistent with theoretical suggestions” (Lerner 1994:319).

For the purposes of private equity valuation, the Harvard Business School 1998 identifies the following:

- comparable methods,
- the DCF/NPV method,
- the adjusted present value method (which takes into account a changing capital structure),
- the “Venture Capital” method (in terms of which the future earnings are multiplied by a price/earnings ratio at the time of expected exit, and then discounted back to NPV at a risk-adjusted discount rate), and
- option pricing methods.

Damodaran 1999 identifies three approaches to valuation. He identifies the DCF method as the correct way to value a financial asset and then lists two proxies for this method, relative pricing and contingent claims. Typically one would use the proxies where there is insufficient information to proceed with a DCF valuation.

Keeley & Punjabi 1999 and Punjabi 1995 question the theoretical validity of using the DCF/NPV method for valuing typical (US) VC investments which are staged in tranches at the option of the investor. They point out that the DCF/NPV method’s shortcoming lies in its inherent assumption that all follow-on rounds of funding or staged tranches will be invested, while the real value lies in the option to abandon. They point out that DCF/NPV valuations undervalue VC investments, but that OPT results in valuations closer to those established by VC “rule of thumb” methods.

Wright and Robbie 1998 point out that VC investments normally provide two kinds of options. The first arises from the staging of the investment in tranches or further rounds of financing. The second option is on the potential of the venture to generate extraordinary returns from its specific knowledge or expertise.

Aylward 1998a also notes that simple DCF/NPV valuation techniques are not properly able to take into account the real option value to a VC of staging an investment in tranches, thereby enabling the VC to abandon its investment at any

stage. This is of great value to a VC. Cooper 1977 and Tate 1989 also argue that financial theory is limited in its ability to deal with this kind multiperiod investment.

In fact, OPT can be regarded as a type of DCF technique which incorporates the multiperiod nature of the options to invest. Where an option-type investment is utilised, the use of a single period DCF method might be regarded as naïve in that it does not capture the true dynamics of the investment structure. It is submitted that the greatest problem with OPT is the unavailability of the information which is required to perform such a valuation. Further, it is unlikely that practitioners will embrace a valuation method which may result in them investing at higher values, let alone taking the time to learn a more complex valuation technique. Even building up the skill to apply OPT may expose VCs to more aggressive valuation negotiations with investees. This situation is only likely to change if some VCs are able to demonstrably enhance their investment performance by realising that they can afford to pay more for investments than VCs using more simplistic methods. This will be a very slow process. Although it is not expected that any South African VC practitioners use OPT, respondents in the instant survey were asked whether they used OPT.

By applying DCF methodology, a VC is able to consider different scenarios for the purposes of understanding the sensitivities and value drivers underlying the business. In particular, by considering the probabilities of the different scenarios (as in Monte Carlo simulation<sup>44</sup>), a VC investor is able to gain considerable insight into the value of the options inherent in funding the investment through tranches or stages.

## THE IMPACT OF THE BVCA/SAVCA VALUATION GUIDELINES

Venture capital managers face a moral hazard<sup>45</sup> in that they may be inclined to overstate the value of their underlying investments so as to enable them to continue raising funding. The British Venture Capital Association has introduced a set of

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<sup>44</sup> Monte Carlo simulation was popularised by David Hertz and McKinsey and Company.

<sup>45</sup> "Moral hazard occurs when one party does not put forth the level of effort agreed upon or 'shirks'" (Zacharakis 1997:31).

Valuation Guidelines in an effort to standardise the valuation of unrealised venture capital investments for performance reporting. These Valuation Guidelines, although not having stamped out the worst excesses of overexuberant reporting, are more progressive than in any other country<sup>46</sup> (Gompers & Lerner 1997). Notwithstanding this progress, the BVCA Valuation Guidelines provide, for example, for four valuation methods during the development stage of investment and VCs retain some discretion as to which method they may use (Wright and Robbie 1998).

In 1999 the BVCA Valuation Guidelines were circulated to SAVCA members for consideration and comment, it being intended by SAVCA that the South African industry adopts similar best practices. The BVCA Valuation Guidelines were formally adopted almost verbatim by SAVCA during 2000. Thus, where the context permits, any further reference to the SAVCA Valuation Guidelines includes the BVCA Valuation Guidelines, and vice versa. There was some discussion amongst SAVCA members regarding the usage of DCF for valuations. This method was rejected because of the subjective nature of forecasting future cash flows. “(T)he method recommended, ie applying a P/E to historic earnings is more prudent for reporting purposes” (Maxton 2000:4). Given that the guidelines propose potentially more conservative valuation methods for reporting purposes, it would be interesting to establish empirically whether this has had any impact on the valuation methods used by South African VCs when valuing for the purposes of an entry into an investment. An effect is not anticipated.

## VALUATION PRACTICE

A valuation is predicated upon expectations of the future which are adjusted to take account of the likely deviation from these expectations. The greater the amount of relevant information at the disposal of the valuer, the more certain the future and *vice versa*. The valuer’s greatest challenge is usually informational. There is far less certainty or information at the earlier stages in the business cycle of an investment

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<sup>46</sup> EVCA has published guidelines for the same purpose.

opportunity. This means that during the seed, start-up or early stage of an investment, VCs must often make use of proxies for a DCF valuation.<sup>47</sup>

In practice, the DCF method is often applied by VCs by only looking at the earliest years (say, 2 or 3 years) of likely cash flows and then assuming that the uncertainty thereafter is so great as to ignore the impact of any further cash flows. However, there are other methods. During the seed stage a VC may simply establish how much has been invested into the idea, determine how much is required until the next round of funding, and then pay a small premium, if any, to supply the required funding. A healthy dose of experience and intuition obviously assists in this kind of valuation.

As the stages in the business cycle move from seed through to start-up and early stage, to the expansion, buy-out and replacement stages, the valuation techniques become more sophisticated and less subjective or intuitive.

The issues raised in this section on valuation resulted in the design of the instant questionnaire to include questions relating to each of the investment stages. This is dealt with more fully in Section 3.2 of Chapter 3.

## **2.8 PORTFOLIO THEORY**

Portfolio theory shows that one can reduce the overall risk of one's portfolio by combining various assets (which are not perfectly positively correlated) in one portfolio (Brigham & Gapenski 1996). This suggests that one should hold assets in a portfolio and that the riskiness of individual assets should not be assessed individually, but as part of a well-diversified portfolio. Markowitz introduced the mean-variance approach in 1952.

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<sup>47</sup> See Ogle & Uliana 2000.

Venture capitalists will not typically invest more than a certain percentage of their funds under management in any one project. In well-developed markets, such as the USA, venture capitalists will often focus on one niche area within a broad industry (eg business-to-business Internet opportunities). This is a result of informational asymmetries and transaction costs – one is forced to specialise.

Knight predicted a portfolio strategy based on consolidation rather than diversification (1933, as cited in Aylward 1998a) in circumstances where there is great uncertainty not only as regards future outcomes, but also as regards the probability distribution of future returns. “The need to specialise investments is simply a means by which the return distribution of the asset can be sampled to more accurately measure its mean and variance. Then investment selection proceeds by choosing those assets, within the class, that are relatively efficient in terms of their return-to-risk ratios” (Aylward 1998a:44).

Wells 1974 found that none of the VCs surveyed actually tried to arrange their portfolio investments in such a manner that they held low or negatively correlated ventures. Interestingly, Wells recast the returns of the 17 ventures which he had examined on the basis of a hypothetical VC firm which applied two approaches espoused by the respondent firms: first, no more than 10 percent of the fund was invested in any investment and, second, the decision rules of the various funds were applied to each investment. Overall the hypothetical firm achieved a return of 24 percent and suffered no failures. This was in contrast to the actual performance of these 17 investments in the hands of VC managers which did not always apply their own rules – returns were lower and there was some investment failure (Wells 1974:163).

## SOUTH AFRICAN EVIDENCE

One of the few and earliest South African studies on the issue of portfolio policy in venture capital funds was that of Braver 1986, which only notes that the survey sample had “diversified their investments over the entire spectrum of stage of business development” (Braver 1986:57). It would be interesting to establish whether

any kind of portfolio strategy is applied to the investment selection process of South African VCs.

Section 3.2 of Chapter 3 sets out the changes to the instant questionnaire to reflect the issues raised in this review of portfolio theory.

## 2.9 DETERMINATION OF REQUIRED RATE OF RETURN

### THEORY

The required rate of return is a function of the market risk (also known as the systematic or non-diversifiable risk) of the investment. The market risk is therefore the risk-free rate plus an appropriate “equity premium” for that specific investment, assuming that it is part of a well-diversified portfolio (Brigham & Gapenski 1996, Copeland et al 1996, Correia et al 1993, Brealey & Myers 1996).

The higher the risk, the higher will be the required rate of return. The risk will be a combination of both the risk of the specific investment opportunity as well as the prevailing general economic conditions. The capital asset pricing model provides a useful framework. It is predicated on the required rate of return of an investment opportunity being equal to the sum of the long term risk-free interest rate, and the risk premium (being the product of the non-diversifiable risk (“ $\beta$ ”) of the investment opportunity and the equity premium) (Copeland et al 1996).

$$K\hat{s} = K_{rf} + RP$$
$$K\hat{s} = K_{rf} + \beta (K_m - K_{rf})$$

Where:

$K_{rf}$  = Risk-Free Rate  
 $RP$  = Market risk premium  
 $\beta$  = Company's beta  
 $K_m$  = Market return

Theoretically one would expect that venture capitalists would adjust their required rate of return in accordance with general economic conditions which might influence the long term risk-free interest rate. VCs would then be expected to increase the rate by the risk premium. This would take into account the specific features of an individual investment opportunity which gives rise to the non-diversifiable risk thereof.

## THE EQUITY RISK PREMIUM AND A WELL-DIVERSIFIED PORTFOLIO

An important theoretical question arises as to whether, in selecting the required rate of return, the venture capitalist is seeking an equity premium on his or her own portfolio, on a well-diversified portfolio, a “Knightian” consolidated portfolio (1933, as cited in Aylward 1998a) or simply on the existing portfolio irrespective of whether it is well-diversified or consolidated. Since the questionnaire seeks to identify the nominal return required as a whole, the breakdown of how the required rate of return is comprised is ignored. It would therefore be useful to know whether, in the opinion of the venture capitalist, his or her portfolio is well-diversified, consolidated or neither. It may be reasonable to assume that VCs would seek a required rate of return that is higher than theoretically predicted where the portfolio is not well-diversified or consolidated.

## THEORETICAL CONSIDERATIONS RELATING TO THE INTERNAL RATE OF RETURN

While IRRs are commonly used to evaluate investment performance, they have been the subject of considerable theoretical criticism.<sup>48</sup> Although IRRs can be a valuable tool in understanding investment performance, the NPV method is theoretically preferable. The unthinking use of internal rate of return as a measure of profitability

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<sup>48</sup> For a lucid critique of the use of IRRs, see Brigham & Gapenski 1996:218ff.

can lead to inappropriate decision-making. The primary theoretical drawbacks for this study relate to:

- the re-investment rate assumption, and
- changing IRRs over the term of an investment.

The IRR calculation assumes that the inflow of cash flows over the life of the investment are re-invested at the same rate of return as the IRR itself. Where the IRRs are high (as in the case of VC investments) this leads to an aggressive overstatement of the IRR. In reality, the re-investment rate should be the company's cost of capital because it is unrealistic to expect to have a continuing flow of successful investments into which the company can invest its spare cash. The use of a modified internal rate of return ('MIRR') can counter this problem, however, in that the cash flows are assumed to be re-invested at the cost of capital. Indeed, it may be more appropriate to regard the VC investment as a zero-coupon bond. This is particularly true of earlier stage technology investments where cash is consumed and dividends not normally paid until the company reaches a considerable level of maturity (by which time most VCs have exited). In such a case, there would not be a re-investment rate assumption because the final return of capital takes place as a bullet payment at the end of the term.

The IRR calculation is unable to take the impact of a change in IRR over the term of the investment into account. A change in the required rate may occur as the investment's risk profile changes. For instance, a seed investment may warrant a 100% discount rate in the first two years of its life, but the required rate may drop progressively as the investment becomes less risky such that by the fifth year of investment a 35% discount rate is appropriate. However, the IRR is unable to incorporate this change and all subsequent cash flows are discounted at 100%. As with the re-investment rate assumption, the application of high required rates results in more exaggerated distortions.

VCs would likely argue that, had they adjusted the required rate to take account of the improving risk profile, then they would have applied a discount rate of 150% for the first two years. Alternatively, and a more likely argument, would be that because

there would be no cash inflows in the first two years of the investment's life, a more refined adjustment to the required rate would result in the entire investment being valued at, say, 35% as the cash inflows only commence around the fifth year. This would be equally unacceptable.

Neither of the above issues were addressed in this study. It is submitted that they would be best investigated in a study examining the entire valuation process and the use of required rates of return and certainty equivalents, as is suggested later in this study.

## RISK INDICATORS

In a venture capital setting, the required rate of return is often increased further by the inclusion of an adjustment for the illiquidity of the asset, and compensation for the value added by the supplier of capital. "This last adjustment is required to compensate venture capitalists for monitoring the company and playing an active role in management while leaving the limited partner with the appropriate rate of return after taking into account the venture capital fund's management fees and profit participation" (Sahlman 1990:513).

Kane 1998 identifies the following as key types of risk:

- management risk,
- product risk,
- market risk, and
- operations risk.

MacMillan et al 1985 derives six categories of VC risk from factor analysis of their sample of 102 (US) VC members of the National Venture Capital Association. These risks are as follows:

- loss of entire investment,
- inability to bail out,
- failure to implement the venture idea,

- competition,
- management failure, and
- leadership failure.

Cooper 1977 identifies three types of risk which a (US) VC faces

- the variability of the payoff from the investment,
- the risk of abandonment of the investment if it is unsuccessful (which can be countered to some extent by staging of the investment in staggered tranches), and
- the unpredictability of the behaviour of the entrepreneur (particularly because the relationship between the VC and the entrepreneur cannot be fully regulated by a written agreement).

KNC 2001b:12 sets out a model of risk which needs to be addressed by a start-up venture:

- development risk (Can the product or service be developed?)
- manufacturing risk (Can it be made?)
- marketing risk (Can it be sold?)
- management risk (Can it be sold profitably?), and
- growth risk (Can the growing venture be managed?)

Canadian VCs, for example, display a preference within their area of industry focus for later stage investments due to the lower costs of selection and monitoring, and information asymmetry (Amit, Brander & Zott 1998).

#### SAMPLE REQUIRED RATES OF RETURN

Sahlman 1990 identifies American (US) VCs as using standard discount rates of between 40 and 60 percent. Plummer (1987, as cited in Sahlman 1990) suggests a range starting at a maximum of 70 percent for start-up stage investments through to 25 percent as a minimum for IPOs.

Bygrave, Hay & Peeters 1994 studied the returns of (US) VC firms from 1969 to 1985 and concluded that average annual returns had most often been in the teens. Occasionally the returns had been between 20 percent and 30 percent and only very rarely over 30 percent per annum. Wright and Robbie 1996 concluded that the overall mean required rate of return for VCs in the UK was 29.2 percent (median: 30%)<sup>49</sup>.

## SOUTH AFRICAN EVIDENCE

An early South African study of required rates of return for venture capitalists (Braver 1986) is unhelpful. This is mainly because the industry was so embryonic at the time and there were too few respondents to draw any meaningful conclusions. Seminal South African VCs required rates of return between 15 percent and 60 percent. They typically required higher rates of return for earlier stages in the investment cycle (although one South African VC required a higher rate of return for expansion/buy-out stage investments than it did for early stage investments which is an indictment of the level of the sophistication of the South African market in the mid 1980s).

In a survey of South African VCs, Capital B Management 1999 found that respondents were reluctant to disclose their hurdle rates of return, although the average across their sample was 36 percent. Some respondents targeted deal-specific returns of 70 to 80 percent, or multiples of their investment.

Mullet 1998, from his interviews with VCs in South Africa, estimated the required rates of return set out in Table 2.10.

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<sup>49</sup> This was calculated across all stages of VC investment in terms of the European definition of VC.

## ESTIMATED REQUIRED IRR FOR VENTURE CAPITAL (SOUTH AFRICA)

| <u>Stage of venture</u> | <u>Required IRR</u> |
|-------------------------|---------------------|
| Seed/start-up           | 50 – 100%           |
| Early stage             | 40 – 70%            |
| Later stage             | 25 – 50%            |
| Financing               | 20 – 30%            |

Source: Mullet 1998:55

Table 2.10

### 2.10 CONCLUSION

Limited research has been conducted on the VC industry although it is growing as an area of interest. The review endeavours to capture as much of this disparate and wide-ranging research as possible and then to synthesise it. This has necessitated a comprehensive literature review.

This literature and theory review has covered how the literature was sourced, it has clarified some VC concepts, and it has given a brief overview on the development and status of the VC industry. Further, the VC decision-making process has been considered and the precedent studies have been reviewed. The criteria used by VCs to evaluate investments have been synthesised and various valuation methods have been examined. Finally, portfolio theory, the required rates of return and the influence of various risk factors have been considered.

The literature review leads to a number of questions which are considered in Section 3.2 of Chapter 3 and which have subsequently affected the design of the instant questionnaire particularly insofar as it differs from the questionnaire used in the precedent surveys. In summary, the questionnaire used in the precedent studies was used as the basis and was amended to take account of local issues or where they did not form part of the instant study or where the instant study was extended into new

areas of research. First, the valuation techniques were studied by stage of investment cycle on the premise that a VC might use a different technique for a seed investment as opposed to a management buy-out. Second, a glossary was included to ensure conceptual consistency. Third, the respondents were asked to identify whether they had empowerment/development objectives and whether they were listed. This was to enable a deeper understanding of the required rates of return. Fourth, the evaluation criteria and risk factors were amended to take some of the issues raised in this literature review into account. Fifth, the list of valuation techniques was extended to include OPT/APT, *inter alia*. Sixth, the portfolio strategy section focused on whether VCs regarded their portfolios as well-diversified. Seventh, an independent data recipient, PricewaterhouseCoopers, was used to ensure the respondent's anonymity. Finally, the study was extended beyond the membership of SAVCA to ensure a more inclusive picture of the South African VC industry.

The next chapter discusses the methodology and its application to the survey and the analysis thereof.

### **3 METHODOLOGY**

“The essence of risk management lies in maximizing the areas where we have some control over the outcome while minimizing the areas where we have absolutely no control over the outcome and the linkage between effect and cause is hidden from us.”  
(Peter L Bernstein)<sup>50</sup>

This chapter deals first with the methodology used by the precedent studies. Second, it identifies some differences between the methodology of the precedent studies and the instant study and the reasons therefore, especially the changes to the instant questionnaire. Third, the methodology used in the instant survey is documented. The fourth section deals with the identification of potential respondents. The fifth section sets out the statistical processes which were employed. The sixth section deals with the re-statement of required rates of return to take account of the weakness of the South African Rand compared to the stronger European currencies. The seventh section sets out the hypotheses. The eighth and final section sets out the limitations of this study.

#### **3.1 METHODOLOGY OF THE PRECEDENT STUDIES**

The precedent studies all follow a similar pattern. This is to be expected since there were common researchers and collaboration in the studies. The questionnaire that was set up for the UK study (Wright & Robbie 1996) was translated into local languages and a few additional questions were added for the study of Belgium, the Netherlands and France (Manigart et al 1997). Simplified versions of these questionnaires were then used for the studies in Hungary, Poland, Slovakia (Karsai et

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<sup>50</sup> Bernstein 1996:197.

al 1998) and India (Wright et al 2000). The questionnaires were sent out to full members of the respective national venture capital associations where such associations existed, or to lists of respondents gathered from other sources. Table 3.1 below sets out the broad details of each survey.

The University of Nottingham's Centre for Management Buy-Out Research made the questionnaire used in Wright and Robbie 1996 available for the purposes of the instant study.

| Country                    | UK                                  | France                                                                            | Belgium                                                       | Netherlands                                                                          | Hungary                               | Slovakia | Poland | India |
|----------------------------|-------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------|----------|--------|-------|
| Questionnaires sent out    | 114                                 | 133                                                                               | 28                                                            | 58                                                                                   | 12                                    | 5        | 12     | 47    |
| Number of usable responses | 66                                  | 32                                                                                | 14                                                            | 24                                                                                   | 9                                     | 3        | 6      | 31    |
| Response rate              | 58%                                 | 24%                                                                               | 50%                                                           | 41%                                                                                  | 75%                                   | 60%      | 50%    | 66%   |
| Year of study              | 1994                                | 1995-6                                                                            | 1995-6                                                        | 1995-6                                                                               | 1996-7                                | 1996-7   | 1996-7 | 1999  |
| Source of respondents      | British Venture Capital Association | Association Française des Investisseurs en Capital and French members of the EVCA | Belgium Venturing Association and Belgian members of the EVCA | Nederlandse Vereniging voor Participatiemaatschappijen and Dutch members of the EVCA | Hungarian Venture Capital Association | -        | -      | -     |

Table 3.1

### **3.2 VARIATIONS FROM THE PRECEDENT STUDIES**

The questionnaire used in Wright & Robbie 1996 was used as the initial basis of the instant questionnaire, particularly where comparative results were sought. The comparative questions were changed where either they required localisation or where the questions were regarded as inappropriate or had not elicited a valuable response for the original researchers. However, insofar as the ambit of the instant study was extended beyond that of the precedent studies, extensive changes were effected. These changes were based on various issues raised and referred to in Chapter 2.

The key differences between the precedent questionnaire and the instant questionnaire were as follows:

- 1 The original questionnaire enquired about the information (and sources thereof) used by VCs during due diligence and valuation. This was ignored as not falling within the ambit of the instant study.
- 2 The instant questionnaire was extended to include an enquiry as to the valuation methods used by SA VCs during the different stages of the lifecycle of an investment (for example, seed, early stage, expansion, buy-out etc). This is in recognition of the fact that a seed investment has unpredictable future cash flows while a leveraged buy-out is far more predictable. Decision-making risk is increased by lack of information. Therefore it would seem reasonable to postulate that the early stage risk element might not be accounted for by merely increasing the required rate of return, but also by using valuation techniques that take into account the lack of information available to value an earlier stage investment opportunity. Certainly there is anecdotal evidence of this and it was considered possible that this might yield interesting empirical results.
- 3 A glossary was attached to the instant questionnaire.
- 4 Some localisation was applied. For example, the instant questionnaire enquired of funds whether they had an “empowerment” objective. This is a peculiarly South

African issue which is found in other countries where there may have been social or legal inequities which a government may be endeavouring to regularise. Funds were also asked whether they were listed on the local stock exchange.

- 5 The evaluation criteria and specific risk factors which affect the required rate of return were trimmed where regarded appropriate and extended to include criteria and factors which had either been identified in the literature review or were identified anecdotally by the researcher or other SA VC practitioners. For example, a question was asked whether owning the majority of the equity or control increased or decreased investment risk. While on the face of it it would have been a reasonable hypothesis merely to assume that having control reduced risk, the question was framed in an open-ended fashion to avoid prejudging the result. Further, more potential criteria were introduced to cover the evaluation of the technology of the product or service (Bachher 1995). Also, Fausnaugh 1995:22 notes that “industry-related managerial experience may reside in team members other than the founding entrepreneur”. Thus the questionnaire was couched to include questions not only about “the entrepreneur” but included “the entrepreneur’s team”. Finally, a significant inclusion was a new question which enquired as to the importance of the integrity of the entrepreneurial team.
- 6 The list of valuation methods was similarly trimmed and extended. While some of the changes were superficial, OPT/APT was included along with the “venture capital method” of valuation<sup>51</sup> as alternatives.
- 7 A new inclusion under “Risk Factors” was the risk of the behaviour of the entrepreneurial team being unpredictable (Cooper 1977).
- 8 A question was included which enquired about portfolio strategy, whether funds actively pursued any kind of portfolio strategy and whether VCs regarded their portfolios as well-diversified or not. The importance of this was twofold. First it tested the notion that an investor should seek a risk premium over and above a well-diversified portfolio rather than on his or her own portfolio. Second, it tested

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<sup>51</sup> This technique is described more fully in Harvard Business School 1998.

whether there is a tendency amongst SA VCs to focus their investment portfolios as do many of their developed country counterparts. This is not expected to be the case because the SA economy is relatively small.

Because the researcher is active in the VC industry, respondents had to be assured that the responses would be de-personalised and that the researcher would receive them anonymously through the intermediation of an independent data recipient. The precedent studies did not need to offer this anonymity. It is possible, although unlikely, that this may have affected the results received in the precedent studies as opposed to those for the instant study.

In addition to the instant questionnaire varying from those of the precedent surveys, the prospective respondents which were approached included a number of non-SAVCA members. SAVCA was only constituted in 1999 and there are still a number of active and, in some cases, very significant VCs which are not members. These additional participants were either identified through other surveys (such as Capital B Management 1999:48, Campbell 2000, Mullet 1998:81ff) or through the researcher's exposure to the VC industry generally in SA.

### **3.3 THE INSTANT METHODOLOGY**

The method of empirical research comprised the following steps:

- 1 A sample was identified that was large enough to be statistically significant. As many VCs as possible were approached. A response of at least 30 was regarded as large enough to derive meaningful results. The membership list of SAVCA was used as well as approaching non-members in the researcher's private database. 66 questionnaires were subsequently sent out during November 2000. The method of identifying potential respondents is dealt with under section 3.4 of this chapter.

- 2 The draft questionnaire was pre-tested on several academic colleagues and business confidants in the VC market before being finalised. Notwithstanding an effort to ensure that it was concise, the questionnaire was about 15 pages long. Respondents confirmed that it took about 30 minutes for a reasonably experienced VC to complete – there were very few text-oriented questions. An effort was made to ensure that the questionnaire was clear and, upon completion, respondents were asked to rate the questionnaire’s clarity on a five point Likert scale.
- 3 A questionnaire was used because, notwithstanding that more sophisticated methods have been recommended by other researchers (Hall & Hofer 1993; Zacharakis 1995 and Zacharakis & Meyer 1998), a large number of South African VC respondents were sought and the information required in the questionnaire was considerable.
- 4 To avoid any conceptual confusion the instant questionnaire defined “venture capital” and “private equity” as being interchangeable and the terms were “used synonymously to describe equity or quasi-equity investments in (generally) unlisted businesses seeking strong growth (ie this excludes so-called ‘lifestyle’ businesses)”. Also, the glossary which was used for the SAVCA/KPMG survey (KPMG 2000) was used as the basis of the glossary used in the instant study and is reproduced as Annexure 7.4. Finally, the instant survey questionnaire was carefully worded to ensure that it was clear to the respondents which stage of the decision-making process (first phase filtering, second phase evaluation etc) was being researched in each case.
- 5 The questionnaire was distributed to the participants as follows:
  - The VCs were first telephoned to enlist their participation. Only one of the potential participants refused at this stage to participate. A stamped, addressed envelope accompanied the hard copy questionnaire so that the respondent could conveniently return the completed questionnaire to the independent data recipient, PricewaterhouseCoopers. Email was used sparingly because of the risk that some corporate firewalls might not support the formatting of the questionnaire in MS Word. The covering letter, letter from PricewaterhouseCoopers and the questionnaire are attached, Annexures 7.1, 7.2 and 7.3.

- The VC institutions were asked to complete a questionnaire for each separate fund they managed. This was because the different funds might have different investment considerations and, where they had the same investment considerations, this would be more representative of the entire industry. Further, and in keeping with this approach, respondents were asked to apply their fund's criteria and only in the absence thereof, to give their own views.
  - The responses were collated anonymously by PricewaterhouseCoopers so as to ensure the confidentiality of participants. PricewaterhouseCoopers de-personalised the responses and delivered two sets of data to the researcher: a list of respondents and a separate data set of the responses. The individual data thus remain anonymous.
- 6 It was crucial to ensure the participation of the largest VC institutions in the market. The likely difficulties in this regard were the following:
- Lack of confidentiality – even if confidentiality was assured by the researcher, the researcher was an executive director of a VC fund in South Africa and might have been seen as a competitor. In addition to the independent data recipient, all participants were assured in writing that they would not be identified individually in the thesis (or otherwise) and that they would receive a copy of the final thesis.
  - Lack of time or interest in completing the questionnaire, or other personal or policy reasons. Follow up calls were made. Personal visits were occasionally arranged during which the respondents were encouraged to complete the questionnaire. Respondents were assured that a copy of the results would be made available to them.
- 7 The anonymous data were centralised electronically in raw form for statistical analysis.

The final questionnaire was divided into several conceptual sections:

- 1 Institutional background. This enabled categorisation of the respondent.

- 2 Investment appraisal. This section required the rating of pre-determined evaluation criteria according to the following sub-sections:
  - Personality and characteristics of the entrepreneurial team,
  - Experience of entrepreneurial team,
  - Characteristics of the product of service,
  - Characteristics of the target market,
  - Operational issues which must be well-positioned or in good order,
  - Financial considerations (other than the required rate of return or gearing ratios), and
  - Stage in the business cycle of the investment (seed, expansion etc).
- 3 Targeted rates of return and risk indicators. This section focused on the application of the required rates of return and those matters which affect risk and therefore might influence the required rate of return. The factors which might affect the required rate of return were divided into general factors (largely relating to the state of the economy and the risk-free rate), and specific factors which might only apply to individual investments.
- 4 Valuation methods. This section enquired as to the use of different valuation methods for each of the different stages of the business cycle (from seed through to replacement). In addition, respondents were asked about how they established a final valuation (assuming that more than one valuation method was used).
- 5 Required rate of return. This section enquired about the overall required rate for all investments and then endeavoured to establish what the different rates were for each stage in the business cycle of an investment. The effect of the investment's debt-equity ratio was also raised.
- 6 Portfolio strategy. Respondents were asked whether they applied any kind of portfolio strategy to their investments, and if so, what the level of sophistication of that strategy was.
- 7 Venture capital association. This section was for categorisation purposes.
- 8 Clarity of Questionnaire. The respondents were given an opportunity to evaluate the clarity of the researcher's questionnaire.

### **3.4 IDENTIFICATION OF POTENTIAL RESPONDENTS**

Of the 54 full members of SAVCA at the time of sending out the questionnaire, only 41 were identified as being appropriate for the study<sup>52</sup>. Those which were excluded were members which primarily supplied debt or funded lifestyle businesses or for which venture capital was only a small subset of their business activities (3 in total). One intermediary was excluded. In addition, 9 were no longer in business perhaps partially as a consequence of the market shakeout which took place in 2000. In addition to the 41 full members of SAVCA referred to above, one of the 19 associate members of SAVCA (SAVCA 2000) was also identified as a potential respondent. Thus a total of 42 SAVCA members were targeted.

An investigation of the non-members of SAVCA revealed that there are a number of institutions and business angels which make occasional VC investments, but this is not their primary business and they were accordingly excluded. However, a further 33 potential participants which were not members of SAVCA were identified as potential respondents. Of these, 5 were no longer in business, 2 were intermediaries and no contact details could be found for a further 2 potential respondents. Accordingly, 24 potential respondents were identified which were not members of SAVCA. Thus a total of 66 SAVCA members and non-members were identified as potential respondents.

While the number of VCs in South Africa is in a state of flux, there are probably no more than 65 VC institutions which have raised funds over which they generally have discretionary control. Of the 66 potential respondents, 6 corporate groups had 2 members each and 2 corporate groups had 3 members each<sup>53</sup>. Excluding the effects of this double counting (10 such funds or entities), only 56 VC institutions were identified. It is estimated that there may be a further 5 or 10 VC institutions in SA which the researcher was unable to contact. These figures are largely consistent with those of the SAVCA/KPMG survey for 2000 (KPMG 2001).

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<sup>52</sup> See also Section 2.2, Chapter 2, which deals with the definition of 'venture capitalist'.

<sup>53</sup> These additional members in each corporate group were either different funds or different VC entities within the group.

It is surmised that the researcher's effort to extend the ambit of this study beyond the membership of SAVCA may have yielded results which would be different to a study of SAVCA members alone would have yielded. A number of non-member respondents are smaller VC participants which may not yet have felt it necessary to pay to become members of SAVCA. These kinds of respondents may be expected to be involved in smaller and often earlier stage investments than their SAVCA counterparts. All the large buy-out funds in South Africa are now members of SAVCA.

### 3.5 STATISTICAL PROCESSES

The following statistical analyses were employed:

- Exploratory Data Analysis was used to filter and check the integrity of the data
- Standard deviations were computed for each of the attitudinal responses to identify the degree of reliability of each finding.
- Simple mean, mode and median calculations were computed to explore the sample's required rates of return, *inter alia*.
- Both non-parametric and parametric analyses were conducted. Insofar as the overall required rates of return were not normally distributed, it was necessary to conduct non-parametric tests on these data.

Response bias is difficult to control for *ex ante* (Aylward 1998b:29), but two tests were used *ex post* to check for systematic response bias:

- 1 The absolute number of industry participants as indicated by the number of potential respondents identified in the instant study was compared to the aggregate industry data compiled in the SAVCA/KPMG 2001 report. Although the total number of VC institutions identified in the instant study was slightly more than that of the SAVCA/KPMG 2001 survey, the numbers were consistent.
- 2 The organisation type of the respondents was compared to aggregate industry data in the SAVCA/KPMG 2001 report. The figures were not properly comparable

because the SAVCA/KPMG survey for 2001 identified VC firms or institutions (approximately 49 percent were independent, 43 percent were captive and 9 percent were public sector captives). In the instant study, the individual VC funds were analysed (approximately 55 percent were independent, 41 percent were captive and 4 percent were public sector captives). The difference in respect of public sector captives can be ascribed to the inclusion of the IDC by SAVCA/KPMG, but its explicit exclusion in the instant study because the IDC is not strictly a venture capital institution in terms of the definition set out in Section 2 of Chapter 2. These figures suggest that the instant sample was largely representative of the industry.

Furthermore, in terms of the law of large numbers, the larger the sample, the more likely it is to be representative of the total universe. Hence, because of the reach of the instant study, it is more likely to be representative of the VC industry.

### **3.6 RESTATEMENT OF REQUIRED RATES OF RETURN FOR A SOUTH AFRICAN CONTEXT**

Manigart et al 1997 compares the required rates of return amongst the UK, France, Belgium and the Netherlands. Since it was unclear whether the various rates were nominal or real (ie whether they had been adjusted for inflation differences), an email enquiry was made of one of the researchers who responded that no such adjustment had been made because such an adjustment was regarded as unnecessary. While the nominal risk-free rates may not be materially different between these four countries, they are indeed important in comparing the required returns with those of South African venture capitalists. Consequently all the returns have been re-calculated in Rand-equivalent figures. This was done by establishing the mean of the 10 year sovereign bond rates of each of the relevant countries for the relevant period (10 year rates were deemed appropriate because most venture capital funds run for approximately this period of time). The difference between the South African long bond rate<sup>54</sup> and the

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<sup>54</sup> The R153 matures in February 2010 and is the most liquid South African 10 year sovereign bond. The mean of the daily closing prices of the R153 for the calendar year of 2000 was 13.79 percent.

developed country bond rates were then added to the results as calculated by Manigart et al 1997. The nominal required rates of return as stated in SA Rands are set out in Table 4.13. However, for international comparison purposes Annexure 7.6 reflects the risk premia component of the required rates of return of the precedent studies and the instant study (ie they explicitly exclude the national risk free rates).

Note that the SA VCs have increased their required rates of return by about 2 percent since the mid to late 1990s when market conditions were better but no adjustment has been made for this.<sup>55</sup>

### 3.7 HYPOTHESES

Based on the literature review in Chapter 2, the following hypotheses in respect of the evaluation criteria, required rates of return and valuation techniques in the South African VC market are postulated:

#### A EVALUATION CRITERIA

A1 *The most important evaluation criteria will comprise the characteristics of the entrepreneurial team relating to personality and experience.*

#### B REQUIRED RATES OF RETURN

B1 *When foreign and locally owned respondents are compared, foreign respondents will require higher rates of return.*

B2 *More mature respondents will require higher rates of return than less mature respondents.*

B3 *Development respondents will not require as high returns as non-development respondents.*

B4 *Listed respondents will require a higher return than unlisted respondents.*

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<sup>55</sup> See section 4.4 REQUIRED RATES OF RETURN ('Changes to the required rate of return since the mid to late 1990s').

- B5 *Independent respondents will require higher rates of return than captives and semi-captives.*
- B6 *Empowerment respondents will not require as high returns as non-empowerment respondents.*
- B7 *The required rates of return will have increased since the mid to late 1990s.*

## C VALUATION

- C1 *The most commonly used technique will be the DCF method in all of the investment stages. This will be because the management and accounting figures will not usually give as reliable a picture of the earlier stages of a new business as cash flow.*
- C2 *DCF will become more important at the later stages of investment such as the buy-outs and buy-ins. This will be because these transactions are typically leveraged with debt. In the earlier stages rule of thumb techniques and comparables for recent transactions in the sector will predominate because there is so little information that a more scientific approach is difficult.*
- C3 *OPT and dividend yield will be two of the least used techniques. OPT will not be used because there is insufficient information to utilise a Black-Scholes model. The dividend yield method will be unpopular because the relative lack of maturity will mean that there will not be a historic pattern of dividends from which to derive comfort.*
- C4 *The SAVCA/BVCA valuation guidelines will not have had an effect on the valuation techniques used by VCs when valuing an opportunity for investment purposes. This will be because these guidelines are only used for performance evaluation.*

### 3.8 LIMITATIONS OF THIS STUDY

- 1 Hall & Hofer's 1993 research of the criteria applied by (US) VCs commences with a critique of the methodology of using *ex post facto* information gathering techniques (such as simple questionnaires), and also of the risk of self-reporting

biases and recall ability of respondents. These criticisms are echoed later by Zacharakis 1995, Zacharakis & Meyer 1998 and Bachher 1995. Zacharakis 1995 and Zacharakis & Meyer 1998 take issue with the accuracy of *ex post* interviews and surveys because of the existence of *ex post* rationalisation and recall biases. “Such biases likely inhibit how accurately people can introspect about their own thought processes...Experts who tend to rely on intuition more than non-experts...are notoriously poor introspectors...VCs, experts in new venture financing, also typically rely on intuition...” (Zacharakis & Meyer 1998:59). For example, they suggest that VCs fixate on the entrepreneur because of his or her past successes or dynamic personality, thus reporting the characteristics of the entrepreneur as more important than they actually were to the VC at the time of making the decision. This limitation is problematic. The instant study is currently, to the knowledge of the researcher, the most extensive, representative and detailed study of the pre-investment process in the South African venture capital industry. Since there is so little existing research on the South African venture capital industry, the results of the instant should be interpreted with caution and be regarded as exploratory.

- 2 It is possible that the use of questionnaires may direct the respondent through a predetermined process which does not reflect his or her experience of the process. For example, asking what discount rates are used and what risk factors might be considered in adjusting the required rate of return may be misleading because there is an inherent assumption that risk is primarily priced into the required rate of return. This may not always be the case. It is possible that one VC may price the risk of overstated projected cash flows by applying an aggressive required rate of return as a discount rate, while another VC may subject the cash flows to a certainty equivalent<sup>56</sup> before a more modest required rate of return is applied. There is no indication in the literature that this issue has been researched or addressed in any way in past research and this may be an interesting avenue for further study. Such a study might also consider the theoretical limitations of using IRRs insofar as they relate to the re-investment rate assumption and

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<sup>56</sup> See Brealey & Myers 1991:202ff.

accommodation for changing required rates of return over the term of an investment.

- 3 Insofar as the questionnaire is concerned, some quality may have been sacrificed in the drive for a large sample. However, it is submitted that at worst this would have affected some of the attitudinal questions relating to evaluation criteria and risk factors. However, other issues which were surveyed, such as required rates of return and valuation methods, may be satisfactorily surveyed using a questionnaire. The advantages of a large sample were expected to enable the researcher to draw statistically significant conclusions and thus outweigh the disadvantages of using a questionnaire.
- 4 Access to information is one of the greatest challenges facing researchers of the VC industry. VCs are generally very busy and often asked to participate in industry presentations, events and a mixed bag of surveys and may suffer from “survey fatigue”<sup>57</sup>. It is possible that this could lead to non-representative samples and ill-considered responses. It is submitted that it is unlikely that this limitation is true of the instant study - the researcher was overwhelmed by the level of participation and interest in this study.<sup>58</sup>
- 5 The limitations of using an attitudinal scale such as a Likert scale include the possibility that different respondents may attach varying weights to the numerical scores. In addition, the complexity inherent in the trade-offs of selecting between varying criteria, risk factors or valuation methods may not be adequately captured<sup>59</sup>. To the extent that the same respondents answered the instant questionnaire, the attitudinal scale will capture the relative rankings of South African criteria and this should not pose a major problem. However, insofar as comparing the scores from other studies is concerned, the absolute scores should

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<sup>57</sup> Unfortunately this has not led to much published work on the industry.

<sup>58</sup> SAVCA could fulfil a valuable service to its members by centralising and co-ordinating legitimate surveys in conjunction with the various academic and other bodies which intend researching the VC industry. For example, SAVCA might consider appointing a representative body of respected VC academics who could review intended studies and recommend a unified research approach to SAVCA on an annual basis. SAVCA could then consider endorsing a single or several limited “approved” surveys.

<sup>59</sup> See Muzyka, Lelux & Birley 1996 in which conjoint analysis is used in an effort to overcome this limitation.

be interpreted with caution and reliance should only be made on the relative rankings of criteria.

- 6 There is a risk of a “goodwill” factor driving responses such that they are assumed to be what the researcher is seeking. To a small extent this limitation is countered by the use of auditors, PricewaterhouseCoopers, as an independent data recipient.
- 7 The statistical results could have been calculated in two ways: either per fund or weighted by fund size. Neither approach is necessarily better than the other but ideally one would calculate the results on both bases for comparative purposes. Nonetheless, an email enquiry was made of one of the precedent researchers (Manigart et al 1997) who advised that they had calculated the results per respondent and had not weighted them by fund size. In the instant study the results were not weighted by fund size for two reasons: first, the precedent studies did not weight the responses by fund size<sup>60</sup> and, second, it would have led to a potential breach of anonymity because it would have made it possible to identify many of the respondents on the basis of the size of their funds.
- 8 The size of the response sample appears on the face of it to be significant (about 70 percent of the entire SA VC industry by number). However, once one drills down to the required rate of return by stage of investment, for example, the number of responses in respect of public sector VCs drops to a level where the statistical significance is less reliable. Attention is drawn to this limitation in the discussion of the results.
- 9 Most previous European studies, such as the precedent studies, have simply comprised a mailing to all full members of the local national venture capital association. In the instant study, care was taken to establish the quality of the respondents as being those institutions with discretionary control over funds which they have raised. This may affect the comparability of the results. In addition, an effort was made to extend the study beyond the ambit merely of the members of SAVCA and to try and include non-members. This was particularly

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<sup>60</sup> In fact, none of the studies surveyed in the literature review endeavour to weight their results by the size of the funds under management.

important because SAVCA is a young association and will only reach maturity in years to come. However, it is possible that there is some selection bias which arose as a result of the widening of this study beyond members of the local association.

- 10 The clarity of a questionnaire is crucial if one is seeking valid results. The researcher took great trouble to ensure that the questionnaire was clear – it was pre-tested and checked with a number of industry players and academic colleagues. The questionnaire asked the respondents to rate how clear they found it. Certainly, some of the subsequent responses indicate that there may have been confusion regarding several questions (which are identified and discussed later).
- 11 A problem inherent in virtually all quantitative studies of the decision-making process of VCs is that it is impossible to determine whether the responses should be regarded as those of the institution as a whole or whether they are the responses of individuals and may have been different had they been completed by a different individual within the same institution. The questionnaire is clear in that it requires the views of the fund and not the individual but this does not obviate this as a potential limitation.
- 12 As identified in the literature review, the theoretical question arises as to whether, in selecting the required rate of return, the venture capitalist is seeking an equity premium on his or her own portfolio, on a well-diversified portfolio or on a consolidated portfolio. The resolution of this issue is not contemplated in this study and, although it is a potential weakness, it is submitted that it would not have a material effect on the results. In any event, at a practical level, it may be reasonable to assume that where the average required rate of return reflects the fact that a portion of venture capitalists do not have well-diversified or consolidated portfolios, they would accordingly require a higher rate of return.

Comparison of Instant Study with the Precedent Studies

Manigart et al 1997, Karsai et al 1997, Karsai et al 1998, Wright & Robbie 1996, Wright et al 2000

|                                                              | South Africa                   | Britain                        | France                           | Netherlands                     | Belgium                         | Hungary                                                         | Poland                                | Slovakia                             | India                    |
|--------------------------------------------------------------|--------------------------------|--------------------------------|----------------------------------|---------------------------------|---------------------------------|-----------------------------------------------------------------|---------------------------------------|--------------------------------------|--------------------------|
| <b>GENERAL CHARACTERISTICS<br/>OF VENTURE CAPITAL MARKET</b> |                                |                                |                                  |                                 |                                 |                                                                 |                                       |                                      |                          |
| Venture capital association                                  | n=51                           | n=66                           | n=32                             | n=24                            | n=14                            | n=9                                                             | n=6                                   | n=3                                  | n=31                     |
| Number of venture capitalists                                | SAVCA<br>66 approached<br>2000 | BVCA<br>114 approached<br>1994 | EVCA<br>133 approached<br>1995-6 | EVCA<br>58 approached<br>1995-6 | EVCA<br>28 approached<br>1995-6 | HVCA<br>17 members<br>1996-1997                                 | Unclear<br>12 approached<br>1996-1997 | Unclear<br>5 main firms<br>1996-1997 | IVCA<br>47 total<br>1999 |
| Relevant year                                                |                                |                                |                                  |                                 |                                 |                                                                 |                                       |                                      |                          |
| Amount of venture capital invested/available for investment  | c US\$ 4 billion               |                                |                                  |                                 |                                 | US\$ 4 to 500m<br>(excluding EBRD<br>and pan-CEE funds)<br>1995 |                                       | US\$ 96m<br>1996                     | c US\$ 550m<br>1997      |
| Relevant year for cash available for investment              | 2000                           |                                |                                  |                                 |                                 |                                                                 |                                       |                                      |                          |

Table 4.1

#### 4.1 RESPONSE RATE OF THE SURVEY

The response to the instant survey, set out in Table 4.2, was very gratifying and, to the researcher's knowledge, it would appear to be have had as good a response rate as any similar survey done anywhere else in the world. It is also one of the most extensive surveys of its kind done on the South African VC industry, both by respondent number and response rate.

|                            |                                                                                                    |
|----------------------------|----------------------------------------------------------------------------------------------------|
| Country                    | South Africa                                                                                       |
| Questionnaires sent out    | 66                                                                                                 |
| Number of usable responses | 51                                                                                                 |
| Response rate              | 77%                                                                                                |
| Year of study              | Ending December 2000                                                                               |
| Source of respondents      | South African Private Equity and Venture Capital Association and the researcher's private database |

Table 4.2

The response rate from members of SAVCA was 88% while the response rate from non-members was 58%. The split between the respondents was 73% being members of SAVCA and 27% being non-members. It is submitted that this study is representative of the VC industry in South Africa as at the end of December 2000.

The geographic location of the respondents was as follows:

|           | Split by respondents to instant study | Split by members of SAVCA which were targeted as potential respondents |
|-----------|---------------------------------------|------------------------------------------------------------------------|
| Gauteng   | 76 percent                            | 79 percent                                                             |
| Cape Town | 20 percent                            | 17 percent                                                             |
| Durban    | 4 percent                             | 5 percent                                                              |

The highlights of the results are set out below. For the sake of clarity, a five point Likert scale was used, with 5 representing the highest or most favourable score. It is important to remember that “respondents” refer to individual VC funds, not VC firms or institutions which manage VC funds. In addition, comments will be made regarding the “maturity” and “sophistication” of the South African VC market. By “maturity” is meant the point in the business cycle of the VC industry, not the degree of sophistication of the practice of the participants (for which the term “sophistication” is reserved).

#### **4.2 INSTITUTIONAL BACKGROUND & CHARACTERISTICS OF THE RESPONDENTS**

The split between the types of respondent is set out in Table 4.3.

##### **FREQUENCY DISTRIBUTION OF COMPANIES BY INSTITUTIONAL BACKGROUND AND CHARACTERISTICS**

| <b><u>Characteristic</u></b>         | <b><u>Frequency</u></b> | <b><u>Percent</u></b> |
|--------------------------------------|-------------------------|-----------------------|
| <b><u>Company Type?</u></b>          |                         |                       |
| Captive                              | 17                      | 33.3                  |
| Independent                          | 28                      | 54.9                  |
| Semi-captive                         | 4                       | 7.8                   |
| Public Sector                        | 2                       | 3.9                   |
| Other                                | 0                       | 0.0                   |
| Total                                | 51                      | 100.0                 |
| <b><u>Empowerment objective?</u></b> |                         |                       |
| No                                   | 39                      | 76.5                  |
| Yes                                  | 12                      | 23.5                  |
| Total                                | 51                      | 100.0                 |
| <b><u>Development Objective?</u></b> |                         |                       |
| No                                   | 38                      | 74.5                  |
| Yes                                  | 13                      | 25.5                  |
| Total                                | 51                      | 100.0                 |
| <b><u>JSE listing?</u></b>           |                         |                       |
| No                                   | 41                      | 80.4                  |
| Yes                                  | 10                      | 19.6                  |
| Total                                | 51                      | 100.0                 |

Table 4.3

The characteristics of the individual respondent funds are set out in Table 4.4.

SUMMARY STATISTICS OF SELECTED CHARACTERISTICS OF VENTURE CAPITAL FUNDS

| <u>Characteristic</u>                                 | <u>Valid N</u> | <u>Mean</u> | <u>Median</u> | <u>Mode</u> | <u>Min.</u> | <u>Max.</u> | <u>Std Dev.</u> |
|-------------------------------------------------------|----------------|-------------|---------------|-------------|-------------|-------------|-----------------|
| Company experience (in years)                         | 50             | 4.71        | 3.00          | 3.00 (12)   | 0.00        | 40.00       | 6.31            |
| New investments in the last 3 years                   | 50             | 11.22       | 9.00          | 6.00 (6)    | 0.00        | 70.00       | 11.59           |
| Current investments                                   | 50             | 11.46       | 8.50          | †           | 1.00        | 58.00       | 10.98           |
| Managers                                              | 48             | 3.83        | 3.00          | 3.00 (12)   | 1.00        | 15.00       | 2.36            |
| Experience of person completing questionnaire (years) | 50             | 6.25        | 4.25          | 4.00 (8)    | 1.00        | 20.00       | 5.05            |

Table 4.4

( ) *Frequency of mode*

† = *Multiple modes*

The average fund has been in business for a mean of 4 years and 9 months. It is curious that the number of new investments made in the last 3 years (excluding follow-on investments, rights issues in existing investments or the like) and number of current investments is almost identical. The most likely explanation for this is that funds would also have been exiting investments (which are not recorded in this study), thereby resulting in a neutral net position over the three years<sup>61</sup>. Indeed, if the number of new investments made in the last 3 years (a mean of 11.22 is extrapolated across an estimated 75 individual funds), this suggests that over 800 VC investments have been made in different companies or businesses in the last three years. This is broadly consistent with the results of the SAVCA/KPMG studies for 2000 and 2001 which show an increase in investments by number over previous years<sup>62</sup>.

If the mean number of executives or managers per fund (3.83) is extrapolated to an estimated 75 total institutional funds, the total number of investment executives/managers is about 287. Based on previous studies (KPMG 2000, Campbell 1999), this suggests that the employment market has been stagnant since KPMG did

<sup>61</sup> Note also that the wide variation between the mean, median and mode scores in Table 4.4 suggest that the results are probably not normally distributed.

<sup>62</sup> KPMG found that the previous numbers of investments in new companies or businesses were 143 in 1998, 220 in 1999 (KPMG 2000) and 264 investments were made by the surveyed respondents of the SAVCA/KPMG study in 2000 (KPMG 2001).

their report for 1999<sup>63</sup>. This is in keeping with the trend apparent from the identification of 9 VC firms (representing 13 funds) which no longer appear active.

The level of the persons completing the questionnaire was very senior (23 percent were managers, 29 percent were partners and 48 percent were managing directors or chief executive officers). Their average VC experience was a median of 4 years and 3 months and a mean of 6 years and 3 months<sup>64</sup>. The Manigart et al 1997 participants had had far more extensive experience: the Belgian participants had had a median of 9 years and 6 months and the Dutch participants a median of 14 years. This suggests that the South African VC industry is relatively inexperienced.

The majority ownership of 84 percent of respondents was local and the remaining 16 percent had foreign majority ownership. An increased number of foreign participants in the South African VC market will broaden the international skills and contact base of the local VC industry.

71 percent of respondents are full members of SAVCA and 2 percent are associate members. Only 6 percent of South African VCs are members of any other venture capital associations – they are all members of EVCA. This is a suggestion of the insularity of the South African VC industry.

The investment preferences and actual practice of the industry are examined. In the UK, France, Belgium and the Netherlands, Manigart et al 1997 finds a high correlation between the preferences of funds and their actual investment activity (which is not the case in South Africa). Table 4.5 sets out where the respondents have actually invested their funds (calculated by number of investments, not by value).

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<sup>63</sup> However, the SAVCA/KPMG survey for 2000 restated its findings for 1999 and found that there were 319 “investment professionals” working in the industry in 2000 and there had been 293 in 1999. The difference may be definitional: the instant study endeavours to identify “investment executives/managers”.

<sup>64</sup> A further interesting result is that the mean experience of the person who completed the questionnaire exceeds the mean period for which the funds have been involved in VC. Most of the parties completing the questionnaire were very senior and this result is in keeping with the notion that, because of their greater experience, they will have worked either informally in the VC industry or alternatively for other funds that no longer exist or have been consolidated.

**Comparison of Instant Study with the Precedent Studies**

Manigart et al 1997, Karsai et al 1997, Karsai et al 1998, Wright & Robbie 1996, Wright et al 2000

**INVESTMENT PREFERENCES**

**OF SAMPLE**

**SEED**

Investment preference (1='definitely not' to 5='definitely must be')  
Effective % of funds invested for last 3 years in each category

|                                           | South Africa               | Britain | France | Netherlands | Belgium | Hungary                | Poland                 | Slovakia               | India                  |
|-------------------------------------------|----------------------------|---------|--------|-------------|---------|------------------------|------------------------|------------------------|------------------------|
|                                           | Mean                       | Mean    | Mean   | Mean        | Mean    | Mean                   | Mean                   | Mean                   | Mean                   |
| Investment preference                     | 2.0                        | 3.3     | 2.1    | 1.9         | 2.3     | NOT REFLECTED IN PAPER | NOT REFLECTED IN PAPER | NOT REFLECTED IN PAPER | NOT REFLECTED IN PAPER |
| Effective % of funds invested (by number) | 10.71%                     | 17.30%  | 11.80% | 21.00%      | 17.80%  |                        |                        |                        |                        |
|                                           | } <b>Mean Score: 2.6</b> } |         |        |             |         |                        |                        |                        |                        |
|                                           | 3.1                        |         |        |             |         |                        |                        |                        |                        |
| Effective % of funds invested (by number) | 32.31%                     |         |        |             |         |                        |                        |                        |                        |
|                                           | } <b>Mean Score: 2.6</b> } |         |        |             |         |                        |                        |                        |                        |
|                                           | 4.2                        | 2.0     | 3.5    | 3.7         | 4.0     |                        |                        |                        |                        |
| Effective % of funds invested (by number) | 34.00%                     | 29.60%  | 31.60% | 26.30%      | 42.80%  |                        |                        |                        |                        |
|                                           | 3.6                        | 3.3     | 4.3    | 3.0         | 2.9     |                        |                        |                        |                        |
| Effective % of funds invested (by number) | 12.04%                     | 31.20%  | 30.20% | 27.60%      | 8.20%   |                        |                        |                        |                        |
|                                           | 3.3                        | 3.1     | 3.9    | 2.5         | 2.7     |                        |                        |                        |                        |
| Effective % of funds invested (by number) | 2.52%                      | 11.40%  | 15.30% | 5.70%       | 9.80%   |                        |                        |                        |                        |
|                                           | 2.7                        | 2.6     | 2.6    | 1.6         | 2.6     |                        |                        |                        |                        |
| Effective % of funds invested (by number) | 8.42%                      | 3.90%   | 9.70%  | 3.10%       | 16.20%  |                        |                        |                        |                        |

Table 4.5

Had the data been normally distributed a T-test could have been used. However the data were not normally distributed so the Wilcoxon Matched Pairs Test, being a non-parametric test, was used to determine whether actual investments made in each stage of the business cycle to date by each respondent matched that fund's stated investment preferences by stage. There was significant difference in the ratings (in Question 2 compared to those in Question 6: p-value = 0.028). Thus the various funds' prior investments had not been made according to their current stated preferences by investment stage. This suggests that either South African VCs are inconsistent (which is a further suggestion of unsophistication) or that they have adjusted their mandate in the light of changes in the VC market. The latter would seem to be more likely because there has been considerable change of VC market conditions in the last few years and many funds are likely to have reconsidered their positioning in the market. If this is so, this flexibility is an indication of sophistication.

### **4.3 EVALUATION CRITERIA**

The evaluation criteria which were examined in the questionnaire are listed first by category of criteria in Tables 4.6 to 4.12. These criteria, including their standard deviations, modes, medians, minimum and maximum scores are set out more fully in Annexure 7.5. The criteria identified below only describe what South African VCs regard as important, but shed no light on whether the application of these criteria will result in better investment returns or not.

#### **PERSONALITY AND EXPERIENCE OF THE ENTREPRENEURIAL TEAM**

The personality and experience of the entrepreneurial team is frequently cited as the main determinant of the success of the underlying VC investment. As reflected in Table 4.6, the evaluation criteria applied by South African VC funds show that by far the most important criterion is the integrity of the entrepreneur. This received not only the

highest score (4.90), but it had by far the lowest standard deviation (0.3), showing great congruence of opinion.

Familiarity with the target market, or 'domain knowledge', ranked second (4.65) in South Africa. In the UK (4.54), Hungary (4.6), Poland (4.6), Slovakia (4.0), India (4.6), the single most important issue was a thorough knowledge by the entrepreneurial team in their field of endeavour. This is not an unexpected result. Results were not available for France, the Netherlands and Belgium. If the criterion relating to integrity is excluded (it was not asked in the precedent studies), this would have also been the most important issue for South African VCs.

The capability for sustained, intense effort (4.63) followed as third most important criterion in South Africa. Next came good judgement (4.57) followed by the need for the entrepreneur to have made a significant investment himself or herself in the investee (4.55). A reference from a trustworthy source was regarded as only moderately important. A formal education was regarded as the least important entrepreneurial characteristic that was raised (although this response had the highest standard deviation of all entrepreneurial characteristics, suggesting that not all respondents share this view).

## RANKINGS OF CRITERIA DURING INVESTMENT APPRAISAL

| <b>PERSONALITY AND CHARACTERISTICS OF ENTREPRENEURIAL TEAM</b> |              |                |                  |
|----------------------------------------------------------------|--------------|----------------|------------------|
| <b>Description</b>                                             | <b>Mean*</b> | <b>Valid N</b> | <b>Std. Dev.</b> |
| Has integrity                                                  | 4.90         | 51             | 0.30             |
| Is capable of sustained, intense effort                        | 4.63         | 51             | 0.56             |
| Has good judgement                                             | 4.57         | 51             | 0.57             |
| Has a significant investment or stake in the investee          | 4.55         | 51             | 0.64             |
| Is able to evaluate and react to risk well                     | 4.47         | 51             | 0.54             |
| Displays strategic vision                                      | 4.45         | 51             | 0.64             |
| Has good personal "chemistry" with VC                          | 3.90         | 51             | 0.83             |
| Attends to detail                                              | 3.84         | 51             | 0.70             |
| Is articulate in discussing his/her venture                    | 3.75         | 51             | 0.82             |
| Was referred to VC by a trustworthy source                     | 3.12         | 51             | 0.93             |
| Has a good relevant formal education                           | 2.80         | 51             | 0.94             |
| <b>EXPERIENCE OF ENTREPRENEURIAL TEAM</b>                      |              |                |                  |
| <b>Description</b>                                             | <b>Mean*</b> | <b>Valid N</b> | <b>Std. Dev.</b> |
| Is thoroughly familiar with the market targeted by venture     | 4.65         | 51             | 0.52             |
| Good references are available on the entrepreneur              | 4.25         | 51             | 0.77             |
| Has good relevant business and industry experience             | 4.23         | 50             | 0.79             |
| Has demonstrated leadership/managerial ability in the past     | 4.18         | 51             | 0.79             |
| Has a track record relevant to venture                         | 4.14         | 51             | 0.69             |

Table 4.6

\* Where 5=essential and 1=irrelevant

## CHARACTERISTICS OF THE PRODUCT OR SERVICE

Research has suggested that, while the quality of the entrepreneurial team is regarded as key, VCs give far greater credence to the product or service than they realise. Whereas the scores for the entrepreneurial team were high with standard deviations generally below 1, the scores for this section were lower with standard deviations generally exceeding 1. This suggests that there was less agreement amongst respondents. The highest rated items were that the product had been developed to the point of a functioning prototype (3.82) and that the product or service had a good lead time on the market (3.80). The least important issue was that the product or service could be regarded as "high tech". These results are set out in Table 4.7.

## RANKINGS OF CRITERIA DURING INVESTMENT APPRAISAL

| <b>CHARACTERISTICS OF PRODUCT OR SERVICE</b>               |              |                |                  |
|------------------------------------------------------------|--------------|----------------|------------------|
| <b>Description</b>                                         | <b>Mean*</b> | <b>Valid N</b> | <b>Std. Dev.</b> |
| Has been developed to the point of a functioning prototype | 3.82         | 50             | 1.29             |
| Has a good lead-time on the market competition             | 3.80         | 51             | 0.94             |
| Enjoys demonstrated market acceptance                      | 3.71         | 51             | 0.88             |
| Has propriety intellectual property                        | 3.71         | 51             | 1.12             |
| May be described as "high tech"                            | 2.79         | 51             | 1.28             |

Table 4.7

\* Where 5=essential and 1=irrelevant

## TARGET MARKET

Research has also suggested that, in addition to the quality of the entrepreneurial team and the product or service, they also place far greater importance on the market, especially the level of competition, than they realise. Table 4.8 shows that the most important characteristic of the target market was that it enjoyed a significant growth rate (4.25) with a standard deviation of 0.69 suggesting relatively high agreement amongst respondents on this issue. It was also important that the investee should be participating in an industry in which the VC wished to invest and that there should be good barriers to entry. Interestingly, it was not important to VCs whether the product or service created a new market or not.

## RANKINGS OF CRITERIA DURING INVESTMENT APPRAISAL

| <b>CHARACTERISTICS OF TARGET MARKET</b>                           |              |                |                  |
|-------------------------------------------------------------------|--------------|----------------|------------------|
| <b>Description</b>                                                | <b>Mean*</b> | <b>Valid N</b> | <b>Std. Dev.</b> |
| Enjoys a significant growth rate                                  | 4.25         | 51             | 0.69             |
| The venture is in an industry in which VC wishes to invest        | 4.20         | 51             | 0.80             |
| There are good barriers to entry                                  | 4.01         | 51             | 0.72             |
| Potential for overseas markets                                    | 3.84         | 51             | 1.07             |
| Little threat of competition during the initial investment period | 3.42         | 51             | 0.78             |
| The venture is in an industry with which the VC is familiar       | 3.24         | 51             | 1.16             |
| Is large                                                          | 3.23         | 51             | 1.45             |
| Will create a new market                                          | 2.65         | 51             | 0.87             |
| Is mature                                                         | 2.35         | 51             | 0.96             |

Table 4.8

\* Where 5=essential and 1=irrelevant

## OPERATIONAL ISSUES

The most important operational issue was whether the entrepreneur had gained control of key resources in advance of an investment being made (4.16). The quality of the general employees was regarded as the second most important characteristic. Although the existence of a suitable employee incentive scheme rated lowest (3.37), it had the highest standard deviation which suggests that there was disagreement amongst VCs as to this characteristic. Table 4.9 summarises these results.

### RANKINGS OF CRITERIA DURING INVESTMENT APPRAISAL

| <b>OPERATIONAL ISSUES WHICH MUST BE IN GOOD ORDER</b> |              |                |                  |
|-------------------------------------------------------|--------------|----------------|------------------|
| <b>Description</b>                                    | <b>Mean*</b> | <b>Valid N</b> | <b>Std. Dev.</b> |
| Entrepreneur has gained control of key resources      | 4.16         | 50             | 0.74             |
| General employees are of good quality                 | 4.14         | 51             | 0.63             |
| Distribution system/channels                          | 3.71         | 51             | 0.86             |
| Production techniques/facilities                      | 3.41         | 51             | 0.92             |
| Existence of a suitable employee incentive scheme     | 3.37         | 51             | 1.13             |

Table 4.9

\* Where 5=essential and 1=irrelevant

## FINANCIAL CONSIDERATIONS

Table 4.10 shows that the ability to add value beyond the mere provision of cash was the most important financial consideration (4.25). The coherence and thoroughness of the business plan rated as the next most important characteristic. The least important issues were whether the business was profitable or cash flow positive (2.84) followed interestingly by the existence of an independent co-investor (1.98).

## RANKINGS OF CRITERIA DURING INVESTMENT APPRAISAL

| <b>FINANCIAL CONSIDERATIONS</b>                                                |              |                |                  |
|--------------------------------------------------------------------------------|--------------|----------------|------------------|
| <b>Description</b>                                                             | <b>Mean*</b> | <b>Valid N</b> | <b>Std. Dev.</b> |
| VC is able to add value to the investee beyond merely the provision of capital | 4.25         | 51             | 0.77             |
| A coherent and thorough business plan                                          | 4.22         | 51             | 0.76             |
| An investment that can be easily made liquid (e.g. IPO)                        | 3.93         | 51             | 1.09             |
| Financial control systems are in a good state                                  | 3.73         | 51             | 1.08             |
| The expected percentage shareholding falls within a given range                | 3.69         | 51             | 1.07             |
| Meets 'key' financial ratio benchmarks                                         | 3.61         | 51             | 1.10             |
| Investments must require funding above a defined minimum size                  | 3.60         | 50             | 1.23             |
| The venture is already profitable or cash flow positive                        | 2.84         | 51             | 1.21             |
| There is an independent co-investor                                            | 1.98         | 51             | 0.91             |

Table 4.10

\* Where 5=essential and 1=irrelevant

## PREFERENCES FOR THE STAGE IN THE BUSINESS CYCLE

It has already been noted that the intended preferences of South African VCs by stage differ from their past practice, suggesting there is poor congruence. Only the results for the UK, France, the Netherlands and Belgium were available for comparison with South Africa.

The South African mean results, set out in Table 4.11, for seed and start-up were calculated and reveal that South African VCs (scoring 2.6 on the Likert scale<sup>65</sup>) are not as eager to invest in earlier stage as their British peers (3.3), but are more eager than France (2.1), the Netherlands (1.9) and Belgium (2.3). SA VCs have the greatest appetite for expansion/development stage investments, scoring 4.16 (while this is not regarded as attractive in the UK). This is followed by management buy-outs (3.56) as the next most attractive in SA. Interestingly, in comparison to the UK, where there is a strong buy-out industry, SA reflects a higher preference for MBOs and MBIs. Another apparent anomaly in South Africa is an appetite for management buy-ins (3.34)

<sup>65</sup> This was done by taking the mean of the means reflected in Table 4.11 for both 'early stage/start-up' (3.11) and 'seed capital' (2.02). The number of observations is almost identical (51 and 50) which would suggest that this approach would provide a reasonably accurate result.

notwithstanding that very few VCs have so far actually made an investment in a management buy-in. The seed stage (2.02) ranked slightly less attractive than the secondary purchase or replacement stage (2.74). Replacement transactions are regarded as being largely unattractive in all the above countries, although SA had the highest preference (2.74). The stage in the business cycle is regarded as a rough proxy for risk. For reasons stated in Section 3.8, Chapter 3, interpretation of these comparisons should be treated with caution.

#### RANKINGS OF CRITERIA DURING INVESTMENT APPRAISAL

| <b>PREFERENCE FOR STAGE IN BUSINESS CYCLE</b> |              |                  |                |
|-----------------------------------------------|--------------|------------------|----------------|
| <b>Description</b>                            | <b>Mean*</b> | <b>Std. Dev.</b> | <b>Valid N</b> |
| Development/expansion                         | 4.16         | 0.78             | 51             |
| Management buyout (MBO)                       | 3.56         | 1.26             | 50             |
| Management buy-in (MBI)                       | 3.34         | 1.08             | 50             |
| Early stage/start-up investment               | 3.11         | 1.29             | 51             |
| Secondary purchase/replacement                | 2.74         | 0.99             | 50             |
| Seed capital investment                       | 2.02         | 1.33             | 50             |

Table 4.11

\* Where 5=very attractive and 1=very unattractive

#### OVERALL RATING OF CONSIDERATIONS

When all of the considerations are lined up next to each other, regardless of the way in which they were categorised in the questionnaire, how do they rank? As appears from Table 4.12, the quality of the entrepreneurial team is clearly the key issue for South African VCs and this relates to the first 7 items in Table 4.12 (scoring 4.45 through to 4.90). The focus on integrity (4.90) is probably due to the reliance of the VC on the entrepreneurial team rather than on more conventional corporate governance (which includes a board of directors' right to replace poor management) and the inability of smaller companies to secure a strong financial director who can counterbalance the managing director. For example, the state of the financial control systems (3.73) is regarded as less important than a number of other entrepreneurial team issues, which may be an acknowledgment of this in that most VCs expect that the financial control systems will need improvement. It would be interesting to establish how VCs establish

the integrity of the entrepreneurial team<sup>66</sup>. Certainly they need good references (4.25). It is not, however, as important that the VC and the entrepreneur have good “chemistry” (3.90) - other features of the entrepreneurial team are more important.

It was anticipated that in a South African context there would be an unequivocal requirement for a so-called “A” team because there is a shortage of management in South Africa. While Campbell 2000 surmises that financial capital may one day replace intellectual capital in importance, it is submitted that this is a luxury afforded to better developed countries such as the USA where VCs have access to a large pool of managerial talent and are prepared to pay internationally competitive remuneration. In South Africa, the challenge is greater – there are relatively less people with internationally competitive management skill and, if management is sought abroad, it is usually very expensive. South African VCs face a considerable challenge in the battle for management talent.

Caution will be expressed shortly when considering the inherent value of knowing the overall required rate of return. This same issue arises in the consideration of evaluation criteria: depending on the weighting in the response sample, the criteria may be different. If there are a large proportion of early stage investors in the sample, the requirement for the venture to be cash flow positive may be less highly ranked. That this is possible appears from the low requirement that the investee is already cash flow positive (2.84). There is a high standard deviation, suggesting a lack of congruence. This is not unexpected – on one hand, a buy-out can only be structured if there is a cash flow to service the debt or preference shares, and on the other hand, an early stage is quite likely not going to be generating cash.<sup>67</sup>

Also of interest is the fact that investments need not be “high tech” to attract VC attention (2.79, SD 1.28).<sup>68</sup> VCs do not regard the creation of a new market as very important (2.65) – far more important are that the market is growing and the entrepreneurial team has obtained control of key resources (4.16) and created barriers to

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<sup>66</sup> The Business Day reported on a study done by the Hay Group and, interestingly, noted that “entrepreneurs are more likely to display high levels of integrity than company CEOs...” (Business Day 2001).

<sup>67</sup> This comment also applies to the requirement for a functioning prototype (3.82).

<sup>68</sup> This corroborates Knight 1994.

competitive entry (4.01) or there is little initial threat of competition (3.42) or has a good lead time on the market (3.80).

A surprising result is the low importance attached to an independent co-investor (1.98, SD 0.91). In many other countries co-investment and investment consortia are the standard practice and it would be interesting to find out what the ranking is of this criterion in other countries. On one hand it suggests a lack of sophistication and perhaps that the market is immature. On the other hand, it suggests that the market is very competitive and VCs are not prepared to share their investments. This latter possibility would suggest a mature VC market had developed in South Africa. It is submitted that the South African market is mature yet with some lack of sophistication.

It should be noted that the time lapse between the instant study in South Africa and the precedent studies is five years (France, Netherlands and Belgium) and six years (United Kingdom). This may have an effect on the comparative results set out in Tables 4.12, 4.13, 4.14 and 4.16. It is submitted that this effect would have been less insofar as risk factors and appraisal criteria are concerned but greater insofar as required rates of return are concerned.

RANKINGS OF INVESTMENT APPRAISAL CRITERIA (UNGROUPEd)

| Rank | Description                                                                     | South Africa<br>2000 |              | UK<br>1994 |
|------|---------------------------------------------------------------------------------|----------------------|--------------|------------|
|      |                                                                                 | Mean                 | Std.<br>Dev. | Mean       |
| 1    | Entrepreneurial team has integrity                                              | 4.90                 | 0.30         | N/a**      |
| 2    | Entrepreneurial team is thoroughly familiar with the market targeted by venture | 4.65                 | 0.52         | 4.54       |
| 3    | Entrepreneurial team is capable of sustained, intense effort                    | 4.63                 | 0.56         | 4.25       |
| 4    | Entrepreneurial team has good judgement                                         | 4.57                 | 0.57         | N/a        |
| 5    | Entrepreneurial team has a significant investment or stake in the investee      | 4.55                 | 0.64         | N/a        |
| 6    | Entrepreneurial team is able to evaluate and react to risk well                 | 4.47                 | 0.54         | 4.41       |
| 7    | Entrepreneurial team displays strategic vision                                  | 4.45                 | 0.64         | N/a        |
| 8    | VC is able to add value to the investee beyond merely provision of capital      | 4.25                 | 0.77         | N/a        |
| 9    | Market enjoys a significant growth rate                                         | 4.25                 | 0.69         | 3.61       |
| 10   | Good references are available on the entrepreneurial team                       | 4.25                 | 0.77         | 4.20       |
| 11   | Entrepreneurial team has good relevant business and industry experience         | 4.23                 | 0.79         | N/a        |
| 12   | A coherent and thorough business plan                                           | 4.22                 | 0.76         | 4.20       |
| 13   | The venture is in an industry sector in which the VC wishes to invest           | 4.20                 | 0.80         | N/a        |
| 14   | Entrepreneurial team has demonstrated leadership/managerial ability in the past | 4.18                 | 0.79         | 4.54       |
| 15   | Entrepreneurial team has gained control of key resources                        | 4.16                 | 0.74         | N/a        |
| 16   | General employees are of good quality                                           | 4.14                 | 0.63         | 3.91       |
| 17   | Entrepreneurial team has a track record relevant to venture                     | 4.14                 | 0.69         | 4.24       |
| 18   | There are good barriers to entry                                                | 4.01                 | 0.72         | N/a        |
| 19   | An investment that can be easily made liquid (e.g. IPO)                         | 3.93                 | 1.09         | N/a        |
| 20   | Entrepreneurial team has good personal "chemistry" with the VC                  | 3.90                 | 0.83         | N/a        |
| 21   | Potential for overseas markets                                                  | 3.84                 | 1.07         | N/a        |
| 22   | Entrepreneurial team attends to detail                                          | 3.84                 | 0.70         | 3.50       |
| 23   | Product or service has been developed to the point of a functioning prototype   | 3.82                 | 1.29         | 3.71       |
| 24   | Product or service has a good lead-time on the market competition               | 3.80                 | 0.94         | N/a        |
| 25   | Entrepreneurial team is articulate in discussing the venture                    | 3.75                 | 0.82         | 2.82       |
| 26   | Financial control systems are in a good state                                   | 3.73                 | 1.08         | 4.14       |
| 27   | Distribution system/channels are in a good state                                | 3.71                 | 0.86         | N/a        |
| 28   | Product or service enjoys demonstrated market acceptance                        | 3.71                 | 0.88         | 3.82       |
| 29   | Has proprietary intellectual property                                           | 3.71                 | 1.12         | N/a        |

|    |                                                                    |      |      |     |
|----|--------------------------------------------------------------------|------|------|-----|
| 30 | The expected % shareholding falls within a given range             | 3.69 | 1.07 | N/a |
| 31 | Meets 'key' financial ratio benchmarks                             | 3.61 | 1.10 | N/a |
| 32 | Investment must require funding above a defined minimum size       | 3.60 | 1.23 | N/a |
| 33 | Little threat of competition during the initial investment period  | 3.42 | 0.78 | N/a |
| 34 | Production techniques/facilities are in a good state               | 3.41 | 0.92 | N/a |
| 35 | Existence of a suitable employee incentive scheme                  | 3.37 | 1.13 | N/a |
| 36 | The venture is in an industry sector with which the VC is familiar | 3.24 | 1.16 | N/a |
| 37 | The market is large                                                | 3.23 | 1.45 | N/a |
| 38 | The investee was referred to the VC by a trustworthy source        | 3.12 | 0.93 | N/a |
| 39 | The investee is already profitable or cash flow positive           | 2.84 | 1.21 | N/a |
| 40 | Entrepreneurial team has a good relevant formal education          | 2.80 | 0.94 | N/a |
| 41 | Product or service may be described as "high tech"                 | 2.79 | 1.28 | N/a |
| 42 | Product or service will create a new market                        | 2.65 | 0.87 | N/a |
| 43 | The market is mature                                               | 2.35 | 0.96 | N/a |
| 44 | There is an independent co-investor                                | 1.98 | 0.91 | N/a |

Table 4.12

\* Where 5=essential and 1=irrelevant

\*\* Result not available

Thus the hypothesis is supported by the results:

A1 *The most important evaluation criteria will comprise the characteristics of the entrepreneurial team relating to personality and experience.*

#### 4.4 REQUIRED RATE OF RETURN

##### OVERALL REQUIRED RATE OF RETURN

The overall mean required rate of return in Rands per fund was 35.1 percent (median: 30 percent; mode 30 percent)<sup>69</sup>. It should be noted that this return is not normally distributed and for good reason. The overall required rate of return is the combination of the returns of respondents which invest in various stages of the investment cycle.

The majority of respondents invest in the later stages of expansion, buy-out and buy-in. These stages are generally regarded as less risky than seed and early stage. Therefore it is to be expected that the majority of respondents demand lower rates of return, around 20 to 30 percent, and that there should be a diminishing weighting in favour of the higher rates of return (being 30 to 40 percent and 40 to 50 percent) as reflected in the histogram in Figure 5 in Annexure 7.5.

A word of caution: many studies have investigated the overall required rates of return of VCs. However, this can be misleading when viewed in isolation. It fails to incorporate the element of risk which each respondent fund is prepared to assume. By way of example, a buy-out fund which requires an overall rate of return of 30 percent probably has a more aggressive expectation than a seed investment fund which requires a return of 50%. The investment stage is generally regarded as a good proxy for risk. It should be noted that both the instant and the precedent questionnaires enquired about the overall required return after tax without explicitly identifying whether net or gross returns were sought<sup>70</sup>. Obviously there is an implicit assumption that an overall after-tax return is a net return. However, the after-tax required rate of return by a specific investment stage would comprise a subset of the overall required return without a full cost allocation and would therefore most likely consist of a gross return with a notional tax adjustment. Because of this difference in calculation of the required rates of return for the overall fund versus the specific investment stage, the required rates of return by each stage of investment were subsequently analysed for comparison *inter se*.

In Section 2.9 of Chapter 2, the question was raised as to whether the required rates of return were based on well-diversified portfolios or whether they were based on undiversified portfolios. The response to the questionnaire was that a majority (53 percent) of the respondents indicated that they regarded their portfolios as well-diversified.

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<sup>69</sup> This corroborates the estimate of 36% in Capital B Management 1999.

<sup>70</sup> A net return is calculated after the deduction of all fees and costs in the fund from the gross return.

## REQUIRED RATES OF RETURN BY INVESTMENT STAGE

The median required rates of return were calculated for each investment stage. Several respondents furnished required rates of return for stages in which they had either very limited existing exposure or had very limited intentions to invest in that stage in the future. These observations were excluded for this exercise. Thereafter, the median required rates of return for selected characteristics were calculated. Some of the results for the selected characteristics were inconclusive because of the small number of observations. The reliability of results should be regarded as merely indicative where the numbers of observations are limited. In each figure, the trend line for all responses is superimposed for comparison purposes.

### All respondents

When all median responses are considered by stage, the following trend emerges (Figure 4.1):

- The earlier the stage, the higher the required rate of return. The median required rates of return diminish in a curvilinear fashion from the seed stage through to the MBO stage and then level out for the MBO, MBI and replacement stage. This is in keeping with financial theory in that the earlier stage investments are regarded as more risky investments and therefore the required rates of return diminish as the investment stage becomes later.
- Investment stage appears to be a good proxy for risk because the required rates of return are higher for the earlier stages. The higher required rates are a reward for assuming greater risk.
- Based on the above assumption, the risk profiles of MBOs, MBIs and replacement transactions are regarded as similar by South African VCs and the least risky. This differs from the precedent studies insofar as both expansion stage investments in the UK and France, and replacement transactions in France, are seen as having a lower risk profile than MBOs and MBIs. Manigart et al 1997 surmises that this is

probably because the changes in management and ownership in an MBO or an MBI are perceived as more disruptive<sup>71</sup>.

- The median required rates are the same for the MBO, MBI and replacement stages.
- Two respondents required the same rate regardless of the stage, one requiring 25 percent and the other 100 percent throughout. This is particularly surprising because both respondents professed to invest in all stages. This suggests a less sophisticated approach.
- There was a total of 147 valid observations. Where there are over 20 observations for each stage, the observations within each stage tend to be normally distributed, although this is not always the case.

Figure 4.1 below shows the results of all the respondents<sup>72</sup>.

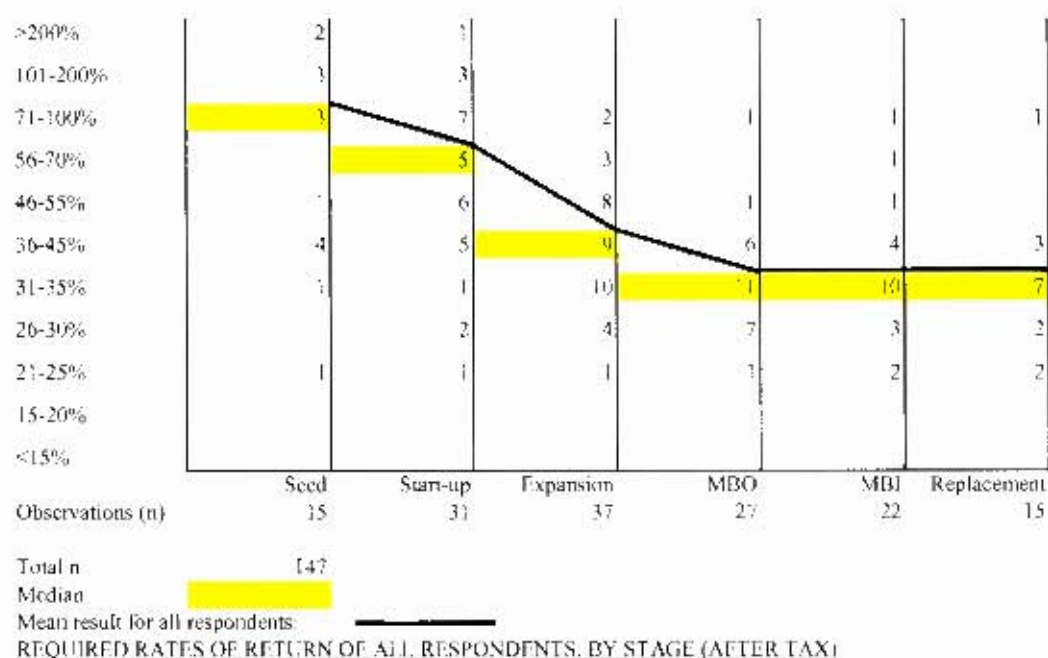


Figure 4.1

<sup>71</sup> Wright & Robbie notes that in the UK MBO funds have generally yielded better returns than other funds (including earlier stage funds) and comment ironically that "it is notable, if not perverse, that funds involving the lowest risk categories earned the highest returns" (Wright & Robbie 1998:554). There are several possible explanations for this: First, the buyer is in the unusual position of having all of the information relating to the investment while the seller is disadvantaged in this regard. Second, the seller also faces an additional risk being the potential loss of the management team if the MBO is not concluded. In this light, this issue may not be as perverse as it initially appears.

<sup>72</sup> These results refine the estimates of Mullet 1998.

REQUIRED NOMINAL MEDIAN INTERNAL RATES OF RETURN PER INVESTMENT STAGE AS ADJUSTED FOR SOUTH AFRICAN RANDS

| <u>MEDIAN OF<br/>REQUIRED IRRs</u> | <u>SOUTH<br/>AFRICA<br/>2000</u> | <u>UK<br/>1994<br/>(add 7%)</u> | <u>FRANCE<br/>1995<br/>(add 8%)</u> | <u>BELGIUM/<br/>NL 1995<br/>(add 9%)</u> |
|------------------------------------|----------------------------------|---------------------------------|-------------------------------------|------------------------------------------|
| Overall (all stages)               | 30%*                             | 37%**                           | 33%                                 | 24%                                      |
| Seed/start-up/early                | 56-70%***                        | 53-62%                          | 44-63%                              | 40-44%                                   |
| Expansion/development              | 36-45%                           | 33-37%                          | 29-34%                              | 30-34%                                   |
| MBO                                | 31-35%                           | 38-42%                          | 34-38%                              | 30-34%                                   |
| MBI                                | 31-35%                           | 38-42%                          | 34-38%                              | 30-34%                                   |
| Secondary/replacement              | 31-35%                           | Not asked                       | 34-38%                              | <29%                                     |

\*The mean nominal required rate of return is 35%

\*\*The mean nominal required rate of return is 36%<sup>73</sup>

\*\*\*The seed stage median is 71 to 100% and the start-up/early stage median is 56 to 70%

Table 4.13

It is useful to note that since the mid to late 1990s the required rates of return of SA VCs have increased by about 2 percent. No adjustment has been made to the figures used for comparatives below, but this should be borne in mind.

These results were adjusted to returns in South African Rands (see Table 4.13 and Annexure 7.6). Although the mean overall required rates are almost the same for South Africa (35.1%) and The UK (36.2%), the median for SA is lower (30%) than the UK (37%). SA has a lower median overall required rate of return than France (33%), but higher than the Netherlands and Belgium (together: 24%). For reasons advanced earlier, the overall required rate is strongly influenced by the overall preference of VCs for the stage of investment and can be misleading.

An examination of the required rates by stage, converted to South African Rands, reveals that SA has the highest required rates for seed, start-up and expansion stage

<sup>73</sup> Note that the overall return for the UK is skewed by the exclusion of the required rates of return at the secondary or replacement stage. The exclusion of these rates means that the mean overall required rate of

investments. Insofar as buy-outs are concerned, along with the Netherlands and Belgium, SA has the lowest required rates. No results were available for Hungary, Poland, Slovakia and India. There is not much difference between the countries in respect of replacement investments, although the Netherlands and Belgium require slightly lower rates. These differences in required rates of return between South Africa and the developed countries of the UK, France, the Netherlands and Belgium may be based on broad country risk and the nature of the South African VC market. For example, the VC markets are less efficient in the earlier stages of the business cycle (seed, start-up and expansion) and more so in the later stages (MBO, MBI, replacement). Thus earlier stage investments may tend to reflect a more insular required rate of return while the later stages, being more efficient, thus reflect a required rate of return that is more in keeping with international trends. This might explain why the South African required rates are so much higher for earlier stages – they reflect a broad risk which incorporates not just country risk in the traditional sense, but also the risk associated with being farther away from developed world markets and trends and also not having the necessary network and experience to break into the foreign markets. At the later stages, one would expect the required rates to be more closely aligned with international rates.

#### Local or foreign ownership of respondent

Foreign or local respondents were determined by those which have a majority South African or foreign ownership. There were insufficient responses from the foreign respondents (12) to present a conclusive result. The foreign respondents were more reticent about their required rates of return, often not returning a figure in the questionnaire. Figure 4.2 shows that the median required rates of return of local respondents mirrored the sample of all respondents.

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return for the UK is probably overstated on the high side, so the rate cannot be properly compared to the South African mean overall rate of return.

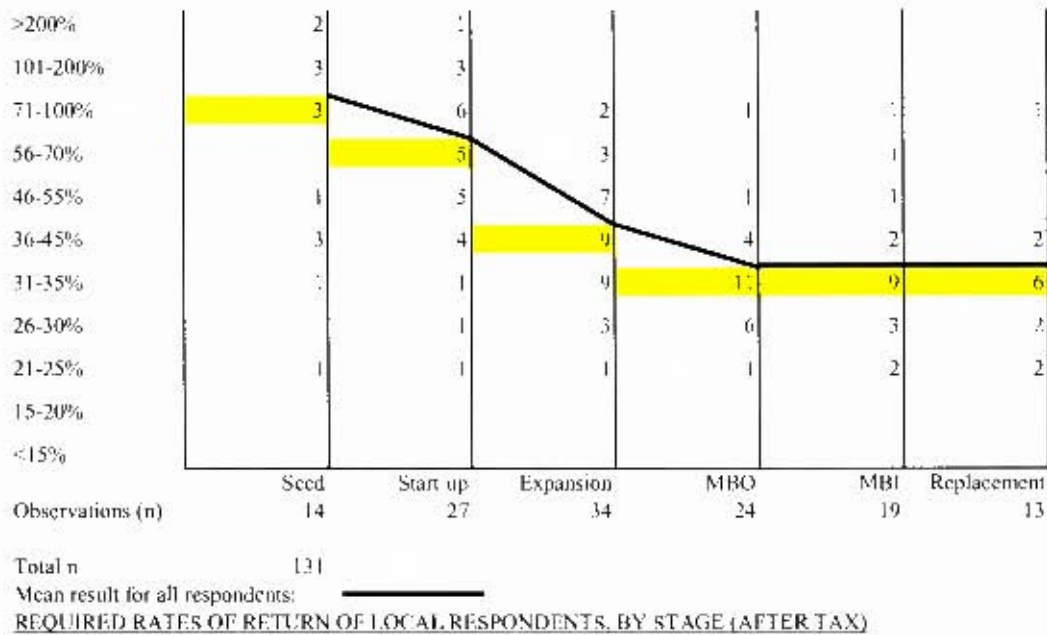


Figure 4.2

It was therefore impossible to resolve the hypothesis:

- B1 *When foreign and locally owned respondents are compared, foreign respondents will require higher rates of return.*

### Maturity of respondent

Those respondents which had been in business for 5 years or longer were regarded as maturer, while those which had been in business for less than 5 years were regarded as being less mature. The maturer respondents were more reticent about their required rates of return, often not returning a figure in the questionnaire. Figure 4.3 and Figure 4.4 show that the more mature respondents clearly make less seed investments. They generally have a lower required rate of return than the less mature respondents which would appear to be counter-intuitive.

Note that it is the newer respondents which generally invest in the seed stage and they require lower rates for the start-up stage. Both newer and the maturer respondents require the same rates of return for all other stages other than MBOs for which the maturer respondents require lower rates of return. Note that previous studies have

maturer respondents require lower rates of return. Note that previous studies have shown that maturer firms require higher rates of return than newer VC firms (Tate 1989) and that VCs in more mature or developed markets, such as in the UK, require higher rates of return than in less developed markets such as France, Belgium and the Netherlands (Manigart et al 1997).

The hypothesis was not supported by the results:

B2 *More mature respondents will require higher rates of return than less mature respondents.*

The evidence from the instant study that maturer VCs require lower rates of return for MBOs or MBIs requires some explanation. Using the age of a fund as a rough proxy for the fund's collective experience, the following possibilities exist:

1. South Africa may not be a developed or mature market. There is evidence that, while the market is approaching maturity, there is some lack of sophistication.
2. More mature funds may have built up a track record and control larger sums for investment. It may be more efficient for them to invest in larger deals, typically MBOs and MBIs.
3. More mature funds have the experience to give a "haircut" to the financial projections of entrepreneurs before applying the required rate of return, thereby applying a melange of a certainty equivalent and a required rate of return.
4. More mature funds may see a better quality of deal flow through having been in the business for a longer period.
5. More mature funds may identify potential winners more efficiently and their experience may enable them to manage and avoid risk better, either through better selection or through better value-added monitoring.
6. Less mature funds may control for their lack of experience in items 2 to 5 above by simply applying a higher required rate of return.

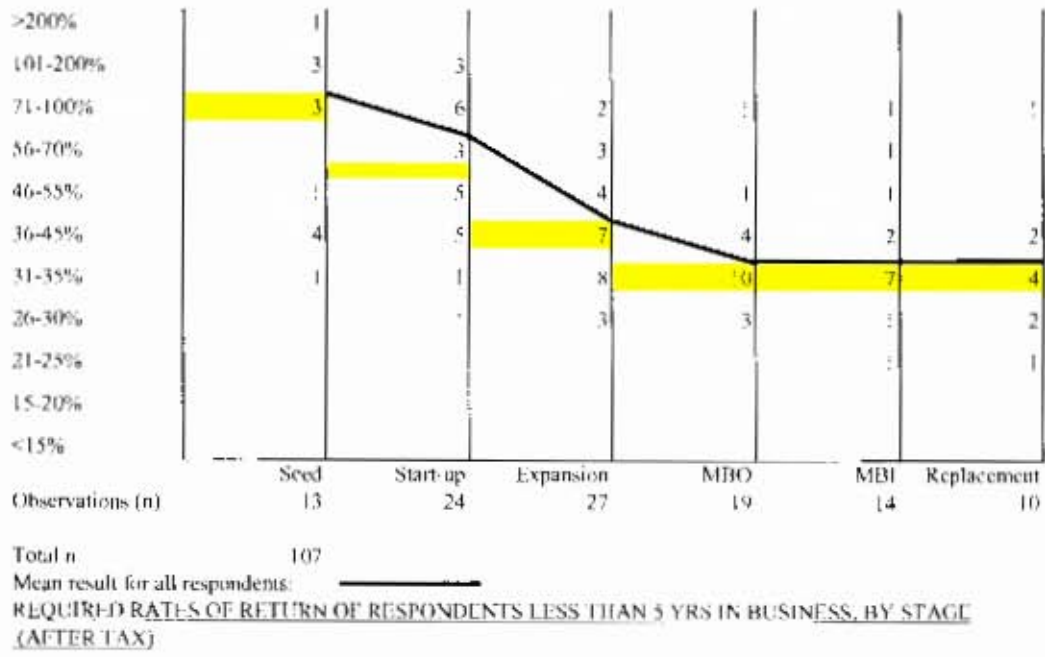


Figure 4.3

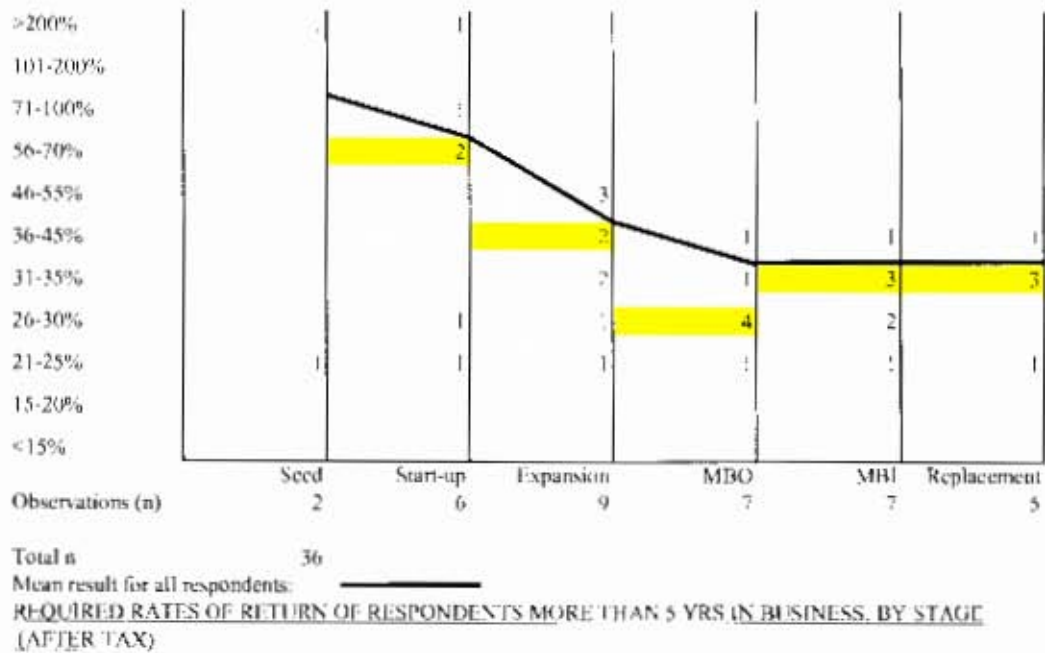


Figure 4.4

## Development vs non-development respondents

This distinction was between those respondents which had a development objective and those which did not (Figures 4.5 and 4.6). Clearly, and not unexpectedly, the non-development respondents mirrored the sample of all respondents and required higher rates of return than the development respondents.

The results support the hypothesis:

B3 *Development respondents will not require as high returns as non-development respondents.*

This result suggests that the development funds are fulfilling their mandates in two ways:

1. They require lower rates of return for investments which fall into their definition of development.
2. They appear to be active in the earlier stages of investment, a stage when it is more difficult to find funding.

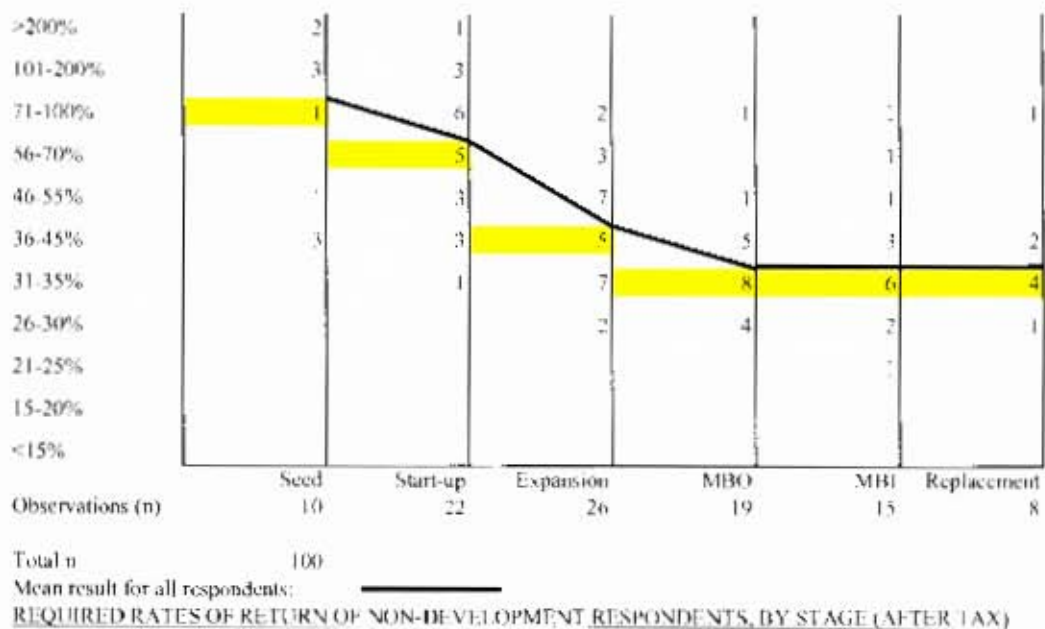


Figure 4.5

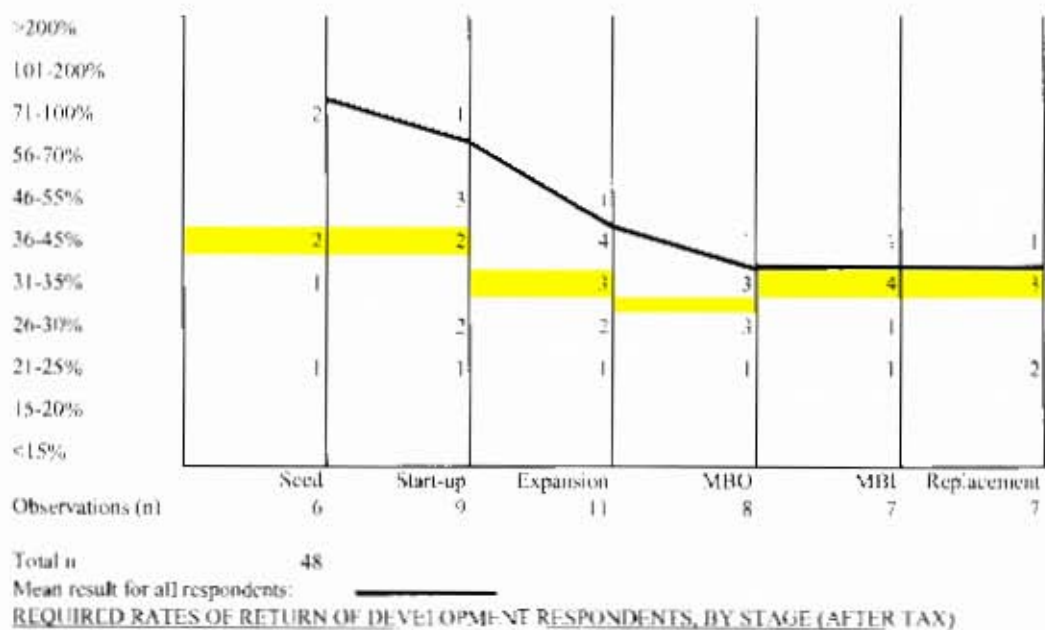


Figure 4.6

Listed vs unlisted respondents

Listed respondents are those which are listed on the Johannesburg Stock Exchange. There were insufficient responses (14) from the listed respondents to present a figure. The listed respondents were more reticent about their required rates of return, often not returning a figure in the questionnaire. The median required rates of return of unlisted respondents largely mirrored the sample of all respondents other than the start-up stage where they require a lower rate of return, as set out in Figure 4.7. This implies that listed respondents might require a higher rate of return at this stage. Nonetheless, there is no support for the hypothesis:

B4 *Listed respondents will require a higher return than unlisted respondents.*

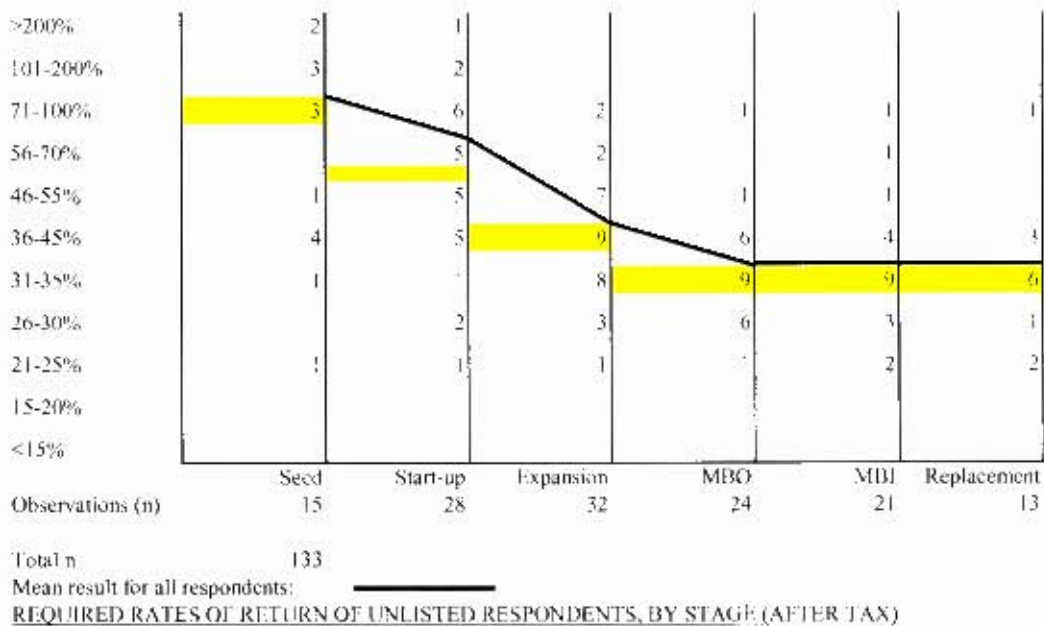


Figure 4.7

Independents vs captives and semi-captives

These responses were split evenly. The median required rates of return of independent respondents mirrored the sample of all respondents (Figure 4.8). However, the trend indicates that captives and semi-captives have lower required rates of return in the

earlier stages of the business cycle (seed and start-up) (Figure 4.9). Therefore there is support for the hypothesis:

*B5 Independent respondents will require higher rates of return than captives and semi-captives.*

Some possible reasons for this include the following:

1. Captives and semi captives typically have access to the networks of their parents which are often early customers of the investee. This can accelerate an investee's early stage business, thereby removing some of the risk. The parent network may also provide other skills and experience which enable captive funds to better manage their investee risk and resulting in them being prepared to accept lower rates of return.
2. The captives may be subject to strategic imperatives of the parent which limit their ability to find appropriate transactions and they are forced to pay slightly more for deals.
3. The captives may be naïve and have the difficulties associated with a big company culture. Mullet 1998 has pointed out that captives very often do not remunerate as well as independents, particular insofar as carried interest<sup>74</sup> is concerned. Thus they may not attract as good a quality staff as independents.
4. Captives can afford to be patient. They only raise funding from their parent and this is very often a simpler (but not necessarily easier) relationship to manage.

Note also that the findings of Wright and Robbie 1996 are applicable here. Captives in the UK prefer later stage MBOs and MBIs. Independents have broader preferences.

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<sup>74</sup> 'Carried interest' is the portion of the fund's growth which is shared with the managers of the fund as part of management's remuneration.

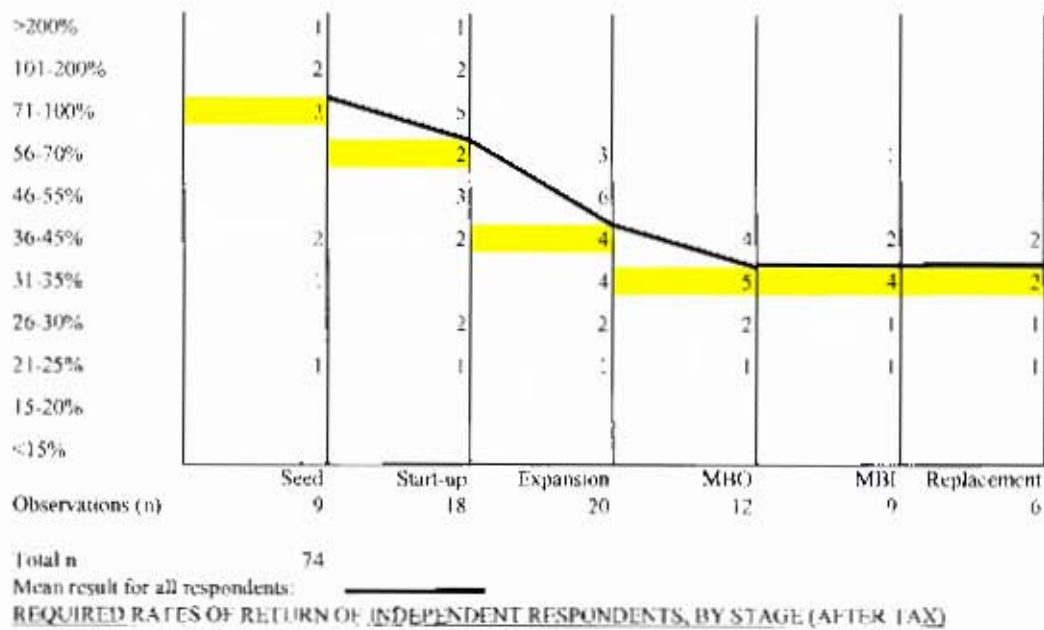


Figure 4.8

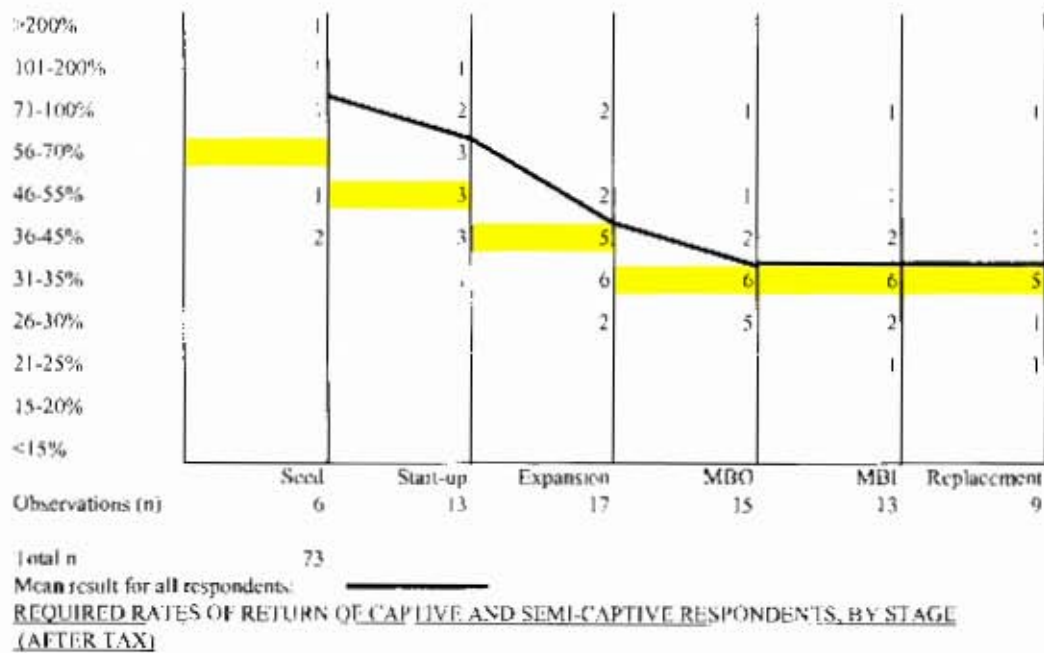


Figure 4.9

## Empowerment vs non-empowerment respondents

This distinction was between those respondents which had an empowerment objective (eg for a previously disadvantaged group) and those which did not. Figure 4.10 clearly, and not unexpectedly shows that the empowerment respondents required a lower rate of return than the non-empowerment respondents (Figure 4.11) for the start-up stage, expansion stage and MBOs and replacement transactions with the inconclusive exception of seed stage investments (note that the sample is too small to draw any conclusions regarding the apparent required rates of return at the seed stage).

There is therefore support for the hypothesis:

B6 *Empowerment respondents will not require as high returns as non-empowerment respondents.*

These results are intuitively correct. Empowerment funds would appear to be fulfilling their mandates in the narrow sense (as defined by KNC 2001b) based purely on their required rates of return. The low number of observations in the seed stage suggests that empowerment funds may not be fulfilling an empowerment need in the broad sense (as defined by KNC 2001b).

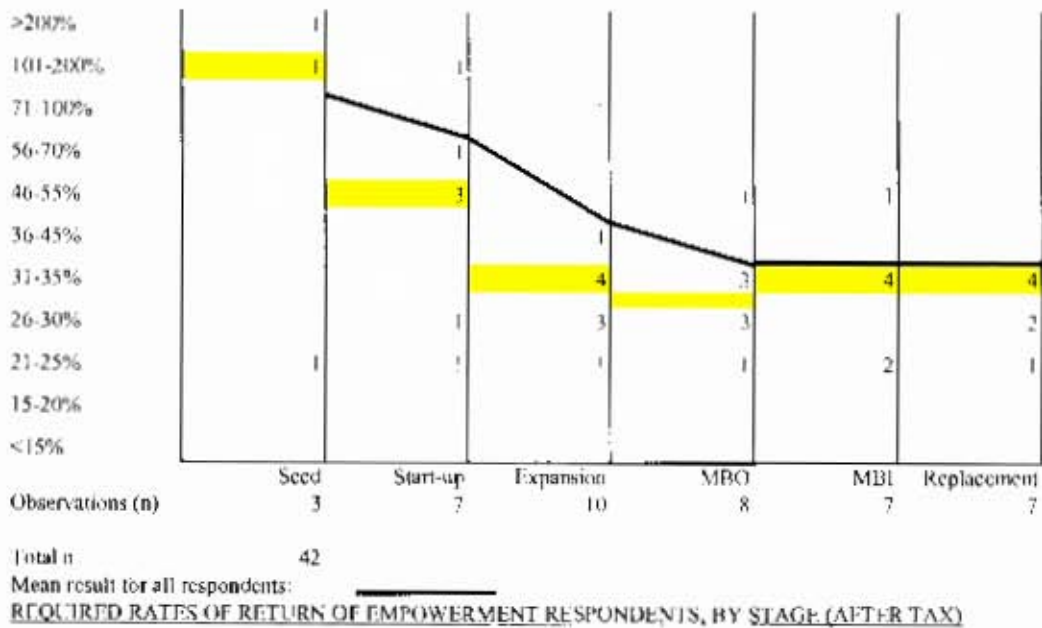
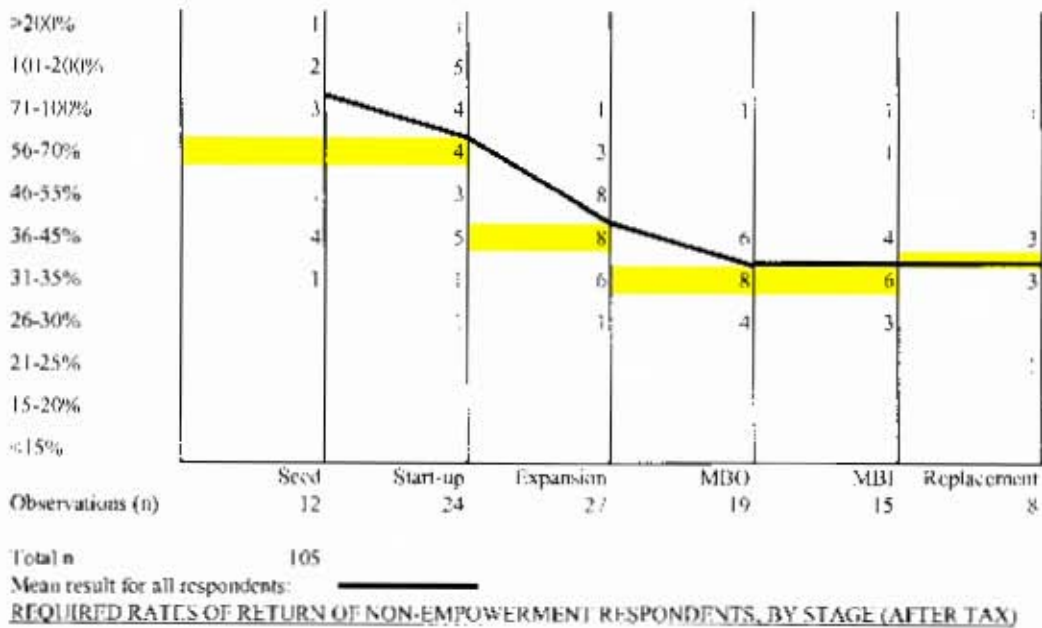


Figure 4.10



a

Figure 4.11

## ASSESSMENT OF THE REQUIRED RATES OF RETURN

The South African respondents require that their investments meet a standard IRR according to the risk band of the investment scoring 3.90 out of a possible score of 5.00, indicating a less sophisticated approach. Thereafter South African respondents require that the return be based on the specific risk characteristics of the investment (3.74). Less important was that the investment should meet a standard IRR regardless of the risk profile (3.27).

In Hungary (4.0) and India (4.3), the preferred way of determining the required rate of return is to base it on a standard, regardless of risk. This is a very mechanistic approach. In Poland (3.8) and South Africa (3.9), the preferred method is to determine the required rate based on the risk band in which the investment falls. In Slovakia (4.3) and The UK (3.6), preference is given to basing the return on the specific risk characteristics of the investment. Obviously the other ways of establishing the required rates are also used in each of these countries. Results were not available for France, the Netherlands and Belgium. This would suggest that South African practice is more sophisticated than the CEE countries, but less so than the UK. These results are compared in Table 4.14.

**Comparison of Instant Study with the Precedent Studies**

Manigart et al 1997, Karsai et al 1997, Karsai et al 1998, Wright & Robbie 1996, Wright et al 2000

**ASSESSMENT OF REQUIRED RATE OF RETURN**

I='irrelevant' to S='essential'

We require the investments to meet a standard required rate of return on equity (IRR) regardless of risk profile

We require the investments to meet a standard required rate of return on equity (IRR), according to the risk band of the investment

We require the investments to meet a standard required rate of return on equity (IRR), according to the characteristics of each investment

We require a rate of return which yields a total cash return commensurate with amount invested

|                                                                                                                                            | South Africa | Britain | France                 | Netherlands | Belgium | Hungary | Poland | Slovakia | India |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|------------------------|-------------|---------|---------|--------|----------|-------|
| We require the investments to meet a standard required rate of return on equity (IRR) regardless of risk profile                           | 3.3          | 2.3     | NOT REFLECTED IN PAPER |             |         | 4.0     | 3.6    | 3.3      | 4.3   |
| We require the investments to meet a standard required rate of return on equity (IRR), according to the risk band of the investment        | 3.9          | 3.3     |                        |             |         | 3.4     | 3.8    | 3.7      | 4.0   |
| We require the investments to meet a standard required rate of return on equity (IRR), according to the characteristics of each investment | 3.7          | 3.6     |                        |             |         | 3.1     | 3.4    | 4.3      | 3.7   |
| We require a rate of return which yields a total cash return commensurate with amount invested                                             | 3.7          | 3.4     |                        |             |         | 3.3     | 3.2    | 2.0      | 3.5   |

Table 4.14

## CHANGES TO THE REQUIRED RATES OF RETURN SINCE THE MID TO LATE 1990s

The buoyant market conditions of the mid to late 1990s have been followed by a more sober market reality. While one might have expected required rates of return to have increased, the effect of the market downturn has been surprisingly unimportant to the required rates of return. 72 percent of respondents had not changed their required rates. 15 percent had increased their required rate and 13 percent had decreased their required rate. The mean changes to the rates appear to be skewed by an inconsistent outlier – one respondent claimed to have decreased its required rate of return by 30%. The results were calculated without the outlier and revealed that those which had decreased their required rate had done so by a mean of 5.63 percent (median: 5 percent), those which had increased their required rate had done so by a mean of 5.25 percent (median: 5 percent) and, when combined, the median (+2.25 percent) and mean overall change (+1.63 percent) suggest that the required rate of return has increased by about 2 percent over the last few years.<sup>75</sup> The results, both with and without the outlier, are set out more fully in Annexure 7.5.

The hypothesis is supported, albeit not convincingly, by the results:

*B7 The required rates of return will have increased since the mid to late 1990s.*

## EFFECT OF THE DEBT-EQUITY RATIO ON THE REQUIRED RATES OF RETURN

The debt-equity ratio affected the required rates of return at the different stages in the investment cycle as set out in Table 4.15 and Figure 4.12.

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<sup>75</sup> Notwithstanding that it appears as if the VC community in South Africa regard themselves as unaffected by declines in the economy, there is anecdotal evidence that the number of transactions available to VCs had declined noticeably by March 2001 (various telephone conversations with South African VCs during March 2001).

FREQUENCY DISTRIBUTION OF COMPANIES BY DEBT-EQUITY RATIO EFFECT FOR DIFFERENT STAGES OF THE INVESTMENT STAGE

| Investment stage               | Percentage of respondents which adjusted required rate of return to take the debt-equity ratio into account |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|
| Seed                           | 34.3                                                                                                        |
| Start-up/early stage           | 35.9                                                                                                        |
| Expansion/development stage    | 55.6                                                                                                        |
| Buyout (MBO/MBI)               | 75.0                                                                                                        |
| Secondary purchase/replacement | 65.5                                                                                                        |

Table 4.15

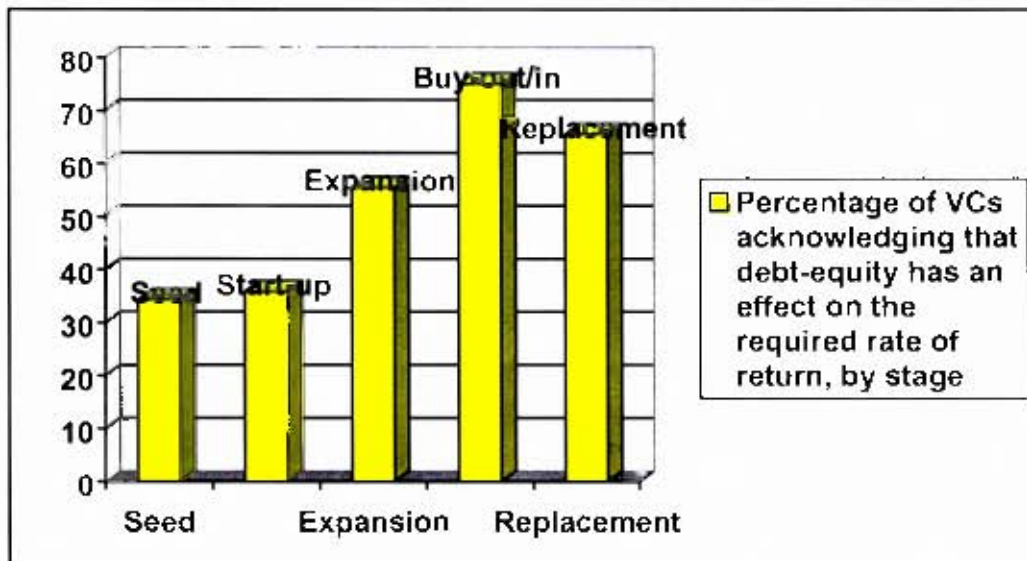


Figure 4.12

The questionnaire provided space for comments and there was a consistent message in respect of the gearing ratio: 'higher debt means higher risk so we seek a higher return', to quote one of the comments. An additional comment which appeared in several responses was that seed and start-up/early stage investments were not appropriate for debt financing.

As opposed to the targeted rates of return, the funding structure must preferably meet a gearing ratio appropriate to the individual risk characteristics of the investment (3.80) and thereafter only according to the risk band of the investment (3.25). Least importance was accorded to the notion of the funding structure meeting a standard gearing ratio regardless of the risk profile (2.48). This ranking suggests that South African VCs are sophisticated. There may be a reason for this: the results showed that

South African VCs regard changes in the prime rate as a more important indicator of risk than their European counterparts in the precedent studies. South Africa has had volatile interest rates and debt is regarded cautiously.

#### **4.5 RISK INDICATORS INFLUENCING THE REQUIRED RATE OF RETURN**

Respondents were directed to interpret risk broadly to include operating, financial and market risk. These risk factors, including their standard deviations, modes, medians, minimum and maximum scores are set out more fully in Annexure 7.5.

The distinction between risk indicators and factors which influence the required rate of return was made in the precedent studies. This distinction was ignored in the instant study because an indicator of risk would potentially affect the required rate of return. The risk indicators were divided into general risk factors and specific risk factors, both of which might be regarded as important, thereby affecting the required rate of return. This would be particularly true where a VC required an IRR commensurate with the specific risk characteristics of the individual investment.

##### **GENERAL RISK INDICATORS**

Table 4.16 reflects that the most important risk factor was unequivocally the market conditions relating to the particular proposal (4.61) with a relatively low standard deviation of 0.6. The state of the industrial or product sector of the investment was next most important (3.95). Least important were, penultimately, changes in returns for long-term gilts (2.44) and, finally, the inflow of funds into the VC market (2.40).

It is not unexpected that changes in long-term gilts are regarded as relatively unimportant. This is because when a VC is seeking a required rate of return in excess of 30 percent, a move of one percent in long-term gilts is relatively unimportant to the

required rate of return. This is generally compounded by the considerable uncertainty surrounding future cash flows. However, what is interesting is the relative unimportance accorded inflows into the VC market. Gompers & Lerner 2000 has shown that this can have a significant impact on valuations of investees.

#### RANKINGS OF RISK FACTORS

| <b>GENERAL FACTORS</b>                                        |                              |               |                     |
|---------------------------------------------------------------|------------------------------|---------------|---------------------|
| <b>Description</b>                                            | <b>South Africa<br/>2000</b> |               | <b>UK*<br/>1994</b> |
|                                                               | <b>Valid N</b>               | <b>Mean**</b> | <b>Mean</b>         |
| Market conditions relating to a particular proposal           | 51                           | 4.61          | 3.34                |
| The state of the industrial/product sector of the investment  | 50                           | 3.95          | 3.11                |
| General economic conditions                                   | 51                           | 3.45          | 3.16                |
| Changes in prices for quoted equities                         | 49                           | 3.36          | 2.48                |
| Changes in the prime rate                                     | 50                           | 2.94          | 2.52                |
| Changes in returns for long-term gilts                        | 50                           | 2.44          | 2.14                |
| Quantity of inflow of funds into the VC/private equity market | 50                           | 2.40          | Not asked           |

Table 4.16

\* Selected factors, Wright & Robbie 1996:161

\*\* Where 5=always important and 1=never important

#### SPECIFIC RISK INDICATORS

Insofar as specific risk factors are concerned these results corroborated the findings (Table 4.17) of previous studies. South African VCs accord management skills the greatest importance as a risk indicator. A very interesting result was that South African VCs ranked the second most important specific risk factor as being the risk that the behaviour of the entrepreneur might be unpredictable (4.67)<sup>76</sup>. The latter risk factor enjoyed a very low standard deviation (0.48) indicating great agreement amongst respondents in this regard. In both Slovakia and SA (where it was the third most important specific risk factor) the financial contribution by management is seen as an important indicator of risk, presumably because as a form of 'signalling'. This was followed by the degree of competitiveness of the market. Other than Hungary, the expected time to exit is rated more highly amongst SA VCs than VCs from the

<sup>76</sup> This factor was not included in the precedent studies.

precedent studies. The quality and robustness of corporate governance is also highly rated. It is notable that so many of the important specific risk factors relate to management. The geographic region of the investment may also affect the required rates of SA VCs (3.4) scoring similarly to Hungary, Poland and France. This is a further suggestion of insularity.

#### RANKINGS OF RISK FACTORS SCORING $\geq 4.00$

| <b>SPECIFIC FACTORS</b> |                                                                             |                |              |
|-------------------------|-----------------------------------------------------------------------------|----------------|--------------|
|                         | <b>Description</b>                                                          | <b>Valid N</b> | <b>Mean*</b> |
| 1                       | Quality of managerial skills                                                | 51             | 4.76         |
| 2                       | Predictability or unpredictability of behaviour of the entrepreneurial team | 51             | 4.67         |
| 3                       | Level of financial contribution by management                               | 51             | 4.35         |
| 4                       | Competitiveness of the market                                               | 51             | 4.24         |
| 5                       | Expected length of time to exit from the investment                         | 50             | 4.12         |
| 6                       | Quality and robustness of corporate governance                              | 51             | 4.12         |
| 7                       | Possibility of a total write-off of the investment if it fails              | 50             | 4.04         |
| 8                       | Degree of planning and strategy for exit from the investment                | 51             | 4.00         |

Table 4.17

\* Where 5=always important and 1=never important

Respondents were asked whether they regarded ownership of a majority of the equity or control as an indicator of increased risk, decreased risk, or as being irrelevant. Unexpectedly, the response was split relatively evenly. It is interesting to note that ownership of a majority of the equity or control of an investment should meet such a mixed response between those which would regard it as an increase in risk (34 percent), those which would regard it as a decrease in risk (26 percent) and those which would regard it as irrelevant to risk (40 percent). This result may reflect the view that owning control or the majority of an investment results in the VC becoming the financier of last resort and bearing responsibility for the success of the investment. Alternatively, it may be regarded as more desirable to have control of an investment when things are not progressing well because it gives the VC the power to make necessary changes (a robust form of corporate governance). Finally, the result may also reflect that some VCs feel that owning the majority of an investment gives them an unacceptable exposure to an investment. Certainly, the question was sufficiently

open-ended that it may have confused two types of risk: the risk of control and the risk arising out of an increased exposure to an investment.

Insofar as the effect of an earlier round of funding on the perception of risk was concerned, 45 percent regarded it as increasing risk, although 27 percent regarded it as irrelevant and 29 percent regarded it as actually decreasing risk. The fact that such a large number of respondents regarded an earlier round of funding as decreasing risk (29 percent) is counter-intuitive because the earlier rounds of funding are usually (but not always) associated with the earlier stages of the business cycle. This is further evidence of a lack of sophistication in the South African VC industry.

In line with expectations, the majority of respondents (90 percent) were not prepared to pay a premium for being able to add good value and 52 percent expected a discount for this.

#### **4.6 VALUATION METHODS**

The valuation methods were examined as at each investment stage from seed through to replacement stage and are summarised in Table 4.18. The valuation methods were rated on a scale of 5 being “almost always” and 1 being “almost never”. The valuation methods, including their standard deviations, modes, medians, minimum and maximum scores are set out more fully in Annexure 7.5.

## RANKING OF VALUATION METHODS (ALL STAGES)

| <b>Rank</b> | <b>Valuation Method</b>                                                                                                          | <b>Mean*</b> |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1           | Discounted future cash flows                                                                                                     | 4.37         |
| 2           | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 3.89         |
| 3           | Recent transaction prices for acquisitions in the sector                                                                         | 3.79         |
| 4           | Industry comparables or special 'rule of thumb'                                                                                  | 3.62         |
| 5           | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 3.30         |
| 6           | Recent PE ratio of the parent company's shares                                                                                   | 2.99         |
| 7           | Cash amount invested to date plus possible premium                                                                               | 2.91         |
| 8           | Responses to attempts to solicit competing offers                                                                                | 2.87         |
| 9           | Liquidation value of asset                                                                                                       | 2.71         |
| 10          | Historic cost book value                                                                                                         | 2.58         |
| 11          | Replacement value                                                                                                                | 2.53         |
| 12          | Option pricing or similar valuation methods                                                                                      | 2.08         |
| 13          | Dividend yield basis                                                                                                             | 2.03         |

Table 4.18

\* Where 5=almost always and 1=almost never

Universally, the single most important valuation method was the discounted cash flow method and, while predominating at all stages, it scored less in the earlier stages. Industry comparables or special "rules of thumb", recent transaction prices in the sector and the "venture capital" method were more important in the seed and start-up stage, diminishing in importance as the stage became later. From the expansion or development stage, the second most important method was the capitalised sustainable earnings (historic or future). The least important method was the dividend yield method in the seed and start-up stages, becoming supplanted by the option pricing method as least important in the stages from expansion onwards. These results are graphed in Figure 4.13.

Two interesting results are worth noting. One is the high ranking of the use of a recent P/E of the parent company's shares (2.99). The other is the fact that any kind of option pricing (2.08) is used at all to value investees. The precedent studies did not ask whether their respondents used this. It would be interesting to investigate this

more fully as there is insufficient information available to use, for example, a Black-Scholes model. A likely explanation for this is that respondents are not actually using a Black-Scholes model, but are applying an understanding to the value of the real options and factoring this into their valuation by reducing the required rate of return to reflect an appropriately managed level of risk.

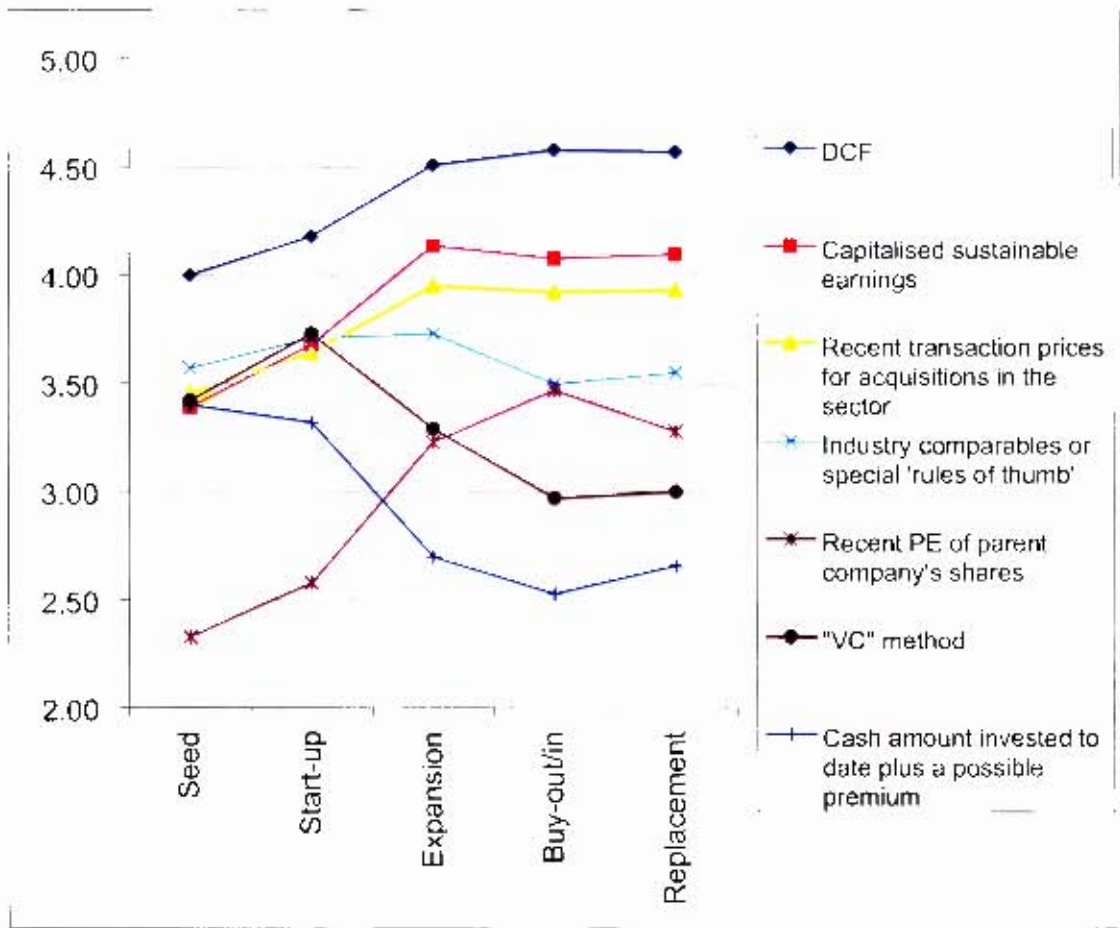


Figure 4.13

\* Where 5=almost always and 1=almost never

The standard deviations for the use of DCF and capitalised sustainable earnings (using a price earnings ratio) are set out in Table 4.18 and are of interest in that the congruence of opinion becomes greater the later the stage in the business cycle. In keeping with the precedent studies of the CEE, the importance of DCF is probably an indication of the VC industry's lack of comfort with the annual financial statements, whether audited or not. In less sophisticated environments cash flow cannot be

more fully as there is insufficient information available to use, for example, a Black-Scholes model. A likely explanation for this is that respondents are not actually using a Black-Scholes model, but are applying an understanding to the value of the real options and factoring this into their valuation by reducing the required rate of return to reflect an appropriately managed level of risk.

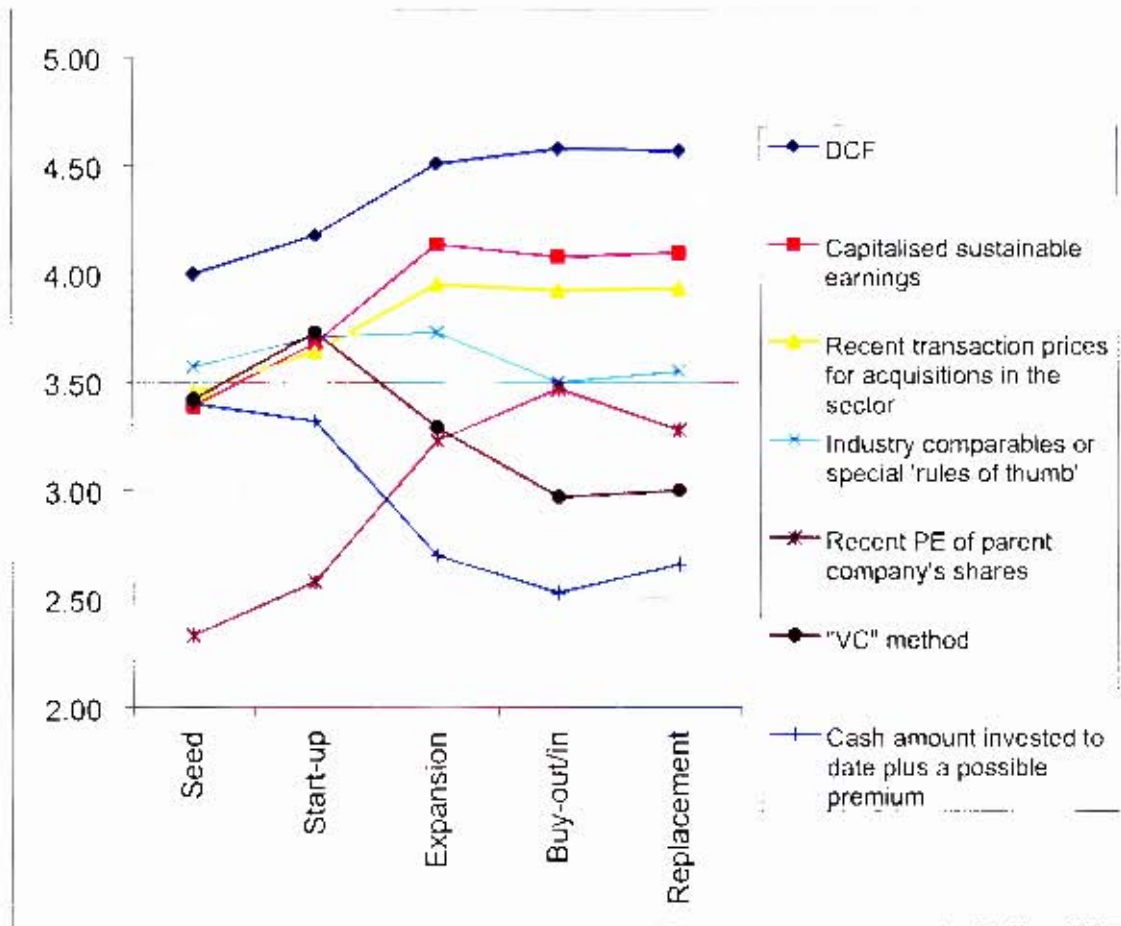


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manipulated and is not open to interpretation. This conclusion is supported broadly by the results in the CEE countries but not by those from Belgium and the Netherlands.

VCs in SA (4.4), Poland (4.4), Hungary (4.7), the Netherlands and Belgium (together: 3.8) all use DCF as their primary valuation method. The UK (4.2) and France (4.2) primarily use earnings multiples – in SA (3.9) this is the second most popular method. The third most important method in SA is the use of recent comparable transaction prices (3.8). The dividend yield method was scored lowest by SA (2.0) and France (2.0). Interestingly, in Slovakia it is the preferred valuation method (4.3).

STANDARD DEVIATIONS FOR VALUATION METHODS, BY STAGE

| Valuation method | Seed | Start-up | Expansion | MBO/MBI | Replacement |
|------------------|------|----------|-----------|---------|-------------|
| DCF              | 1.24 | 0.96     | 0.69      | 0.69    | 0.73        |
| P/E              | 1.20 | 1.02     | 1.00      | 1.05    | 0.98        |

Table 4.19

Since South African VCs use several different methods, most VCs base their final valuation on one particular method (4.06), the same approach as VCs in the UK, France, Belgium and the Netherlands. Alternatively, they try and resolve the differences in the results produced by several preferred valuation methods (3.80)<sup>77</sup>. This suggests some sophistication in the South African market. “Gut feeling” or intuition rated 3.33, although its standard deviation of 1.21 suggests that there were differences of opinion amongst respondents in this regard<sup>78</sup>. It is interesting that the lowest scores were for using the lowest valuation (2.43) and finally using the highest valuation (1.59). It is a further indication that the market is reaching maturity if VCs recognise that they are unable simply to use the lowest valuation to value an investee. This is the result of a healthy competitive environment and is a suggestion of market maturity.

<sup>77</sup> This alternative was not offered to respondents in the precedent studies.

<sup>78</sup> The following comment was made by one of the respondents: “The “gut feel” method of valuation is probably the one relied on the most - even if not admitted to - and will change as market conditions change and as to required rates of return.”

The role of intuition in the VC process is not to be underestimated. The evaluation criteria and risk factors are heavily influenced by the importance of good management. The evaluation of the entrepreneurial team is very subjective, so “gut feeling” is expected to be important. A number of respondents had the temerity to concede the importance of this in their responses and echoed the notion that, while there exists an objectively true probability about a future event, human ignorance is unable to determine what that probability is: “There is little likelihood of our discovering a method of recognising particular probabilities, without any assistance whatever from intuition or direct judgment...A proposition is not probable because we think it so” (Keynes 1921:3).

The following hypotheses in respect of valuation were answered in the affirmative:

- C1 *The most commonly used technique will be the DCF method in all of the investment stages.*
- C2 *DCF will become more important in the later stages of investment such as buy-outs and buy-ins.*
- C3 *OPT and dividend yield will be two of the least used techniques.*

## INFLUENCE OF THE BVCA/SAVCA VALUATION GUIDELINES ON VALUATION TECHNIQUES

KPMG 2000 identified 18 VCs which had adopted the BVCA Valuation Guidelines during 1999 (the subsequently adopted SAVCA Valuation Guidelines are based almost verbatim on those of the BVCA). This study finds that during 2000, a total of 28 respondents, representing 57 percent of respondents, had adopted the BVCA/SAVCA Valuation Guidelines. The adoption of the SAVCA or BVCA Valuation Guidelines by SA VCs appears to be an impressive improvement on the 1999 findings of SAVCA/KPMG survey<sup>79</sup>. However, the SAVCA/KPMG survey for 2000 found only 13 VC firms which had adopted either the BVCA or the SAVCA Valuation Guidelines.

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<sup>79</sup> Note that the instant survey reports on VC funds as opposed to the SAVCA/KPMG survey which reports on VC firms. Because a VC firm may manage more than one fund, the absolute figures are not directly comparable.

This appears to be an anomaly but the most likely explanation lies in the drafting of the questionnaire. The instant survey asks whether the SAVCA Valuation Guidelines have been adopted (ie in principle), while the SAVCA/KPMG surveys ask whether the reported IRRs were calculated in accordance with the guidelines. One might be forgiven for cynically concluding that, notwithstanding the adoption of the Valuation Guidelines, VC funds are selective in their actual application depending on the result the guidelines will produce. While this may be a sign of an immature and unsophisticated market, it is certainly also an indication of the competitiveness that has arisen in the industry in South Africa.

Interestingly, 21 percent of those which had adopted the Valuation Guidelines were not members of SAVCA. Not unexpectedly, 94 percent confirmed that the Valuation Guidelines had not had an effect on their valuation techniques on entry into their investments.

The hypothesis is therefore supported:

C4 *The SAVCA/BVCA valuation guidelines will not have had an effect on the valuation techniques used by VCs when valuing an opportunity for investment purposes.*

#### **4.7 PORTFOLIO STRATEGY**

79 percent of all respondents apply some form of portfolio strategy. 60 percent of all respondents apply a portfolio strategy to ensure that they make a number of investments, none of which exceed a certain minimum percentage (say, 15 percent). 42 percent of all respondents actively favour investments which reduce the overall risk of their portfolio while maintaining the targeted return (ie an optimal portfolio comprising investments with high returns but with risk profiles which are negatively correlated as far as possible). This is a sophisticated approach by South African VCs. 29 percent of all respondents apply a portfolio strategy of consolidation by favouring a certain class of investment or industry such that the risk profiles are positively

correlated in an effort to establish greater certainty in respect of the distribution of likely returns. This suggests that the market is reaching maturity if VCs are able to focus on niche areas in the market. 53 percent of all respondents regard their portfolios as well-diversified, 16 percent as consolidated and 31 percent expressed no particular view in this regard.

#### **4.8 CLARITY OF THE QUESTIONNAIRE**

The questionnaire was lengthy and reasonably complex in places. Respondents were asked to rate the clarity of the questionnaire to ensure that the responses were based on a sound footing. 84 percent found it clear or very clear (4 or 5 on the five point Likert scale) with only 3 respondents finding it unclear. The research challenge was to try and cover as broad a spectrum of stages and issues using as simple a questionnaire as possible. While not without its faults, it appears that the questionnaire was effective.

#### **4.9 CONCLUSION**

This chapter has dealt with the results of the instant survey. The survey received extensive support from the VC industry. The evaluation criteria were identified and show results largely in keeping with international studies in that characteristics of the entrepreneurial team are most highly rated. The required rates of return are analysed by stage and indicate that different groupings of VCs (independents, captives, immature funds, empowerment funds etc) have different required rates of return and reasons are advanced for this. Risk indicators are analysed to determine their effect on the required rates of return. Thereafter, valuation techniques are considered by investment stage and the DCF method enjoys predominance. Finally, it is shown that most South African VCs apply some kind of portfolio strategy. Overall the South

African market appears to be mature and VCs appear sophisticated. However, some of the results point to an industry which has pockets of unsophistication and a market which is occasionally immature.

The conclusions are drawn more fully and the implications for South African VCs and entrepreneurs are set out in Chapter 5.

## 5 CONCLUSIONS

“If human nature felt no temptation to take a chance...there might not be much investment merely as a result of cold calculation.” (John Maynard Keynes)<sup>80</sup>

This chapter first presents the conclusions. Second, the implications for South African VCs are analysed. Third, the implications for South African entrepreneurs conclusions are presented. Finally, the fourth section suggests areas of further research.

### 5.1 CONCLUSIONS

The efficiency of the private markets is important in ensuring a healthy economy. This study set out to shed light on the decision-making process applied by South African venture capitalists when they allocate capital. In particular the study focused on the considerations applied to the general evaluation of investment opportunities, the valuation process and the broad application of portfolio theory. The valuation process was further subdivided into the evaluation of risk, the required rates of return by investment stage and the valuation techniques employed by investment stage. Thereafter, the South African results were compared with international practices.

The research, which was based on work instigated by the University of Nottingham's Centre for Management Buy-Out Research, was successful in reaching a large proportion of the South African VC community and in covering a broad number of issues. The results are largely in keeping with the theory of finance insofar as it

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<sup>80</sup> Keynes 1936:129

relates to venture capital. However, the results should be interpreted with caution due to the limitations of the study which include recall bias and *ex post* rationalisation.

The study commences with an extensive review of the literature in which important conceptual and definitional issues are addressed and the precedent studies are considered. Thereafter the methodology is discussed. The questionnaire used in the precedent studies was modified and extended to meet the objectives of this study and also to obtain comparable results. The questionnaire was distributed amongst both members and non-members of SAVCA and achieved a 77% response rate. Quantitative statistical analyses were conducted. The rates of return from comparative studies were re-calculated to take account of the differences in currencies. The risk premia were also calculated for the purposes of comparison.

The general characteristics of the South African VC industry suggest that it is reaching maturity and is relatively sophisticated by international standards. Nonetheless, there is still evidence of a lack of sophistication and maturity. A major cause of this is the relative lack of experience of the South African VC industry. There are also suggestions that the industry is insular. Finally, in reaching maturity the growth of the VC industry appears to have slowed with the recent confluent weakening of the technology and small cap sectors of the market.

In keeping with most similar studies around the world, South African VCs seek out quality entrepreneurial teams. They do this using an array of evaluation criteria which endeavour to flush out the risks inherent in the investments they are evaluating. In South Africa VCs overwhelmingly seek strong management. Far less important are market issues, followed by product or service issues. This may reflect the perceived dearth of management talent in South Africa. Insofar as management is concerned, there is an almost absolute requirement that management demonstrates integrity. In addition, management must possess a thorough familiarity with the market, a capability for sustained intense effort, good judgement and have a significant stake in the business.

The overall mean nominal required rate of return of South African VCs is 35% (median: 30%). However, the blind assessment of the overall required rates of return

of a group of investors can be misleading because it fails to take into account the underlying risk profile of those investors. For this reason, this study analyses the required rates of return of different groupings of VCs by investment stage. It yielded results consistent with financial theory as it applies to venture capital: the earlier the stage of investment, the higher the perceived risk profile of that investment. The study finds that more mature VC funds have lower required rates of return than less mature funds. Funds with a development or empowerment objective have lower required rates of return than those without. Independent funds require higher rates of return than captive and semi-captive funds. The required rates of return have only increased by about 2% since the more buoyant mid to late 1990s. The debt-equity ratio has an increasing effect on the required rates of return as the investment moves through the earlier stages of investment to the later stages. While the required rate of an investment is generally determined by the risk band in which it falls, the effect of the debt equity ratio is dependent upon an assessment of the individual risk characteristics of the investment.

The general and specific factors which affect risk and required return were ranked by South African VCs and the results are in keeping with international results. The general factors identify the lack of importance of the state of the general economy and long-term gilts to the VC's required rate of return, but the importance of the state of the actual sector in which the investee participates. Insofar as specific risks are concerned, management is of particular importance as an indicator of risk, both in respect of the quality of management and the predictability of management's behaviour.

An analysis was done of the valuation methods which are used at the different stages of the investment cycle. South African VCs prefer to use the discounted cash flow method of valuation at all stages of the investment, although different techniques are also used in the earlier stages of the investment cycle. A final valuation is based on a preferred method while using the other methods as a check. Gut feeling is an important component of this process. Also, this research confirms that the newly adopted SAVCA (BVCA) Valuation Guidelines have not affected the valuation process when an investment is made.

Most South African VCs apply reasonably sophisticated portfolio theory to their investment portfolios and the majority regard their portfolios as well-diversified.

The venture capital investment process is simple in theory. It is very complex in practice and it is submitted that few studies to date have truly captured the richness and lush complexity of a process which is extremely difficult to study.

The implications for both South African entrepreneurs and South African VCs are presented next in an effort to provide better understanding to entrepreneurs seeking funding and to VCs who are interested in how their practices compare internationally.

## **5.2 IMPLICATIONS FOR SOUTH AFRICAN ENTREPRENEURS**

There are some important implications for South African entrepreneurs:

- 1 The South African VC industry is largely (but not entirely) mature. Many VCs are not very experienced in VC itself although they may bring extensive experience from other disciplines. They generally expect to add value to their investments beyond the mere provision of capital and expect to be rewarded for this by investing on favourable terms. In addition, research shows that VCs do indeed add value to their investments. Note that most VCs do not wish to have control of their investees but they often protect themselves by providing for veto rights on important issues in a shareholders agreement.

This suggests that entrepreneurs seeking VC funding should court those VCs with whom they think that they can work fruitfully because the VC investor will expect to get involved in the investment, certainly at a strategic level. Entrepreneurs should also seek out those VCs which will add the most value and weigh up the cost of this carefully, even if it means a lower valuation of their investment than desired by the entrepreneur. If entrepreneurs are unwilling to have rigorous non-executive involvement, then VC funding is probably not appropriate.

2 Entrepreneurs should manage their fundraising efforts in light of the evaluation criteria used by South African VCs. The key issues revolve around the entrepreneurial team and are very difficult to measure objectively. A VC will endeavour to get references on the entrepreneurial team. Accordingly, entrepreneurs must ensure that they are constantly building their reputation as people who have, in order of importance:

- high integrity,
- predictable behaviour,
- excellent domain knowledge,
- energy and stamina,
- good judgement,
- significant personal exposure to and investment in one's own business,
- strategic vision, and
- relevant experience.

Personal 'chemistry' with the VC is important but is less important than the above.

The importance of integrity and domain knowledge suggests that, while entrepreneurs need to market themselves to VCs, they should avoid making unfounded or exaggerated claims during the process of attracting VC funding because if this is uncovered during the due diligence process the VC will be inclined to conclude that, at best, the entrepreneur does not understand his or her business or, at worst, that the entrepreneur is dishonest. Either way, the VC will draw an unfavourable inference.<sup>138</sup>

3 Entrepreneurs should ensure that their businesses are in high growth markets and that the VCs which they approach have an interest in their industry. The business does not need to be profitable or cash flow positive (depending, of course, on the stage in the business cycle – an MBO or MBI clearly cannot sustain itself if it is not generating cash). The business does not need to be 'high tech'. Entrepreneurs need to articulate their business in a thorough and coherent business plan which must include a cash flow statement – DCF is the preferred technique for valuing investments at all stages in the business cycle. Finally, entrepreneurs must ensure

that robust and transparent corporate governance is apparent. This requires strong non-executive board members and compliance with the King Commission recommendations (as far as appropriate given the stage in the business cycle of the investment).

- 4 Entrepreneurs should avoid trying to sell shares as opposed to doing a rights issue which injects funding into their business. Most VCs prefer not to do replacement capital transactions. Insofar as entrepreneurs have seed and start-up businesses, they should ensure that there is no debt in the business. Finally, VCs do not attach much additional value to a product which creates a new market.
- 5 Entrepreneurs can expect that their businesses will be valued by VCs on a DCF basis irrespective of the stage in the business cycle, although other techniques are used in the earlier stages of the investment cycle. Future and historic price earnings ratios are the second most important technique, followed by using comparable transactions as a basis for valuation. A VC will typically use one preferred method and then use other methods as a check. Gut feeling is an important component of the VC valuation process.
- 6 The required rates of return are generally most affected by the state of the market for the specific proposal, followed by the state of the industry in which the business finds itself. Changes in the prime rate or long bond rates are not very important. Specific risks which will lead to an increase in the required rate include, in order:
  - even if the entrepreneurial team is good enough, deficiencies in the entrepreneurial team,
  - the possibility of unpredictable behaviour by the entrepreneurial team,
  - a low level of financial contribution by the entrepreneurial team,
  - increased competitiveness in the market,
  - an expected long period of time until a return is realised on the investment, and
  - poor corporate governance.

- 7 The overall mean required rate of return amongst SA VCs is 35.1 percent (median and mode: 30 percent). Table 5.1 sets out the median required rates of return by stage and also a matrix of what types of VC will generally require a lower return. The matrix should be seen as indicative only.
- 8 VCs do not generally wish to own the majority of the equity or have control. Therefore, a simple test is to establish whether the amount of required VC funding exceeds the current value of the investment (ie pre-money) on a fair valuation. If so, this may not be attractive to the VC and it may be that the entrepreneur should rather be seeking funding from an industry strategic partner rather than a venture capitalist.
- 9 A large number of VCs are members of SAVCA and they accordingly subscribe to the SAVCA Code of Conduct which demands ethical behaviour from members. Many VCs also subscribe to the SAVCA Valuation Guidelines. These SAVCA standards are not legally enforceable, but SAVCA is growing in stature and credibility. Therefore, although no guarantee of ethical behaviour, entrepreneurs should take comfort in dealing with VCs which are members of SAVCA – this can be determined by reference to SAVCA’s website ([www.savca.co.za](http://www.savca.co.za)).

|                                                    | <u>Seed</u>                 | <u>Start-up</u>             | <u>Expansion</u> | <u>MBO</u>                | <u>MBI</u> | <u>Replacement</u> |
|----------------------------------------------------|-----------------------------|-----------------------------|------------------|---------------------------|------------|--------------------|
| <u>Median required rates</u>                       | 71-100%                     | 56-70%                      | 36-45%           | 31-35%                    | 31-35%     | 31-35%             |
| <u>Types of VC requiring lower rates, by stage</u> | Less than 5 yrs in business | Less than 5 yrs in business |                  | 5 or more yrs in business |            |                    |
|                                                    | Development                 | Development                 | Development      | Development               |            |                    |
|                                                    |                             | Unlisted                    |                  |                           |            |                    |
|                                                    | Captive/ semi-captive       | Captive/ semi-captive       |                  |                           |            |                    |
|                                                    | Non-empowerment*            | Empowerment                 | Empowerment      | Empowerment               |            | Empowerment        |

Table 5.1

\* Sample is too small for this to be conclusive

### 5.3 IMPLICATIONS FOR SOUTH AFRICAN VENTURE CAPITALISTS

The South African VC industry has progressed considerably in recent years. This research bears out some implications for South African VCs:

- 1 Insofar as international practice is concerned, there has been little progress in developing a normative model of the venture capital investment process. The role of intuition and experience make this even more difficult to establish. Accordingly, while local VC practices can be compared to international practices, there is no guarantee that that these will result in improved investment selection and performance. Accordingly, any foreign practices need to be treated with caution and carefully considered before being adopted.

- 2 There is evidence from South African VC practices that the market is reaching maturity. This is borne out by the annual KPMG/SAVCA survey.
- 3 While there is evidence of the local industry being comparatively sophisticated, there are numerous examples of unsophisticated practices which have been identified in Chapter 4. These are invariably practices which fly in the face of trite financial theory of venture capital and this can be remedied through continuing education.
- 4 The importance accorded the integrity of the entrepreneur begs the question as to how best this integrity is established. Certainly, it would be a simple screening tool to make immediate discreet and thorough enquiries about the entrepreneur if an investment opportunity appears interesting. If integrity is lacking, the investigation can then be quickly and inoffensively terminated.
- 5 Venture capital has been described as a journeyman's profession. The importance of subjective assessment in venture capital suggests that the value of experience should not be underestimated. "Gut feel" or intuition is very often a result of experience and, where good financial, strategic and economic analysis is unable to answer all the questions, VCs should incorporate subjective judgment into their decision-making process with equanimity.
- 6 While the South African VC industry has some peculiarities not typically found in more developed markets, such as empowerment issues, it would appear to be healthy and robust.

## 5.4 AREAS OF FURTHER RESEARCH

The following areas of further study might yield valuable results:

- 1 Considerable research has been focused on positive models of VC investment – an entrepreneur can no longer be heard to complain that he or she has no idea what a VC will expect of his or her proposal. Henceforth the most valuable research which would benefit venture capitalists would be to find out which VC practices result in the best investment performance. This would necessitate the design of separate normative models of VC investment in respect of each of the following: evaluation criteria (which could be further subdivided into the different broad categories of evaluation criteria), valuation methods, required rates of return, and portfolio strategies. This is not a challenge to be assumed lightly.
- 2 A better understanding of the valuation process in a venture capital setting would be valuable: Do VCs price risk only through a required rate of return, do they apply a certainty equivalent to the projected cash flows and use a standard required rate of return, or do they use a mix of both approaches? If, as is possible, VCs use the last approach, what does this imply for studies of required rates of return and how much more complex might the practical valuation process be in a private setting than in the public markets?
- 3 The nature and effect of the various contractual mechanisms utilised by VCs in South Africa and the way in which they are used to manage risk and increase value (particularly through the inherent use of options in the staging of investments) would prove useful not only to VC practitioners, but also to legal practitioners. The relationship between this “contracting technology” and VC valuations might also be usefully examined.
- 4 While the theory of valuation is clear, this research of the practical application of valuation theory leaves one with a sense of disquiet. Perhaps some complexities of the practical valuation process in a private setting have been

glossed over. Perhaps the approach adopted in this study is too simplistic to capture the richness of venture capital valuations. Concern has been raised in this study regarding the practical use of required rates of return (Chapter 3 Section 8, 'Limitations of this study') and the theoretical shortcomings of IRRs (Chapter 2 Section 9, 'Determination of required rate of return'). Further qualitative research on this matter is in order so that more suitable quantitative methodologies may be devised. A case study approach would be appropriate to address this issue.

- 5 Application of the research methodologies of Zacharakis 1995 and Zacharakis & Meyer 1998 to a South African VC setting would likely result in a more refined understanding of the evaluation practices of VCs.
- 6 A study of the demand side of the VC process could be conducted. This would focus on the decision-making process of the entrepreneur seeking funding from a VC (Wright & Robbie 1998).
- 7 Studies to date that have examined the decision-making process of VCs have been based largely on the views of individuals within a VC institution. These views are not necessarily a true reflection of the VC institution's collective process (Wright & Robbie 1998). An examination of the "investment committee" or board of directors' approval process might provide useful insights into a different dimension of the decision-making process.
- 8 Application of the research methodology of Gompers & Lerner 2000 to a South African VC setting would provide an understanding of the key drivers behind the valuation of VC investments. It is quite probable that this would lead to the same conclusion, ie that unlike the public markets the values of VC investments are driven by demand pressure.
- 9 A detailed study of the required rates of return within the various industry sectors may yield interesting results. This would need to be accompanied by an evaluation of the relative risk of each sector and an exposition of the relationship between risk and reward insofar as sector is concerned.

- 10 Since the issue of entrepreneur integrity is so important to VCs, it may be interesting to examine how, in practice, VCs establish the integrity of an entrepreneur.

Of minor historical interest might be a study of the change of VC evaluation criteria over the passage of time – which criteria change and which remain the same. The difficulty with this would be finding comparable studies conducted over a sufficiently long period of time.

## **5.5 AFTERWORD – THE IMPACT OF CONTINUED MARKET WEAKNESS IN 2001**

A shake-out in the technology market which commenced in March 2000 has snowballed into 2001 with numerous knock-on effects. With a potential US recession already looming in mid 2001, the markets were left reeling in the aftershock of the attack on the World Trade Centre in September 2001.

To put the market drop in context, herewith the declines in a number of selected indices:

- On 8 October 1998 NASDAQ bottomed out at 1 357 due to the Asian emerging market crisis. It peaked on 10 March 2000 at 5 133 and then fell 72% back to 1 418 on 27 September 2001.
- Another TMT-heavy index, the Nikkei, peaked at 20 748 on 4 April 2000 before falling 55% to 9 383 on 21 September 2001.
- In South Africa, the ALSI peaked at 9 336 on 18 January 2000 before falling to 7 171 on 21 September 2001.
- The South African IT index fell from 1 349 on 9 March 2000 to 221 on 27 September 2001.
- The South African Media index fell from 19 418 on 27 March 2000 to 4 806 on 27 September 2001.

- The South African Telecommunications index fell from 862 on 16 March 2000 to 261 on 27 September 2001.

This has had dire consequences for the performance of the VC industry:

- Interest in technology companies and small capitalisation companies has turned full circle with a flight to quality being experienced – government bonds and, where equities have been sought, ‘blue chip’ stocks have been preferred.
- The NASDAQ, the bellwether of technology performance, is no longer an obvious place of exit for VCs. The IPO market has dried up in most countries.
- The weakening of the technology market has exposed the underbelly of most of the rest of the market which has experienced a considerable correction in valuation.
- Emerging market currencies have suffered and their markets have had mixed fortunes. In addition, the opportunity for expansion to developed countries has been exacerbated as the developed countries experience their own economic problems.
- Terms such as ‘B2B’ (business-to-business) and ‘C2C’ (consumer-to-consumer) have been replaced with terms like ‘P2P’ (path-to-profitability) and ‘R2R’ (return-to-rationality). ‘Market share’ and ‘revenue growth’ have been jettisoned in preference for ‘profit’ and ‘cash flow’.
- VC funds world-wide have been caught unawares by the market shift and, while the pain may be delayed in some instances, performance can be expected to be significantly poorer than in recent years.
- A large number of VC funds are fully invested but have fledgling investees requiring further funding to survive. In many cases it is unlikely that funding will be forthcoming and these companies will fail. The domino effect of this on the technology market is probably not yet over.
- Institutional investors world-wide are approaching VC fund investment cautiously and funding commitments have already started to slow dramatically in the USA.<sup>81</sup>

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<sup>81</sup> Venture Economics and the National Venture Capital Association released statistics on 30 July 2001 which show that second quarter investment by US VCs had dropped by 61% compared to the same time the previous year. The Venture Economics Private Equity Performance Index showed a negative

- While this is probably a cyclical correction, it is likely to be reasonably protracted and will leave many reputations tarnished.
- South Africa never got caught up in the technology bubble to the same extent as in Europe and the USA. In addition, the US VC market is highly specialised in that a VC, focusing on a particular investment stage, would often fund an investee until the next round of funding. At this stage new VCs would be sought for the next round, implying that many early stage investees were not funded to achieve profitability but to achieve a status of ‘next round investability’. Being relatively small, this has not been a characteristic of the South African industry. While the South African technology market has had its own spectacular collapse, the market excess and hence the collapse, has been more muted.
- Similarly, although also more muted, the South African VC market is seeing a fallout as both performance has weakened and the ability to raise funding has been curtailed. Even though many South African VC funds do not participate in the technology industry, they too have suffered.

What impact might the above have on the results and conclusions of this study?

1. Some of the evaluation criteria may have been affected:
  - 1.1. Personality and experience of the entrepreneurial team: It is unlikely that the ranking of these criteria will have changed significantly.
  - 1.2. Characteristics of the product or service: It is unlikely that the ranking of these criteria will have changed significantly.
  - 1.3. Target market: It is possible that the maturity of the target market may now be more important.
  - 1.4. Operational issues: It is unlikely that the ranking of these criteria will have changed significantly.
  - 1.5. Financial considerations: The importance of being able to achieve an IPO may be less. The importance of being cash flow positive or profitable is almost certain to be more important, as is the presence of an independent co-investor (there is certainly anecdotal evidence in the South African market that both are now more important than they were previously).

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return of 18.2% for the year to 30 June 2001 in comparison to negative returns on both the NASDAQ and S&P of 36.2% and 13.2% respectively  
 (www.ventureeconomics.com/vec/news\_ve/2001VEpress/VEpress10\_16\_01.htm).

- 1.6. Preferences for the stage in the business cycle: There is currently a burgeoning of VC funds taking listed companies private, usually through buy-outs. Also, with the public markets as volatile as they currently are, many VCs which are not prevented as such by their mandates, appear to be purchasing stakes in listed companies. This is because the returns could potentially be very good as the market recovers without having to assume the various risks, including the lack of critical mass, in small unlisted companies. Accordingly we could expect to see MBOs and secondary purchase/replacement transactions being more important. It must, however, be stressed that most VCs would still rather see their cash going into the company than into the hands of exiting shareholders.
- 1.7. Overall, it is anticipated that the importance accorded management teams will remain paramount, perhaps even becoming more important. A singular development in South African corporate life has been the exposure of large scale failures (Macmed Health Care Ltd, Leisurennet Ltd and Regal Treasury Bank Holdings Ltd, to name a few) due to poor corporate governance and a flagrant disregard for integrity. Due to this, coupled with technology issues becoming more abstruse, it is submitted that integrity will remain ever more important.
2. The required rates of return can be expected to have increased, although the results of the study suggest that this change may, in the context of the high returns required by VCs, not be significant (perhaps an increase of 5% at most). The extent of the increases will be greater at the earlier stages of the investment cycle and smaller at the later stages. However, what is more likely, is that VCs are applying a healthy dose of realism to projections and giving them a 'haircut' prior to applying their required rate of return. The conundrum that this presents to the accepted wisdom of the study of required rates of return in VC, is addressed earlier in this study. It is likely that the effect by stage has been that required rates for earlier stage investments will have increased more than later stage investments. It is difficult to comment on the effect on the different types of funds.
- 2.1. Foreign funds which have advanced hard currencies to invest may now require higher rates of return to compensate for the collapse in the Rand.

- 2.2. Development funds may retain their relatively lower required rates of return so as to pursue their development and empowerment objectives. It is in times like this that development objectives become particularly important.
- 2.3. Listed VC funds and VC managers are fast disappearing as the value of being listed is questioned and many listed funds are considering going private. If being listed as a VC fund goes out of style in years to come, the distinction between listed and unlisted VC funds and VC managers will be irrelevant because there will no longer be any listed funds.
- 2.4. Captive funds are affected by two opposing forces: The benefit of a strong parent balance sheet may be offset by an increased need of the parent to focus its resources on its core business. It is difficult to offer a general comment on the effect of this, but it is likely that most parent companies are tending to focus on their core businesses and are accordingly withdrawing from VC activities.
3. The fall in interest rates may make debt more attractive in South African VC investees but it is harder to raise debt in the current market. The effect on the study's findings on the impact of the debt-equity ratio is not likely to be significant.
4. The risk indicators were divided into general and specific risk indicators. Amongst the general risk indicators, it is possible that the scarcity of funds flowing into the VC market may now be more highly ranked as a general risk. Other than this, there is unlikely to be much change to these. Of the specific risk factors, some of the lower ranking factors such as length of time to exit and method of exit may now be more important than they were, but it is submitted that the three highest ranking issues, which all relate to management, will continue to rank highest.
5. Insofar as the ranking of valuation methods is concerned, it is likely that variations of the discounted cash flow method will remain most important, particularly given the increased focus on cash flow. However, earnings multiples may increase in importance because more VCs may now eschew investments without earnings.
6. The importance of a robust portfolio strategy is now being borne out. It is one thing to have a portfolio strategy but it is another thing to apply it with discipline in present market conditions. It is possible that many VC funds now are unbalanced because they have become the financiers of last resort in investments

where they were unable to raise further funding. There are many anecdotal examples of this in the South African industry.

In general it is therefore unlikely that many of the findings and conclusions will have changed other than perhaps a slight increase in the required rates of return, an increasing importance on cash flow and profitability, and an increase in the importance of integrity and other management qualities.

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## **7 ANNEXURES**

### **7.1 STANDARD LETTER TO RESPONDENTS**

### **7.2 PRICEWATERHOUSECOOPERS LETTER TO RESPONDENTS**

### **7.3 QUESTIONNAIRE**

### **7.4 GLOSSARY**

### **7.5 SELECTED STATISTICAL RESULTS ON A GROUP BASIS (IE NON-IDENTIFIABLE)**

### **7.6 RISK PREMIA COMPONENT FOR COMPARATIVE INTERNATIONAL REQUIRED RATES OF RETURN**

**ANNEXURE 7.1**

**STANDARD LETTER TO RESPONDENTS**



## Department of Accounting

**RESPONDENT**

Leslie Commerce Building  
 Engineering Mall · Upper Campus  
 OR Private Bag · Rondebosch 7701  
 Tel: 650-2269  
 Telex: 57-21439  
 Tel. Add.: ALUMNI, Cape Town  
 Fax No: (021) 689-7582  
<http://www.dis.uct.ac.za/accounts/welcome.stm>

**Attention: Respondent**

5 November 2000

Dear Respondent

### **MASTERS IN FINANCE, UNIVERSITY OF CAPE TOWN SOUTH AFRICAN VENTURE CAPITAL AND PRIVATE EQUITY SURVEY**

I am currently studying towards a Masters in Finance at the University of Cape Town. My supervisor is Professor Enrico Uliana, Head of the Department of Accounting, UCT ([euliana@commerce.uct.ac.za](mailto:euliana@commerce.uct.ac.za)). I have identified an area of finance not previously studied in South Africa. The results of this survey will be used to submit a thesis in partial fulfilment of the requirements of a Masters in Finance degree.

This study builds on and extends a series of international studies and endeavours to answer the following research problem:

*When considering a venture capital investment, what considerations do South African venture capitalists apply to:*

1. *the general evaluation of venture capital and private equity investment opportunities,*
2. *specifically in respect of the valuation of venture capital and private equity investment opportunities,*
  - *the evaluation of risk,*
  - *the required rate of return at each stage in the business cycle of the investment opportunity (eg seed, start-up, expansion, buy-out etc)*
  - *the valuation methods employed at each stage, and*
3. *the broad application of portfolio theory to their funds, and, where comparative data are available in respect of the above three issues, how do these considerations compare internationally?*

Venture-backed investments have a higher rate of success than those without venture backing. However, some potentially viable projects get rejected by venture capital and private equity professionals. This study should aid practitioners in understanding both their own decision-making process and comparative international practices. It should assist entrepreneurs in better understanding the expectations and demands of venture capital/private equity investors and the way in which their proposals are valued. It is hoped that this study may contribute to the efficiency of a market which is important for the growth of our economy.

For the purposes of this survey, the European convention has been adopted in terms of which "VENTURE CAPITAL" and "PRIVATE EQUITY" are used interchangeably. Both terms are synonymously used to describe equity or quasi-equity investments in (generally) unlisted businesses seeking strong growth (ie this excludes so-called "lifestyle" businesses). In addition, a Glossary is attached to the questionnaire.

The views of as many South African venture capitalists and private equity practitioners are being sought. In particular, I am seeking the views of each separate fund managed by an institution. In answering the questionnaire, the views and policies of your fund should be reflected, and only in the absence thereof, should your personal views be expressed. The survey should take no longer than 30 minutes to complete.

Individual firms, funds or persons will not be identified in the thesis. All responses will be treated confidentially and anonymously. Upon completion (March 2001), the results will be made available to all participants and all SAVCA members.

In considering your participation, please note the following:

1. I am an executive of VenFin Limited, the listed technology investment company that was previously the Rembrandt Group Ltd. VenFin, based in Stellenbosch, invests off its own balance sheet and does not compete for investor funds. While VenFin may compete for investment opportunities, it subscribes to a co-operative market strategy and actively pursues consortium investments with other market participants. VenFin is a founder member of SAVCA and adheres to the principles and ethical values of SAVCA.
2. PricewaterhouseCoopers have agreed to assist in ensuring the confidentiality and anonymity of responses. The completed questionnaire should be sent by email ([tom.blok@za.pwcglobal.com](mailto:tom.blok@za.pwcglobal.com)) or by pre-paid post to Tom Blok, a partner of PricewaterhouseCoopers. PricewaterhouseCoopers will collate the responses. Two separate sets of data will then be delivered to myself:
  - 2.1 one file, in random order as to respondent, which reflects the individual responses, and
  - 2.2 a separate file in alphabetical order which lists the respondents, but which does not identify the respondents with their responses.The individual data will thus remain anonymous. Please see the attached letter from PricewaterhouseCoopers.

Your participation is crucial to the success of this study and is greatly appreciated. Please respond by 15 December 2000 and feel free to contact me if you have any queries. I look forward to your positive response.

Kind regards

**MARK TAYLOR**  
PO BOX 456  
STELLENBOSCH, 7599  
Tel: 021-888-3600  
Cell: 082-551-5511  
Email: [mjgt@remgro.com](mailto:mjgt@remgro.com)

**ANNEXURE 7.2**

**PRICEWATERHOUSECOOPERS LETTER TO RESPONDENTS**

2 September 2000

To the respondent

**PricewaterhouseCoopers Inc**  
Reg. no. 1998/12055/21  
Sanbel  
2 Old Paarl Road  
Bellville 7530  
P O Box 168  
Bellville 7535  
Telephone +27 (21) 940 4100  
Facsimile +27 (21) 948 6817  
Direct phone +27 - 21 - 940 4248  
Direct fax +27 - 21 - 949 9503

## **RESPONSE TO THESIS QUESTIONNAIRE : M TAYLOR**

PricewaterhouseCoopers is supporting Mark Taylor with his thesis by providing an independent service to receive, collate and depersonalise research questionnaires. As recipient of this letter, you have been identified as a contributor to his research.

We hereby confirm that the following procedures will be followed for all responses to this research.

1. All responses will be sent to PricewaterhouseCoopers, either by e-mail or regular post.
2. Once all responses are received, or the deadline for submissions is reached, the information contained on the responses will be collated on a spreadsheet prepared by the researcher. Any references to the organisation or individual submitting the response will be removed from the return.
3. We will provide Mark with two electronic files :
  - One file, with no reference to the respondent, which collated the individual responses; and
  - A second file, listing the respondents in alphabetical order, but which does not link the respondents to the individual responses.

These procedures will ensure the confidentiality of the information provided, and the anonymity of the individual respondents.

Should you have any queries on these procedures, or require any additional information, please contact Tom Blok at (021) 940 4248.

Yours faithfully

**TOM BLOK**

Partner : Global Risk Management Solutions

**ANNEXURE 7.3**

**QUESTIONNAIRE**

**South African Venture Capital and Private  
Equity**

**Investment Appraisal Questionnaire**

Researcher: Mark Taylor  
Tel (W): 021 - 888 3600  
Cell: 082 - 551 5511  
E-mail: [mjgt@remgro.com](mailto:mjgt@remgro.com)  
Address: PO Box 456  
Cape Town 8000

***Private & Confidential***

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Survey for a thesis in partial fulfilment of the requirements of a Masters in Finance degree at

University of Cape Town  
Department of Accounting

Supervisor: Professor Enrico Uliana  
Tel (W): 021 - 650 2217  
E-mail: [eliiana@commerce.uct.ac.za](mailto:eliiana@commerce.uct.ac.za)  
Address: UCT Department of Accounting  
Private Bag  
Rondebosch 7701

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Independent Data Recipient: PricewaterhouseCoopers  
Tel (W): 021 - 940 4100  
E-mail: [tom.blok@za.pwcglobal.com](mailto:tom.blok@za.pwcglobal.com)  
PO Box 168  
Belville 7535  
Att: Tom Blok (direct line: 940 4248)

Kindly note that this questionnaire should be submitted to PricewaterhouseCoopers who will detach the section of the questionnaire which identifies you. The Researcher will then be furnished with two files:

1. One file, in random order as to respondent, which reflects the individual responses, and
2. A separate file in alphabetical order which lists the respondents, but which does not identify the respondents with their responses.

This will ensure confidentiality and anonymity.

Should you have any queries, please contact Tom Blok at PricewaterhouseCoopers

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**DEFINITIONS**

For the purposes of this survey, the European convention has been adopted in terms of which "VENTURE CAPITAL" and "PRIVATE EQUITY" are used interchangeably. Both terms are used synonymously to describe equity or quasi-equity investments in (generally) unlisted businesses seeking strong growth (ie this excludes so-called "lifestyle" businesses). A Glossary is attached to ensure consistency (it defines the concepts which are underlined in the questionnaire). In answering the questionnaire, the views and policies of your fund should be reflected, and only in the absence thereof, should your personal views be expressed.

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## INSTITUTIONAL BACKGROUND

1. (a) Which of the following ownership categories best describes your venture capital fund? Please tick the relevant category box.

Captive    Independent    Semi-Captive    Public Sector

Other: Please specify \_\_\_\_\_

- (b) Does your fund have an empowerment objective (e.g. for a previously disadvantaged group)?  
Yes  No

- (c) Does your fund have a development objective?  
Yes  No

- (d) Are you listed on the Johannesburg Stock Exchange?  
Yes  No

2. For the different stages of venture capital financing, please indicate, for the last three years (1/3/97 to 29/2/2000 or a financial year ending as close as possible to this), the proportion of your investments in the following categories by approximate number of investments and value. NOTE: The absolute values are optional. Please provide at least the percentage breakdown.

|                                | Approx. number<br>of ventures<br><i>(optional)</i> | %<br><i>(required)</i> | Approx. value<br>(in millions)<br><i>(optional)</i> | %<br><i>(required)</i> |
|--------------------------------|----------------------------------------------------|------------------------|-----------------------------------------------------|------------------------|
| <u>Seed</u>                    |                                                    |                        |                                                     |                        |
| <u>Start-up/early stage</u>    |                                                    |                        |                                                     |                        |
| <u>Expansion/development</u>   |                                                    |                        |                                                     |                        |
| Management buyout (MBO)        |                                                    |                        |                                                     |                        |
| Management buy-in (MBI)        |                                                    |                        |                                                     |                        |
| Secondary purchase/replacement |                                                    |                        |                                                     |                        |
| <b>Total</b>                   |                                                    | <b>100%</b>            |                                                     | <b>100%</b>            |

3. Please indicate the approximate percentage of your individual investments by number (irrespective of total deal size) which fall in each of the following size categories:

Less than

<R2m

>R2m-R5m

>R5m-R10m

>R10m-R25m

>R25m-R50m

>R50m-R100m

>R100m

%

%

%

%

%

%

%

4. In terms of your venture capital fund:

(a) How many years has your fund been involved in venture capital?

(b) What is the number of new investments made in the last three years (excluding follow-on investments, rights issues in existing investments, or the like)?

(c) How many current investments does your fund have?

(d) How many investment executives/managers are currently employed?

(e) Is the majority ownership of your firm foreign or local?

(f) Position of person completing this questionnaire (MD, director etc)?

(g) Number of years experience in venture capital or private equity (of person completing questionnaire)?

|  |
|--|
|  |
|  |
|  |
|  |
|  |

## INVESTMENT APPRAISAL

5. In general, when evaluating investment proposals, how important are the following factors? Where appropriate (for example, where you are a seed or early stage investor) the criteria may be regarded as relating not just to the existing status of the potential investee, but to what is realistically planned. Please rate each factor out of 5 where 5=essential, 4=important, 3=moderately important, 2=slightly important, and 1=irrelevant.

(a) THE PERSONALITY AND CHARACTERISTICS OF THE ENTREPRENEUR (INCLUDING THE ENTREPRENEUR'S MANAGEMENT TEAM)

|                                                       | Essential |    |    | Irrelevant |    |
|-------------------------------------------------------|-----------|----|----|------------|----|
|                                                       | O5        | O4 | O3 | O2         | O1 |
| Is capable of sustained, intense effort               | O5        | O4 | O3 | O2         | O1 |
| Is able to evaluate and react to risk well            | O5        | O4 | O3 | O2         | O1 |
| Is articulate in discussing his/her venture           | O5        | O4 | O3 | O2         | O1 |
| Attends to detail                                     | O5        | O4 | O3 | O2         | O1 |
| Has good personal "chemistry" with you                | O5        | O4 | O3 | O2         | O1 |
| Has a good relevant formal education                  | O5        | O4 | O3 | O2         | O1 |
| Has good judgement                                    | O5        | O4 | O3 | O2         | O1 |
| Has integrity                                         | O5        | O4 | O3 | O2         | O1 |
| Displays strategic vision                             | O5        | O4 | O3 | O2         | O1 |
| Was referred to me by a trustworthy source            | O5        | O4 | O3 | O2         | O1 |
| Has a significant investment or stake in the investee | O5        | O4 | O3 | O2         | O1 |

(b) ENTREPRENEUR'S EXPERIENCE (INCLUDING THAT OF THE ENTREPRENEUR'S TEAM)

|                                                            | Essential |    |    | Irrelevant |    |
|------------------------------------------------------------|-----------|----|----|------------|----|
|                                                            | O5        | O4 | O3 | O2         | O1 |
| Is thoroughly familiar with the market targeted by venture | O5        | O4 | O3 | O2         | O1 |
| Has demonstrated leadership/managerial ability in the past | O5        | O4 | O3 | O2         | O1 |
| Has a track record relevant to venture                     | O5        | O4 | O3 | O2         | O1 |
| Good references are available on the entrepreneur          | O5        | O4 | O3 | O2         | O1 |
| Has good relevant business and industry experience         | O5        | O4 | O3 | O2         | O1 |

(c) CHARACTERISTICS OF THE PRODUCT OR SERVICE

|                                                                                                                                             | Essential |    |    | Irrelevant |    |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------|----|----|------------|----|
|                                                                                                                                             | O5        | O4 | O3 | O2         | O1 |
| Has proprietary intellectual property which can be protected either legally (eg copyright, patent or design) or practically (eg by secrecy) | O5        | O4 | O3 | O2         | O1 |
| Has a good lead-time on the market competition                                                                                              | O5        | O4 | O3 | O2         | O1 |
| Enjoys demonstrated market acceptance                                                                                                       | O5        | O4 | O3 | O2         | O1 |
| Has been developed to the point of a functioning prototype                                                                                  | O5        | O4 | O3 | O2         | O1 |
| May be described as "high tech"                                                                                                             | O5        | O4 | O3 | O2         | O1 |

(d) CHARACTERISTICS OF THE TARGET MARKET

|                                                                   | Essential |    |    | Irrelevant |    |
|-------------------------------------------------------------------|-----------|----|----|------------|----|
|                                                                   | O5        | O4 | O3 | O2         | O1 |
| Enjoys a significant growth rate                                  | O5        | O4 | O3 | O2         | O1 |
| The venture is in an industry with which I am familiar            | O5        | O4 | O3 | O2         | O1 |
| The venture is in an industry in which I wish to invest           | O5        | O4 | O3 | O2         | O1 |
| There are good barriers to entry                                  | O5        | O4 | O3 | O2         | O1 |
| Little threat of competition during the initial investment period | O5        | O4 | O3 | O2         | O1 |
| Will create a new market                                          | O5        | O4 | O3 | O2         | O1 |
| Is mature                                                         | O5        | O4 | O3 | O2         | O1 |
| Potential for overseas markets                                    | O5        | O4 | O3 | O2         | O1 |
| Is large                                                          | O5        | O4 | O3 | O2         | O1 |

(e) OPERATIONAL ISSUES WHICH MUST BE WELL-POSITIONED OR IN GOOD ORDER

|                                                                                                                                                       | Essential |    |    | Irrelevant |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----|----|------------|----|
|                                                                                                                                                       | O5        | O4 | O3 | O2         | O1 |
| Distribution system/channels                                                                                                                          | O5        | O4 | O3 | O2         | O1 |
| Production techniques/facilities                                                                                                                      | O5        | O4 | O3 | O2         | O1 |
| Entrepreneur has gained control of key resources<br>(e.g. technology which is proprietary or exclusively<br>licensed, or key strategic partners, etc) | O5        | O4 | O3 | O2         | O1 |
| General employees are of good quality                                                                                                                 | O5        | O4 | O3 | O2         | O1 |
| Existence of a suitable employee incentive scheme                                                                                                     | O5        | O4 | O3 | O2         | O1 |

(f) FINANCIAL CONSIDERATIONS

|                                                                                                       | Essential |    |    | Irrelevant |    |
|-------------------------------------------------------------------------------------------------------|-----------|----|----|------------|----|
|                                                                                                       | O5        | O4 | O3 | O2         | O1 |
| Meets 'key' financial ratio benchmarks                                                                | O5        | O4 | O3 | O2         | O1 |
| A coherent and thorough business plan                                                                 | O5        | O4 | O3 | O2         | O1 |
| An investment that can be easily made liquid (e.g. IPO<br>or trade sale) or clearly and easily exited | O5        | O4 | O3 | O2         | O1 |
| Investments must require funding above a defined minimum size                                         | O5        | O4 | O3 | O2         | O1 |
| The venture is already profitable or cash flow positive                                               | O5        | O4 | O3 | O2         | O1 |
| The expected % shareholding falls within a given range                                                | O5        | O4 | O3 | O2         | O1 |
| Financial control systems are in a good state                                                         | O5        | O4 | O3 | O2         | O1 |
| You are able to add value to the investee beyond merely<br>providing capital                          | O5        | O4 | O3 | O2         | O1 |
| There is an independent co-investor                                                                   | O5        | O4 | O3 | O2         | O1 |

6. When ascertaining the investment stage, how important is it that the investment is one of the following? Please rate each factor out of 5, where 5=very attractive, 4-preferably, 3-indifferent, 2-preferably not and 1=very unattractive.

|                                 | Very attractive       |                       | Very unattractive     |                       |                       |
|---------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                                 | 05                    | 04                    | 03                    | 02                    | 01                    |
| Secondary purchase/replacement  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Management buyout (MBO)         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Management buy-in (MBI)         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Development/expansion           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Early stage/start-up investment | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Seed capital investment         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

### TARGETED RATES OF RETURN AND RISK INDICATORS

7. (a) How do you assess the targeted rates of return? 'Risk' should be interpreted broadly, including operating, financial and market risk, i.e. Please rate each factor out of 5, where 5=strongly agree, 4=agree, 3-indifferent, 2-disagree and 1-strongly disagree.

|                                                                                                                                                                  | Strongly agree        |                       | Strongly disagree     |                       |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                                                                                                                                                                  | 05                    | 04                    | 03                    | 02                    | 01                    |
| We require the investment to meet a standard required rate of return on equity (internal rate of return, IRR), regardless of the investee company's risk profile | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| We require the investment to meet a standard required rate of return on equity (IRR), according to the risk band of the investment                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| We require the investment to meet a specific required rate of return on equity (IRR), according to the characteristics of each investment                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| We require the funding structure to meet standard gearing ratios regardless of the risk profile                                                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| We require the funding structure to meet standard gearing ratio according to the risk band of the investment                                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| We require the funding structure to meet gearing ratios appropriate to each investment                                                                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| We require a rate of return which yields a total cash return commensurate with the amount invested                                                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- (b) Assuming you have decided to invest, do you regard the following general and specific risk factors as important (and may therefore increase your targeted rate of return)? Please rate each risk factor out of 5, where 5=always important, 4-usually important, 3-sometimes important, 2-rarely important and 1=never important.

#### GENERAL FACTORS

|                                                     | Always important      |                       | Never important       |                       |                       |
|-----------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                                                     | 05                    | 04                    | 03                    | 02                    | 01                    |
| Market conditions relating to a particular proposal | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| General economic conditions                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

|                                                               | Always important |    | Never important |    |    |
|---------------------------------------------------------------|------------------|----|-----------------|----|----|
|                                                               | 05               | 04 | 03              | 02 | 01 |
| Changes in prices for quoted equities                         |                  |    |                 |    |    |
| Quantity of inflow of funds into the VC/private equity market | 05               | 04 | 03              | 02 | 01 |
| Changes in returns for long-term gilts                        | 05               | 04 | 03              | 02 | 01 |
| Changes in the prime rate                                     | 05               | 04 | 03              | 02 | 01 |
| The state of the industrial/product sector of the investment  | 05               | 04 | 03              | 02 | 01 |

### SPECIFIC FACTORS

|                                                                                                                           | Always important |    | Never important |    |    |
|---------------------------------------------------------------------------------------------------------------------------|------------------|----|-----------------|----|----|
|                                                                                                                           | 05               | 04 | 03              | 02 | 01 |
| Expected length of time to exit from the investment                                                                       | 05               | 04 | 03              | 02 | 01 |
| Degree of participation of existing shareholders in this round                                                            | 05               | 04 | 03              | 02 | 01 |
| Actual cash amount you seek to receive from the investment                                                                | 05               | 04 | 03              | 02 | 01 |
| Degree of planning and strategy for exit from the investment                                                              | 05               | 04 | 03              | 02 | 01 |
| Liquidity of the investment                                                                                               | 05               | 04 | 03              | 02 | 01 |
| Possibility of a total write-off of the investment if it fails<br>(ie degree of 'downside' exposure or salvage value)     | 05               | 04 | 03              | 02 | 01 |
| Geographic distance from the investment                                                                                   | 05               | 04 | 03              | 02 | 01 |
| Expected gearing ratio                                                                                                    | 05               | 04 | 03              | 02 | 01 |
| Whether you (and the institutional syndicate, where appropriate)<br>have the majority of the equity                       | 05               | 04 | 03              | 02 | 01 |
| Quality and robustness of corporate governance                                                                            | 05               | 04 | 03              | 02 | 01 |
| Competitiveness of the market                                                                                             | 05               | 04 | 03              | 02 | 01 |
| Small size of the required investment (in Rand terms)                                                                     | 05               | 04 | 03              | 02 | 01 |
| Large size of the required investment (in Rand terms)                                                                     | 05               | 04 | 03              | 02 | 01 |
| Expected amount of post-deal re-organisation                                                                              | 05               | 04 | 03              | 02 | 01 |
| Round of investment (e.g. first, follow-on)                                                                               | 05               | 04 | 03              | 02 | 01 |
| Extent to which funding must be advanced up front or whether<br>it can be done in tranches upon achievement of milestones | 05               | 04 | 03              | 02 | 01 |
| Book value-to-market value ratio                                                                                          | 05               | 04 | 03              | 02 | 01 |
| Quality of managerial skills                                                                                              | 05               | 04 | 03              | 02 | 01 |
| Predictability or unpredictability of behaviour of the<br>entrepreneur and his team                                       | 05               | 04 | 03              | 02 | 01 |
| Level of financial contribution by management                                                                             | 05               | 04 | 03              | 02 | 01 |
| Expected dividend yield                                                                                                   | 05               | 04 | 03              | 02 | 01 |

(c) Do you regard the ownership of a majority of the equity or control as an indicator of increased or decreased risk or is it irrelevant?

- An increase in risk
- Irrelevant to risk
- A decrease in risk

(d) Do you regard an earlier round of funding as an indicator of increased or decreased risk or is it irrelevant?

- An increase in risk
- Irrelevant to risk
- A decrease in risk

(e) Do you require a discount or are you prepared to pay a premium on the investee's valuation if you are able to add good value to the investee, or is this irrelevant?

- A discount to valuation
- Irrelevant to valuation
- A premium to valuation

### VALUATION METHODS

8. Rate the following valuation methods in terms of preference of use (not for portfolio performance purposes, but for entry purposes): Please rate each method which you use out of 5, where 5=almost always, 4=usually, 3=sometimes, 2=seldom, 1=almost never. Please ignore the investment stages in which your fund does not invest. You may select more than one method. Assume that you are making a simple equity investment (ie that there are no contracting techniques involved such as staging (by staggering the investment in tranches), convertible debt, performance 'ratchets' or 'clawbacks').

(a) IF YOU ARE INVESTING IN A SEED INVESTMENT

|                                                                                                       | Almost Always |    |    | Almost Never |    |
|-------------------------------------------------------------------------------------------------------|---------------|----|----|--------------|----|
|                                                                                                       | ○5            | ○4 | ○3 | ○2           | ○1 |
| Historic cost book value                                                                              | ○5            | ○4 | ○3 | ○2           | ○1 |
| Replacement value                                                                                     | ○5            | ○4 | ○3 | ○2           | ○1 |
| Cash amount invested to date plus possible premium                                                    | ○5            | ○4 | ○3 | ○2           | ○1 |
| Liquidation value of asset                                                                            | ○5            | ○4 | ○3 | ○2           | ○1 |
| Discounted future cash flows                                                                          | ○5            | ○4 | ○3 | ○2           | ○1 |
| Dividend yield basis                                                                                  | ○5            | ○4 | ○3 | ○2           | ○1 |
| Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple) | ○5            | ○4 | ○3 | ○2           | ○1 |
| Recent PE ratio of the parent company's shares                                                        | ○5            | ○4 | ○3 | ○2           | ○1 |
| Recent transaction prices for acquisitions in the sector                                              | ○5            | ○4 | ○3 | ○2           | ○1 |
| Responses to attempts to solicit competing offers                                                     | ○5            | ○4 | ○3 | ○2           | ○1 |

|                                                                                                                                  |                         |                         |                         |                         |                         |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Industry comparables or special 'rule of thumb' pricing ratios (e.g. turnover ratios, subscriber values etc)                     | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Option pricing or similar valuation methods                                                                                      | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Other (specify: _____)                                                                                                           | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |

(b) IF YOU ARE INVESTING IN A START-UP/EARLY STAGE INVESTMENT

|                                                                                                                                  | Almost Always           |                         |                         | Almost Never            |                         |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                                                                  | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Historic cost book value                                                                                                         | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Replacement value                                                                                                                | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Cash amount invested to date plus possible premium                                                                               | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Liquidation value of asset                                                                                                       | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Discounted future cash flows                                                                                                     | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Dividend yield basis                                                                                                             | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Recent PE ratio of the parent company's shares                                                                                   | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Recent transaction prices for acquisitions in the sector                                                                         | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Responses to attempts to solicit competing offers                                                                                | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Industry comparables or special 'rule of thumb' pricing ratios (e.g. turnover ratios, subscriber values etc)                     | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Option pricing or similar valuation methods                                                                                      | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Other (specify: _____)                                                                                                           | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |

(c) IF YOU ARE INVESTING IN AN EXPANSION / DEVELOPMENT STAGE INVESTMENT

|                                                    | Almost Always           |                         |                         | Almost Never            |                         |
|----------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                    | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Historic cost book value                           | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Replacement value                                  | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Cash amount invested to date plus possible premium | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Liquidation value of asset                         | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Discounted future cash flows                       | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Dividend yield basis                               | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |

|                                                                                                                                  |                       |                       |                       |                       |                       |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Recent PE ratio of the parent company's shares                                                                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Recent transaction prices for acquisitions in the sector                                                                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Responses to attempts to solicit competing offers                                                                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Industry comparables or special 'rule of thumb' pricing ratios (e.g. turnover ratios, subscriber values etc)                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Option pricing or similar valuation methods                                                                                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other (specify: _____)                                                                                                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

(d) IF YOU ARE INVESTING IN A BUYOUT (MBO/MBI) STAGE INVESTMENT

|                                                                                                                                  | Almost Always         |                       |                       | Almost Never          |                       |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                                                                                                                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Historic cost book value                                                                                                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Replacement value                                                                                                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Cash amount invested to date plus possible premium                                                                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Liquidation value of asset                                                                                                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Discounted future cash flows                                                                                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dividend yield basis                                                                                                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Recent PE ratio of the parent company's shares                                                                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Recent transaction prices for acquisitions in the sector                                                                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Responses to attempts to solicit competing offers                                                                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Industry comparables or special 'rule of thumb' pricing ratios (e.g. turnover ratios, subscriber values etc)                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Option pricing or similar valuation methods                                                                                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other (specify: _____)                                                                                                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

(e) IF YOU ARE INVESTING IN A SECONDARY PURCHASE OR REPLACEMENT STAGE INVESTMENT

|                          | Almost Always         |                       |                       | Almost Never          |                       |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Historic cost book value | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Replacement value        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

|                                                                                                                                  |                         |                         |                         |                         |                         |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Cash amount invested to date plus possible premium                                                                               | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Liquidation value of asset                                                                                                       | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Discounted future cash flows                                                                                                     | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Dividend yield basis                                                                                                             | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Recent PE ratio of the parent company's shares                                                                                   | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Recent transaction prices for acquisitions in the sector                                                                         | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Responses to attempts to solicit competing offers                                                                                | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Industry comparables or special 'rule of thumb' pricing ratios (e.g. turnover ratios, subscriber values etc)                     | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Option pricing or similar valuation methods                                                                                      | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Other (specify: _____)                                                                                                           | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |

OPTIONAL COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

**ARRIVING AT FINAL VALUATION**

9. Where more than one valuation method is regularly used, how do you arrive at final/benchmark valuation? Please rate each method out of 5, where 5=almost always, 4=usually, 3=sometimes, 2=seldom, 1=almost never.

|                                                                                      | Almost Always           |                         |                         | Almost Never            |                         |
|--------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                      | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Use the highest valuation                                                            | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Use the lowest valuation                                                             | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Use some form of 'averaging' (such as the mode, mean or median of the valuations)    | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Place greatest weight on one particular method and use others as a check             | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Use 'gut feel' or intuition                                                          | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |
| Try and resolve the differences in the methods by understanding the reasons therefor | <input type="radio"/> 5 | <input type="radio"/> 4 | <input type="radio"/> 3 | <input type="radio"/> 2 | <input type="radio"/> 1 |

Other (please specify): \_\_\_\_\_



(b) If "Yes", how? (OPTIONAL)

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**PORTFOLIO STRATEGY**

14.(a) Do you apply a portfolio strategy to your investment selection (even where your fund has a narrow focus)? Yes  No

(b) If so, do you:

(i) ensure that you make a number of investments, none of which should exceed a percentage of the total portfolio, say, 15%, or Yes  No

(ii) actively favour investments which reduce this overall risk of your portfolio, while maintaining your targeted return (i.e. an optimal portfolio comprising investments with high returns but with risk profiles which are negatively correlated as far as possible), or Yes  No

(iii) actively favour a certain class of investment or industry and apply a consolidation policy (ie a portfolio in which the risk profiles are positively correlated in an effort to establish greater certainty in respect of the distribution of likely returns), or Yes  No

(iv) other: \_\_\_\_\_

---

(c) Do you regard your portfolio of investments as:

well-diversified , or

consolidated , or

no particular view

---

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**VENTURE CAPITAL ASSOCIATIONS AND INFLUENCE**

15.(a) In terms of the valuation of your current portfolio, have you adopted the British Venture Capital Association Guidelines for valuation:

Yes  No

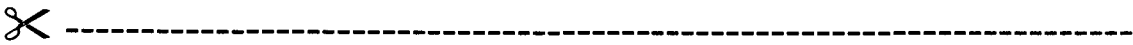
(b) If so, has this affected, or do you expect this to affect, your entry valuation techniques (as set out in Question 11)?

Yes  No

Optional Comments: \_\_\_\_\_

---





TO BE SEPARATED BY PRICEWATERHOUSECOOPERS.

Completed by: \_\_\_\_\_

Institution: \_\_\_\_\_

Name of Fund: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Date of completion: \_\_\_\_\_

Thank you very much for helping me by completing the questionnaire. Please return this form to PricewaterhouseCoopers in the prepaid envelope provided:

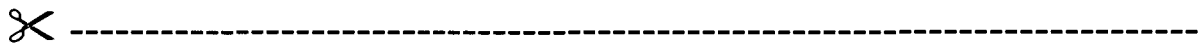
|                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------|
| PRICEWATERHOUSECOOPERS<br>VC Thesis (Taylor)<br>PO Box 168<br>Belville 7535<br><br><u>Attention: Mr Tom Blok</u> |
|------------------------------------------------------------------------------------------------------------------|

If there are queries please do not hesitate to contact the researcher as follows:

Postal Address:

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PO Box 456  
Stellenbosch 7599

(W) 021 8883387  
(Fax) 021 883 2799  
(Cell) 082 551 5511  
E-mail: [mjgt@remgro.com](mailto:mjgt@remgro.com)



## ANNEXURE 7.4

### GLOSSARY

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|                           |                                                                                                                                                                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seed capital:             | funding for research, evaluation and development of a concept or business before the business starts trading.                                                                                                                                |
| Start-up and early-stage: | funding for new companies being set up or for the development of those which have been in business for a short time (one to three years).                                                                                                    |
| Expansion or development: | funding for the growth and expansion of a company which is breaking even or trading profitably.                                                                                                                                              |
| Replacement capital:      | funding for the purchase of existing shares in a company from other shareholders, be they individuals, other venture-backers or the public stock market.                                                                                     |
| Buyout (MBO/MBI):         | financing to enable a management team, either existing (an MBO) or new (an MBI), and their backers to acquire their business from the existing owners, be it a family, conglomerate, etc.                                                    |
| Independent funds:        | those venture capital and private equity companies, managers or funds raising and disbursing capital raised from third party investors.                                                                                                      |
| Semi-captive funds:       | as above, but also managing assets for a parent company (typically an insurance company or institutional asset manager) which may be channelled through open funds or allocated from a reserved pool internally and released when necessary. |
| Captive funds:            | those disbursing funds solely on behalf of a parent or group, typically an insurance company or institutional asset manager, often from an indeterminate pool of money.                                                                      |
| Trade sale:               | sale of a company to a third party, often referred to as M&A.                                                                                                                                                                                |

## ANNEXURE 7.5

### SELECTED STATISTICAL RESULTS ON A GROUP BASIS

#### **SOUTH AFRICAN VENTURE CAPITAL AND PRIVATE EQUITY: INVESTMENT APPRAISAL ASPECTS**

##### TABLE OF CONTENTS

SECTION A: DESCRIPTIVE STATISTICS OF CHARACTERISTICS  
OF VENTURE CAPITAL COMPANIES

SECTION B: ANALYSIS OF REQUIRED RATES OF RETURN

1. Descriptive statistics of required rates of return
2. Hypothesis tests of differences in rates of return
  - A. Overall differences

SECTION C: ANALYSIS OF INVESTMENT APPRAISAL  
CONSIDERATIONS

1. Overall rankings: Q5A-Q5F
2. Rankings by consideration within each aspect of  
Investment appraisal

##### APPENDIX

##### **References:**

StatSoft, Inc, (1984-2000). STATISTICA '99 edition, Kernel Release 5.5. A.

**SECTION A: DESCRIPTIVE STATISTICS OF CHARACTERISTICS OF  
VENTURE COMPANIES**

**1. Institutional background**

Table 1. Frequency distribution of companies by institutional background characteristics

| <b>Characteristic</b>        | <b>Frequency</b> | <b>Percent</b> |
|------------------------------|------------------|----------------|
| <b>Company Type</b>          |                  |                |
| Captive                      | 17               | 33.33          |
| Independent                  | 28               | 54.90          |
| Semi-captive                 | 4                | 7.84           |
| Public Sector                | 2                | 3.92           |
| Other                        | 0                | 0.00           |
| Total                        | 51               | 100.00         |
| <b>Empowerment objective</b> |                  |                |
| No                           | 39               | 76.47          |
| Yes                          | 12               | 23.53          |
| Total                        | 51               | 100.00         |
| <b>Development Objective</b> |                  |                |
| No                           | 38               | 74.51          |
| Yes                          | 13               | 25.49          |
| Total                        | 51               | 100.00         |
| <b>JSE listing</b>           |                  |                |
| No                           | 41               | 80.39          |
| Yes                          | 10               | 19.61          |
| Total                        | 51               | 100.00         |

**2. Proportion of number of investments and value**

Table 2. Summary statistics of proportion of Number of Investments by Investment cycle (percentage)

| <b>Investment Category</b> | <b>Valid N</b> | <b>Mean %</b> | <b>Median</b> | <b>Mode</b> | <b>Min.</b> | <b>Max.</b> | <b>Std Dev.</b> |
|----------------------------|----------------|---------------|---------------|-------------|-------------|-------------|-----------------|
| Seed                       | 50             | 10.71         | 0.00          | 0 (29)      | 0.00        | 100.00      | 18.17           |
| Start-up/early stage       | 50             | 32.31         | 29.70         | 0 (9)       | 0.00        | 100.00      | 28.71           |
| Expansion/dev.             | 50             | 34.00         | 30.00         | 0 (9)       | 0.00        | 100.00      | 28.04           |
| Mngt buyout (MBO)          | 50             | 12.04         | 0.00          | 0 (28)      | 0.00        | 66.70       | 19.85           |
| Mngt buyin (MBI)           | 50             | 2.52          | 0.00          | 0 (41)      | 0.00        | 34.00       | 6.69            |
| Secondary purchase         | 50             | 8.42          | 0.00          | 0 (32)      | 0.00        | 67.00       | 15.74           |

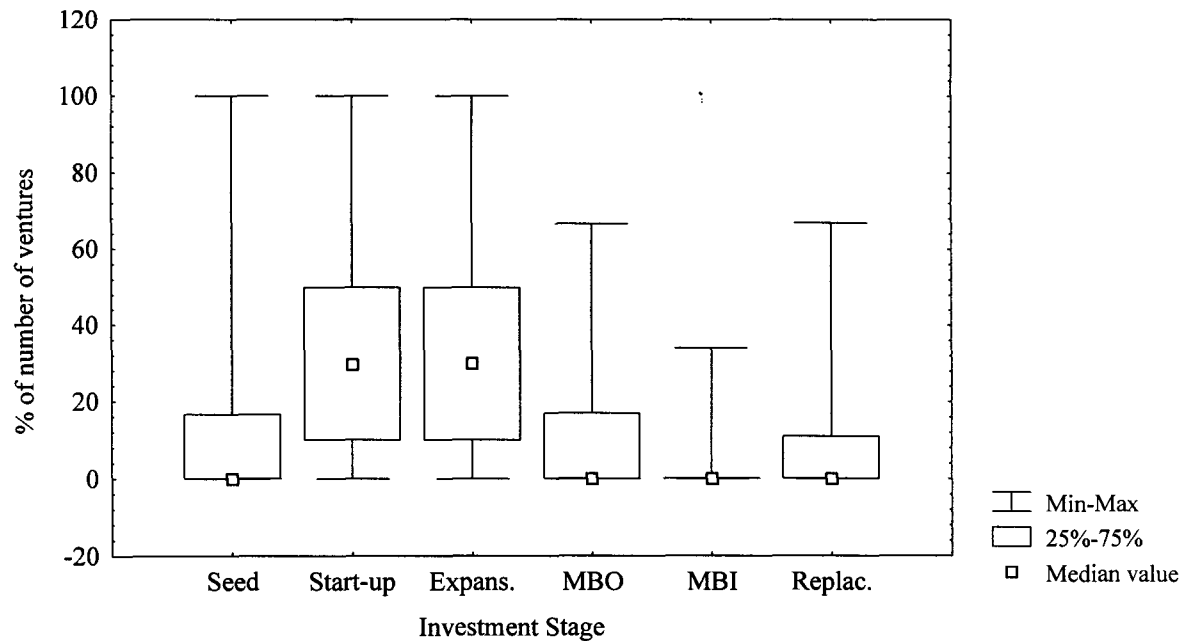
( ) Frequency of mode

Table 3. Summary statistics of proportion of Value of Investments by Investment cycle (percentage)

| Investment Category   | Valid N | Mean % | Median | Mode   | Min. | Max.   | Std Dev. |
|-----------------------|---------|--------|--------|--------|------|--------|----------|
| Seed                  | 47      | 6.35   | 0.00   | 0 (28) | 0.00 | 100.00 | 18.31    |
| Start-up/early stage  | 47      | 29.64  | 18.20  | 0 (8)  | 0.00 | 100.00 | 31.88    |
| Expansion/development | 47      | 33.16  | 24.00  | 0 (9)  | 0.00 | 100.00 | 30.54    |
| Mngt buyout (MBO)     | 47      | 19.18  | 0.00   | 0 (26) | 0.00 | 91.00  | 28.75    |
| Mngt buyin (MBI)      | 47      | 1.44   | 0.00   | 0 (41) | 0.00 | 31.80  | 5.29     |
| Secondary purchase    | 47      | 10.22  | 0.00   | 0 (30) | 0.00 | 82.00  | 19.48    |

( ) Frequency of mode

Figure 1. Box & Whisker Plots of Number of Ventures by Investment Stage



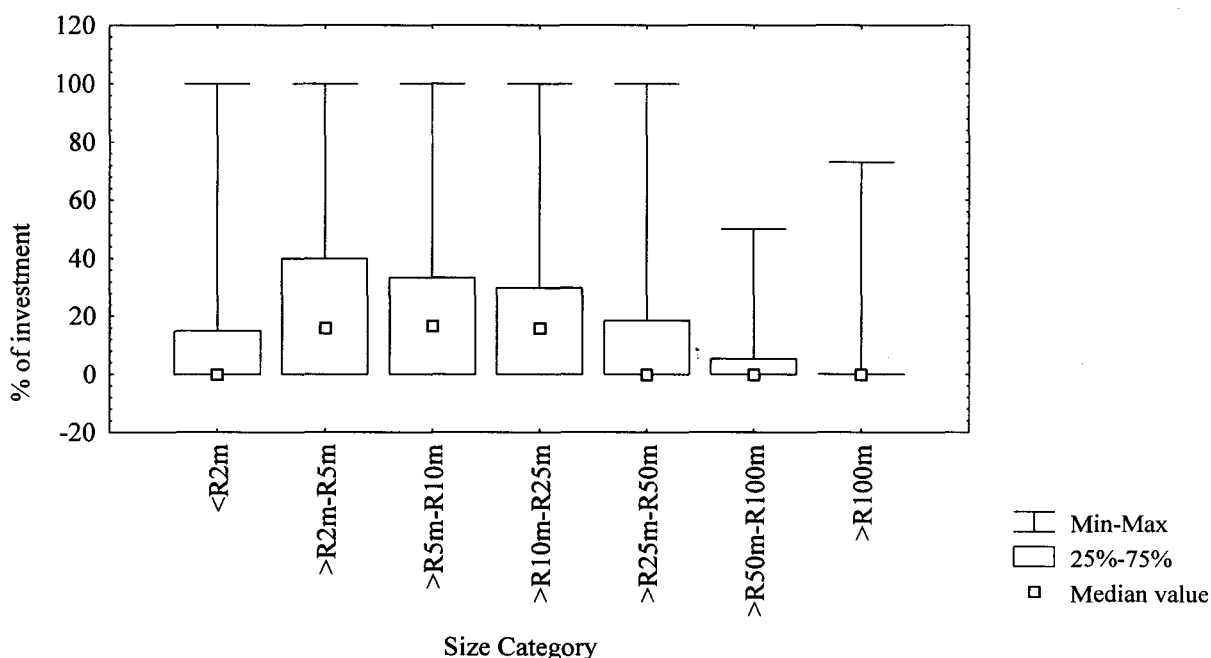
### 3. Proportion of investments by size

Table 4. Summary statistics of proportion of Investments by size

| Category size | Valid N | Mean  | Median | Mode   | Min. | Max.   | Std Dev. |
|---------------|---------|-------|--------|--------|------|--------|----------|
| <R2m          | 48      | 13.40 | 0.00   | 0 (26) | 0.00 | 100.00 | 24.40    |
| >R2m-R5m      | 48      | 26.41 | 15.85  | 0 (13) | 0.00 | 100.00 | 29.29    |
| >R5m-R10m     | 48      | 21.17 | 16.70  | 0 (17) | 0.00 | 100.00 | 23.72    |
| >R10m-R25m    | 48      | 18.49 | 15.85  | 0 (19) | 0.00 | 100.00 | 22.01    |
| >R25m-R50m    | 48      | 11.81 | 0.00   | 0 (26) | 0.00 | 100.00 | 18.93    |
| >R50-R100m    | 48      | 4.16  | 0.00   | 0 (35) | 0.00 | 50.00  | 9.45     |
| >R100m        | 48      | 4.57  | 0.00   | 0 (38) | 0.00 | 73.00  | 13.51    |

( ) Frequency of mode

Figure 3. Box & Whisker Plots percentage of investment by size category



### 4. Venture Capital Fund

Table 5. Summary statistics of selected characteristics of venture capital fund

| Characteristic              | Valid N | Mean  | Media n | Mode      | Min. | Max.  | Std Dev. |
|-----------------------------|---------|-------|---------|-----------|------|-------|----------|
| Company experience (in yrs) | 50      | 4.71  | 3.00    | 3.00 (12) | 0.00 | 40.00 | 6.31     |
| New investments             | 50      | 11.22 | 9.00    | 6.00 (6)  | 0.00 | 70.00 | 11.59    |
| Current investments         | 50      | 11.46 | 8.50    | †         | 1.00 | 58.00 | 10.98    |
| Managers                    | 48      | 3.83  | 3.00    | 3.00 (12) | 1.00 | 15.00 | 2.36     |
| Managers' experience        | 50      | 6.25  | 4.25    | 4.00 (8)  | 1.00 | 20.00 | 5.05     |

( ) Frequency of mode

† = Multiple modes

**NB: TOTALS**

*Current investments: 573*

*NEW investments: 561*

*Investment managers: 184*

Table 6. Frequency distribution of companies by ownership

| <b>Company Ownership</b> | <b>Frequency</b> | <b>Percent</b> |
|--------------------------|------------------|----------------|
| Local                    | 42               | 84.00          |
| Foreign                  | 8                | 16.00          |
| Total                    | 50               | 100.00         |

Table 7. Frequency distribution of companies by interviewee's position

| <b>Interviewee's position</b> | <b>Frequency</b> | <b>Percent</b> |
|-------------------------------|------------------|----------------|
| Assistant                     | 0                | 0.00           |
| Manager                       | 11               | 22.92          |
| Partner                       | 14               | 29.17          |
| MD/CEO                        | 23               | 47.91          |
| Total                         | 48               | 100.00         |

**5. Targeted rates of return and risk indicators**

Table 8. Frequency distribution of companies by targeted rates of return and risk indicators

| <b>Equity ownership risk</b>         | <b>Frequency</b> | <b>Percent</b> |
|--------------------------------------|------------------|----------------|
| Increase                             | 16               | 34.04          |
| Irrelevant                           | 19               | 40.43          |
| Decrease                             | 12               | 25.53          |
| Total                                | 47               | 100.00         |
| <b>Earlier round of funding risk</b> | <b>Frequency</b> | <b>Percent</b> |
| Increase                             | 22               | 44.90          |
| Irrelevant                           | 13               | 26.53          |
| Decrease                             | 14               | 28.57          |
| Total                                | 49               | 100.00         |
| <b>Discount or premium value</b>     | <b>Frequency</b> | <b>Percent</b> |
| Discount                             | 26               | 52.00          |
| Irrelevant                           | 19               | 38.00          |
| Premium                              | 5                | 10.00          |
| Total                                | 50               | 100.00         |

**6. Investment type by bands of current nominal rate of return on equity**

Table 9. Frequency distribution of companies by Investment type by bands of current nominal rate of return on equity [All responses included irrespective of whether respondent either has in the past, or does in the future, intend to participate in the various investment stages].

| Nominal rate of return (%) p.a.                          | Investment cycle |          |           |       |       |             | Totals |
|----------------------------------------------------------|------------------|----------|-----------|-------|-------|-------------|--------|
|                                                          | Seed             | Start-up | Expansion | MBO   | MBI   | Replacement |        |
| <15                                                      | 0                | 0        | 0         | 0     | 0     | 0           | 0      |
| 15-20                                                    | 0                | 0        | 0         | 0     | 0     | 0           | 0      |
| 21-25                                                    | 1                | 1        | 1         | 1     | 2     | 2           | 8      |
| 26-30                                                    | 0                | 2        | 4         | 7     | 3     | 3           | 19     |
| 31-35                                                    | 1                | 1        | 10        | 11    | 11    | 11          | 45     |
| 36-45                                                    | 4                | 5        | 9         | 8     | 5     | 3           | 34     |
| 46-55                                                    | 2                | 9        | 9         | 1     | 1     | 0           | 22     |
| 56-70                                                    | 3                | 5        | 3         | 0     | 1     | 0           | 12     |
| 71-100                                                   | 7                | 7        | 2         | 1     | 1     | 1           | 19     |
| 101-200                                                  | 4                | 3        | 0         | 0     | 0     | 0           | 7      |
| >200                                                     | 4                | 1        | 0         | 0     | 0     | 0           | 5      |
| Total                                                    | 26               | 34       | 38        | 29    | 24    | 20          | 171    |
| <b>Summary statistics of grouped data (nominal rate)</b> |                  |          |           |       |       |             |        |
| MEAN                                                     | 104.17           | 70.12    | 43.26     | 35.93 | 37.27 | 35.00       | 54.81  |
| STD DEV.                                                 | 73.43            | 45.61    | 14.40     | 11.24 | 12.07 | 12.81       | 43.64  |

## 7. Comparison between buyout market conditions and benchmark

Table 10. Frequency distribution of companies by benchmark increase (comparison between buyout market conditions and benchmark)

| Benchmark | Frequency | Percent |
|-----------|-----------|---------|
| Increase  | 7         | 14.89   |
| No change | 34        | 72.34   |
| Decrease  | 6         | 12.77   |
| Total     | 47        | 100.00  |

Table 11. Summary statistics of benchmark percentage change by increase or decrease or combined

### (a) All Data

|           | Valid N | Mean | Median | Mode | Min. | Max.  | Std Dev. |
|-----------|---------|------|--------|------|------|-------|----------|
| Increases | 8       | 5.25 | 5.00   |      | 0.00 | 10.00 | 3.89     |

† - Multiple modes

|           | Valid N | Mean   | Median | Mode  | Min.   | Max.   | Std Dev. |
|-----------|---------|--------|--------|-------|--------|--------|----------|
| Decreases | 5       | -10.50 | -5.00  | -5.00 | -30.00 | -2.500 | 11.24    |

|          | Valid N | Mean | Median | Mode<br>† | Min.   | Max.  | Std Dev. |
|----------|---------|------|--------|-----------|--------|-------|----------|
| Combined | 13      | -.81 | 0.00   |           | -30.00 | 10.00 | 10.70    |

† = Multiple modes

**(b) Excluding 'outlier' benchmark for VC Company T (-30%)**

|           | Valid N | Mean | Median | Mode<br>† | Min. | Max.  | Std Dev. |
|-----------|---------|------|--------|-----------|------|-------|----------|
| Increases | 8       | 5.25 | 5.00   |           | 0.00 | 10.00 | 3.89     |

† = Multiple modes

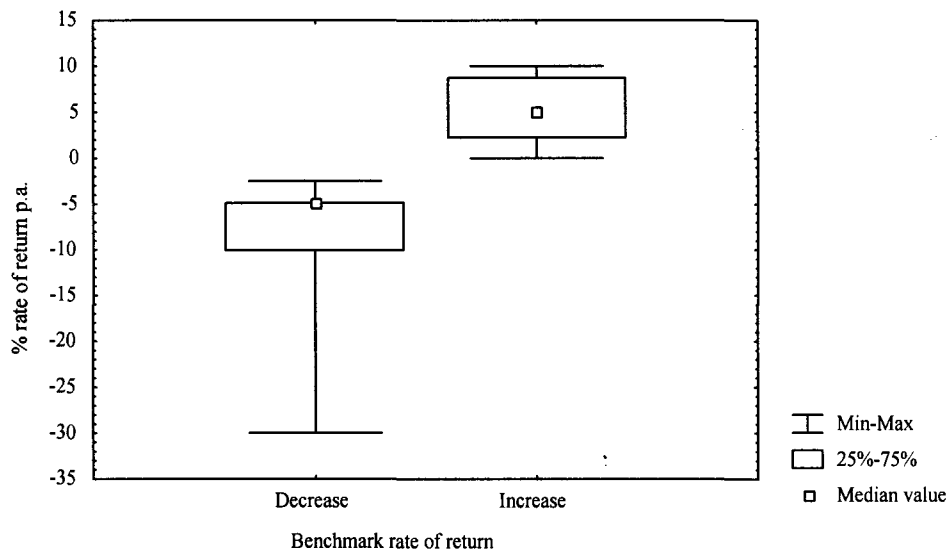
|           | Valid N | Mean  | Median | Mode  | Min.   | Max.   | Std Dev. |
|-----------|---------|-------|--------|-------|--------|--------|----------|
| Decreases | 4       | -5.63 | -5.00  | -5.00 | -10.00 | -2.500 | 3.15     |

|          | Valid N | Mean | Median | Mode<br>† | Min.   | Max.  | Std Dev. |
|----------|---------|------|--------|-----------|--------|-------|----------|
| Combined | 12      | 1.63 | 2.25   |           | -10.00 | 10.00 | 6.40     |

† = Multiple modes

**[Figure 4 includes the outlier of -30%]**

Figure 4. Box & Whisker Plots of Benchmark rate of return (%)



## 8. Debt-equity ratio effect

Table 12. Frequency distribution of companies by debt-equity ratio effect for different stages of the investment cycle

| <b>Investment cycle</b>               | <b>Frequency</b> | <b>Percent</b> |
|---------------------------------------|------------------|----------------|
| <b>Seed</b>                           |                  |                |
| No                                    | 23               | 65.71          |
| Yes                                   | 12               | 34.29          |
| Total                                 | 35               | 100.00         |
| <b>Start-up/early stage</b>           |                  |                |
| No                                    | 25               | 64.10          |
| Yes                                   | 14               | 35.90          |
| Total                                 | 39               | 100.00         |
| <b>Expansion/development stage</b>    |                  |                |
| No                                    | 20               | 44.44          |
| Yes                                   | 25               | 55.56          |
| Total                                 | 45               | 100.00         |
| <b>Buyout (MBO/MBI)</b>               |                  |                |
| No                                    | 9                | 25.00          |
| Yes                                   | 27               | 75.00          |
| Total                                 | 36               | 100.00         |
| <b>Secondary purchase/replacement</b> |                  |                |
| No                                    | 10               | 34.48          |
| Yes                                   | 19               | 65.52          |
| Total                                 | 29               | 100.00         |

## 9. Portfolio Strategy

Table 13. Frequency distribution of companies by Portfolio strategy

| <b>Portfolio strategy</b>   | <b>Frequency</b> | <b>Percent</b> |
|-----------------------------|------------------|----------------|
| No                          | 10               | 20.83          |
| Yes                         | 38               | 79.17          |
| Total                       | 48               | 100.00         |
| <b>Portfolio &lt;15%</b>    |                  |                |
| No                          | 9                | 23.68          |
| Yes                         | 29               | 76.32          |
| Total                       | 38               | 100.00         |
| <b>Reduce risk</b>          |                  |                |
| No                          | 16               | 44.44          |
| Yes                         | 20               | 56.56          |
| Total                       | 36               | 100.00         |
| <b>Consolidation policy</b> |                  |                |
| No                          | 19               | 57.58          |
| Yes                         | 14               | 42.42          |
| Total                       | 33               | 100.00         |

| <b>Portfolio view</b> |    |        |
|-----------------------|----|--------|
| Well-diversified      | 24 | 53.33  |
| Consolidated          | 7  | 15.55  |
| No particular view    | 14 | 31.12  |
| Total                 | 45 | 100.00 |

## 10. Venture Capital Associations and influence

Table 14. Frequency distribution of companies by VC Associations and influence

| <b>British VCA guidelines</b>    | <b>Frequency</b> | <b>Percent</b> |
|----------------------------------|------------------|----------------|
| No                               | 21               | 42.86          |
| Yes                              | 28               | 57.14          |
| Total                            | 49               | 100.00         |
| <b>Guidelines effect</b>         |                  |                |
| No                               | 46               | 93.88          |
| Yes                              | 3                | 6.12           |
| Total                            | 49               | 100.00         |
| <b>VC ASSOCIATION MEMBERSHIP</b> |                  |                |
| <b>SA VC Association</b>         |                  |                |
| Member                           | 36               | 70.59          |
| Associate                        | 1                | 1.96           |
| Neither                          | 14               | 27.45          |
| Total                            | 51               | 100.00         |
| <b>National VC Association</b>   |                  |                |
| Member                           | 0                | 0.00           |
| Associate                        | 0                | 0.00           |
| Neither                          | 51               | 100.00         |
| Total                            | 51               | 100.00         |
| <b>British VC Association</b>    |                  |                |
| Member                           | 0                | 0.00           |
| Associate                        | 0                | 0.00           |
| Neither                          | 51               | 100.00         |
| Total                            | 51               | 100.00         |
| <b>European VC Association</b>   |                  |                |
| Member                           | 3                | 5.88           |
| Associate                        | 0                | 0.00           |
| Neither                          | 48               | 94.12          |
| Total                            | 51               | 100.00         |

## 11. Final Comments

Table 15. Frequency distribution of companies by clarity of Questionnaire

| Clarity      | 2 Frequency | Percent |
|--------------|-------------|---------|
| Very unclear | 0           | 0.00    |
| Unclear      | 3           | 5.88    |
| Indifferent  | 5           | 9.80    |
| Clear        | 32          | 62.75   |
| Very Clear   | 11          | 21.57   |
| Total        | 51          | 100.00  |

## SECTION B: ANALYSIS OF REQUIRED RATES OF RETURN

### 1. Descriptive statistics of required rates of return

Table 16. Summary statistics of overall required rate of return (%) by Investment Stage/Cycle<sup>+</sup>

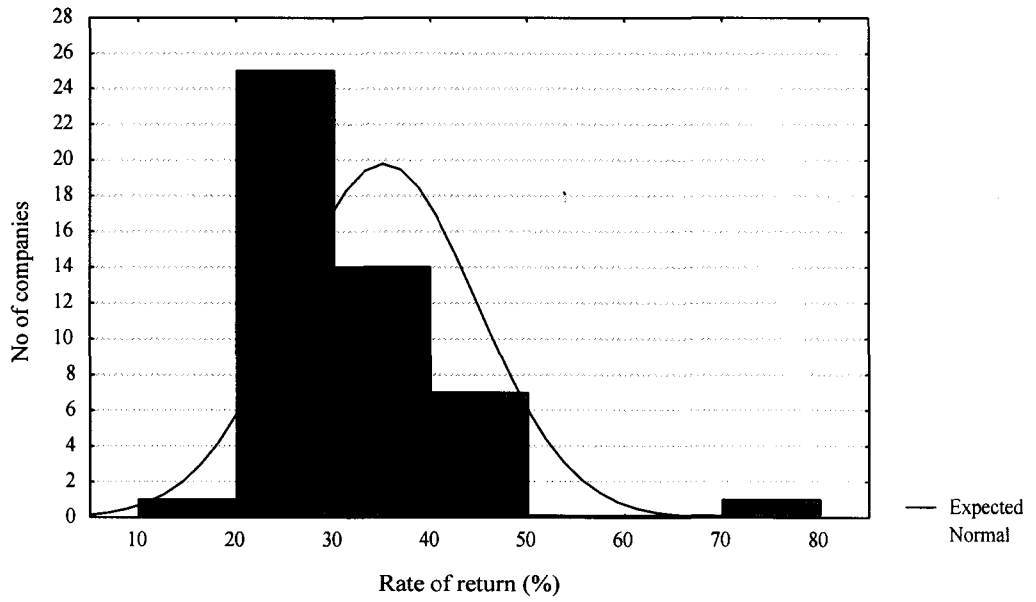
| Investment Stage             | Mean | Median | Mode    | Min. | Max  | Valid N | Std. Dev. | Q25  | Q75  |
|------------------------------|------|--------|---------|------|------|---------|-----------|------|------|
| Seed                         | 36.7 | 30.0   | 30 (12) | 25.0 | 75.0 | 25      | 11.00     | 30.0 | 40.0 |
| Start-up                     | 37.2 | 35.0   | 30 (14) | 25.0 | 75.0 | 33      | 10.70     | 30.0 | 40.0 |
| Expansion/<br>development    | 35.9 | 30.0   | 30 (17) | 25.0 | 75.0 | 37      | 10.20     | 30.0 | 40.0 |
| MBO                          | 35.0 | 30.0   | 30 (14) | 25.0 | 75.0 | 28      | 10.27     | 30.0 | 40.0 |
| MBI                          | 35.3 | 30.0   | 30 (12) | 25.0 | 75.0 | 24      | 10.98     | 30.0 | 40.0 |
| Secondary<br>purch./ replac. | 34.4 | 30.0   | 30 (12) | 25.0 | 75.0 | 20      | 10.86     | 30.0 | 37.5 |
| Total                        | 35.1 | 30.0   | 30 (20) | 20.0 | 75.0 | 48      | 9.68      | 30.0 | 40.0 |

<sup>+</sup> Investment stage/cycle defined by responses in Q11 (importance of investment)

( ) Frequency of mode, Q25 = lower quartile, Q75 = upper quartile

## Overall required rates of return:

Figure 5. Histogram of rate of return p.a. (%)



## SECTION C: ANALYSIS OF INVESTMENT APPRAISAL CONSIDERATIONS

The Wilcoxon Matched Pairs Test was used to determine whether actual investments in Q2 match with Q6. There was significant difference in the ratings in Q2 compared to those in Q6 (p-value = 0.028 or p-value <0.05).

Table 21. Results of Wilcoxon Matched Pairs Test for difference in Q2 and Q6

| Comparison* | Valid N | T    | Z     | p-value |
|-------------|---------|------|-------|---------|
| 1. Q2 VS Q6 | 6       | 0.00 | 2.201 | 0.028   |

\* Hypothesis test based on mean ratings of each investment cycle.

### A. OVERALL RANKINGS: Q5A-Q5F (Rankings of all considerations in order of 'importance')

Table 22. Rankings\* of consideration within each aspect of investment appraisal

\*rankings are based on the mean of the ratings scales/scores

| Item no. | Description                                                | Valid N | Mean | Std. Dev. |
|----------|------------------------------------------------------------|---------|------|-----------|
| Q5a-8    | Has integrity                                              | 51      | 4.90 | 0.30      |
| Q5b-1    | Is thoroughly familiar with the market targeted by venture | 51      | 4.65 | 0.52      |
| Q5a-1    | Is capable of sustained, intense effort                    | 51      | 4.63 | 0.56      |
| Q5a-7    | Has good judgement                                         | 51      | 4.57 | 0.57      |
| Q5a-11   | Has a significant investment or stake in the investee      | 51      | 4.55 | 0.64      |
| Q5a-2    | Is able to evaluate and react to risk well                 | 51      | 4.47 | 0.54      |
| Q5a-9    | Displays strategic vision                                  | 51      | 4.45 | 0.64      |
| Q5f-8    | You are able to add value to the investee beyond merely    | 51      | 4.25 | 0.77      |
| Q5d-1    | Enjoys a significant growth rate                           | 51      | 4.25 | 0.69      |
| Q5b-4    | Good references are available on the entrepreneur          | 51      | 4.25 | 0.77      |
| Q5b-5    | Has good relevant business and industry experience         | 50      | 4.23 | 0.79      |
| Q5f-2    | A coherent and thorough business plan                      | 51      | 4.22 | 0.76      |
| Q5d-3    | The venture is in an industry in which I wish to invest    | 51      | 4.20 | 0.80      |
| Q5b-2    | Has demonstrated leadership/managerial ability in the past | 51      | 4.18 | 0.79      |
| Q5e-3    | Entrepreneur has gained control of key resources           | 50      | 4.16 | 0.74      |
| Q5e-4    | General employees are of good quality                      | 51      | 4.14 | 0.63      |
| Q5b-3    | Has a track record relevant to venture                     | 51      | 4.14 | 0.69      |
| Q5d-4    | There are good barriers to entry                           | 51      | 4.01 | 0.72      |
| Q5f-3    | An investment that can be easily made liquid (eg IPO)      | 51      | 3.93 | 1.09      |
| Q5a-5    | Has good personal "chemistry" with you                     | 51      | 3.90 | 0.83      |
| Q5d-8    | Potential for overseas markets                             | 51      | 3.84 | 1.07      |
| Q5a-4    | Attends to detail                                          | 51      | 3.84 | 0.70      |
| Q5c-4    | Has been developed to the point of a functioning prototype | 50      | 3.82 | 1.29      |
| Q5c-2    | Has a good lead-time on the market competition             | 51      | 3.80 | 0.94      |
| Q5a-3    | Is articulate in discussing his/her venture                | 51      | 3.75 | 0.82      |

|        |                                                                   |    |      |      |
|--------|-------------------------------------------------------------------|----|------|------|
| Q5f-7  | Financial control systems are in a good state                     | 51 | 3.73 | 1.08 |
| Q5e-1  | Distribution system/channels                                      | 51 | 3.71 | 0.86 |
| Q5c-3  | Enjoys demonstrated market acceptance                             | 51 | 3.71 | 0.88 |
| Q5c-1  | Has proprietary intellectual property                             | 51 | 3.71 | 1.12 |
| Q5f-6  | The expected % shareholding falls within a given range            | 51 | 3.69 | 1.07 |
| Q5f-1  | Meets 'key' financial ratio benchmarks                            | 51 | 3.61 | 1.10 |
| Q5f-4  | Investments must require funding above a defined minimum size     | 50 | 3.60 | 1.23 |
| Q5d-5  | Little threat of competition during the initial investment period | 51 | 3.42 | 0.78 |
| Q5e-2  | Production techniques/facilities                                  | 51 | 3.41 | 0.92 |
| Q5e-5  | Existence of a suitable employee incentive scheme                 | 51 | 3.37 | 1.13 |
| Q5d-2  | The venture is in an industry with which I am familiar            | 51 | 3.24 | 1.16 |
| Q5d-9  | Is large                                                          | 51 | 3.23 | 1.45 |
| Q5a-10 | Was referred to me by a trustworthy source                        | 51 | 3.12 | 0.93 |
| Q5f-5  | The venture is already profitable or cash flow positive           | 51 | 2.84 | 1.21 |
| Q5a-6  | Has a good relevant formal education                              | 51 | 2.80 | 0.94 |
| Q5c-5  | May be described as "high tech"                                   | 51 | 2.79 | 1.28 |
| Q5d-6  | Will create a new market                                          | 51 | 2.65 | 0.87 |
| Q5d-7  | Is mature                                                         | 51 | 2.35 | 0.96 |
| Q5f-9  | There is an independent co-investor                               | 51 | 1.98 | 0.91 |

**B. RANKINGS BY CONSIDERATION WITHIN EACH SECTION/PART:  
Q2-Q9**

Table 23. Rankings\* of consideration within each aspect of investment appraisal  
\*rankings are based on the mean of the ratings scales/scores

| Item no.    | Description                                                       | Valid N | Mean |
|-------------|-------------------------------------------------------------------|---------|------|
| <b>Q5-A</b> | <b>PERSONALITY AND ENTREPRENEUR CHARACTER</b>                     |         |      |
| Q5a-8       | Has integrity                                                     | 51      | 4.90 |
| Q5a-1       | Is capable of sustained, intense effort                           | 51      | 4.63 |
| Q5a-7       | Has good judgement                                                | 51      | 4.57 |
| Q5a-11      | Has a significant investment or stake in the investee             | 51      | 4.55 |
| Q5a-2       | Is able to evaluate and react to risk well                        | 51      | 4.47 |
| Q5a-9       | Displays strategic vision                                         | 51      | 4.45 |
| Q5a-5       | Has good personal "chemistry" with you                            | 51      | 3.90 |
| Q5a-4       | Attends to detail                                                 | 51      | 3.84 |
| Q5a-3       | Is articulate in discussing his/her venture                       | 51      | 3.75 |
| Q5a-10      | Was referred to me by a trustworthy source                        | 51      | 3.12 |
| Q5a-6       | Has a good relevant formal education                              | 51      | 2.80 |
| <b>Q5-B</b> | <b>ENTREPRENEUR EXPERIENCE</b>                                    |         |      |
| Q5b-1       | Is thoroughly familiar with the market targeted by venture        | 51      | 4.65 |
| Q5b-4       | Good references are available on the entrepreneur                 | 51      | 4.25 |
| Q5b-5       | Has good relevant business and industry experience                | 50      | 4.23 |
| Q5b-2       | Has demonstrated leadership/managerial ability in the past        | 51      | 4.18 |
| Q5b-3       | Has a track record relevant to venture                            | 51      | 4.14 |
| <b>Q5-C</b> | <b>PRODUCT OR SERVICE</b>                                         |         |      |
| Q5c-4       | Has been developed to the point of a functioning prototype        | 50      | 3.82 |
| Q5c-2       | Has a good lead-time on the market competition                    | 51      | 3.80 |
| Q5c-1       | Has propriety intellectual property                               | 51      | 3.71 |
| Q5c-3       | Enjoys demonstrated market acceptance                             | 51      | 3.71 |
| Q5c-5       | May be described as "high tech"                                   | 51      | 2.79 |
| <b>Q5-D</b> | <b>TARGET MARKET</b>                                              |         |      |
| Q5d-1       | Enjoys a significant growth rate                                  | 51      | 4.25 |
| Q5d-3       | The venture is in an industry in which I wish to invest           | 51      | 4.20 |
| Q5d-4       | There are good barriers to entry                                  | 51      | 4.01 |
| Q5d-8       | Potential for overseas markets                                    | 51      | 3.84 |
| Q5d-5       | Little threat of competition during the initial investment period | 51      | 3.42 |
| Q5d-2       | The venture is in an industry with which I am familiar            | 51      | 3.24 |
| Q5d-9       | Is large                                                          | 51      | 3.23 |
| Q5d-6       | Will create a new market                                          | 51      | 2.65 |

|                |                                                                                      |    |      |
|----------------|--------------------------------------------------------------------------------------|----|------|
| Q5d-7          | Is mature                                                                            | 51 | 2.35 |
| <b>Q5-E</b>    | <b>OPERATIONAL ISSUES</b>                                                            |    |      |
| Q5e-3          | Entrepreneur has gained control of key resources                                     | 50 | 4.16 |
| Q5e-4          | General employees are of good quality                                                | 51 | 4.14 |
| Q5e-1          | Distribution system/channels                                                         | 51 | 3.71 |
| Q5e-2          | Production techniques/facilities                                                     | 51 | 3.41 |
| Q5e-5          | Existence of a suitable employee incentive scheme                                    | 51 | 3.37 |
| <b>Q5-F</b>    | <b>FINANCIAL CONSIDERATIONS</b>                                                      |    |      |
| Q5f-8          | You are able to add value to the investee beyond merely                              | 51 | 4.25 |
| Q5f-2          | A coherent and thorough business plan                                                | 51 | 4.22 |
| Q5f-3          | An investment that can be easily made liquid (e.g. IPO)                              | 51 | 3.93 |
| Q5f-7          | Financial control systems are in a good state                                        | 51 | 3.73 |
| Q5f-6          | The expected % shareholding falls within a given range                               | 51 | 3.69 |
| Q5f-1          | Meets 'key' financial ratio benchmarks                                               | 51 | 3.61 |
| Q5f-4          | Investments must require funding above a defined minimum size                        | 50 | 3.60 |
| Q5f-5          | The venture is already profitable or cash flow positive                              | 51 | 2.84 |
| Q5f-9          | There is an independent co-investor                                                  | 51 | 1.98 |
| <b>Q6</b>      | <b>INVESTMENT IMPORTANCE</b>                                                         |    |      |
| Q6d            | Development/expansion                                                                | 51 | 4.16 |
| Q6b            | Management buyout (MBO)                                                              | 50 | 3.56 |
| Q6c            | Management buy-in (MBI)                                                              | 50 | 3.34 |
| Q6e            | Early stage/start-up investment                                                      | 51 | 3.11 |
| Q6a            | Secondary purchase/replacement                                                       | 50 | 2.74 |
| Q6f            | Seed capital investment                                                              | 50 | 2.02 |
| <b>Q7-A</b>    | <b>ASSESSMENT OF TARGETED RATES OF RETURN</b>                                        |    |      |
| Q7a-2          | We require the investment to meet a standard required                                | 51 | 3.90 |
| Q7a-6          | We require the funding structure to meet gearing ratios                              | 51 | 3.80 |
| Q7a-3          | We require the investment to meet a specific required rate of return on equity (IRR) | 50 | 3.74 |
| Q7a-7          | We require a rate of return which yields a total cash return                         | 51 | 3.65 |
| Q7a-1          | We require the investment to meet a standard required rate of return on equity (IRR) | 51 | 3.27 |
| Q7a-5          | We require the funding structure to meet standard gearing ratios                     | 51 | 3.25 |
| Q7a-4          | We require the funding structure to meet standard gearing ratios                     | 51 | 2.48 |
| <b>Q7-B 1.</b> | <b>GENERAL FACTORS</b>                                                               |    |      |
| Q7b-1          | Market conditions relating to a particular proposal                                  | 51 | 4.61 |

|                |                                                                                                                                  |    |      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|----|------|
| Q7b-7          | The state of the industrial/product sector of the investment                                                                     | 50 | 3.95 |
| Q7b-2          | General economic conditions                                                                                                      | 51 | 3.45 |
| Q7b-3          | Changes in prices for quoted equities                                                                                            | 49 | 3.36 |
| Q7b-6          | Changes in the prime rate                                                                                                        | 50 | 2.94 |
| Q7b-5          | Changes in returns for long-term gilts                                                                                           | 50 | 2.44 |
| Q7b-4          | Quantity of inflow of funds into the VC/private equity market                                                                    | 50 | 2.40 |
| <b>Q7-B 2.</b> | <b>SPECIFIC FACTORS</b>                                                                                                          |    |      |
| Q7b-25         | Quality of managerial skills                                                                                                     | 51 | 4.76 |
| Q7b-26         | Predictability or unpredictability of behaviour of the entrepreneur                                                              | 51 | 4.67 |
| Q7b-27         | Level of financial contribution by management                                                                                    | 51 | 4.35 |
| Q7b-18         | Competitiveness of the market                                                                                                    | 51 | 4.24 |
| Q7b-8          | Expected length of time to exit from the investment                                                                              | 50 | 4.12 |
| Q7b-17         | Quality and robustness of corporate governance                                                                                   | 51 | 4.12 |
| Q7b-13         | Possibility of a total write-off of the investment if it fails                                                                   | 50 | 4.04 |
| Q7b-11         | Degree of planning and strategy for exit from the investment                                                                     | 51 | 4.00 |
| Q7b-9          | Degree of participation of existing shareholders in this round                                                                   | 51 | 3.96 |
| Q7b-10         | Actual cash amount you seek to receive from the investment                                                                       | 51 | 3.82 |
| Q7b-21         | Expected amount of post-deal re-organisation                                                                                     | 51 | 3.80 |
| Q7b-12         | Liquidity of the investment                                                                                                      | 51 | 3.65 |
| Q7b-23         | Extent to which funding must be advanced up front or whether it can be done in tranches upon achievement of milestones           | 51 | 3.63 |
| Q7b-22         | Round of investment (e.g. first, follow-on)                                                                                      | 50 | 3.46 |
| Q7b-20         | Large size of the required investment (in Rand terms)                                                                            | 51 | 3.37 |
| Q7b-14         | Geographic distance from the investment                                                                                          | 51 | 3.36 |
| Q7b-15         | Expected gearing ratio                                                                                                           | 51 | 3.35 |
| Q7b-19         | Small size of the required investment (in Rand terms)                                                                            | 51 | 3.29 |
| Q7b-24         | Book value-to-market value ratio                                                                                                 | 51 | 2.75 |
| Q7b-16         | Whether you (and the institutional syndicate, where appropriate)                                                                 | 51 | 2.37 |
| Q7b-28         | Expected dividend yield                                                                                                          | 51 | 2.22 |
| <b>Q8A</b>     | <b>INVESTING IN A SEED INVESTMENT</b>                                                                                            |    |      |
| Q8a-5          | Discounted future cash flows                                                                                                     | 32 | 4.00 |
| Q8a-11         | Industry comparables or special 'rule of thumb'                                                                                  | 30 | 3.57 |
| Q8a-9          | Recent transaction prices for acquisitions in the sector                                                                         | 31 | 3.45 |
| Q8a-12         | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 31 | 3.42 |
| Q8a-3          | Cash amount invested to date plus possible premium                                                                               | 30 | 3.40 |
| Q8a-7          | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 31 | 3.39 |

|             |                                                                                                                                  |    |      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|----|------|
| Q8a-4       | Liquidation value of asset                                                                                                       | 29 | 2.52 |
| Q8a-10      | Responses to attempts to solicit competing offers                                                                                | 31 | 2.52 |
| Q8a-8       | Recent PE ratio of the parent company's shares                                                                                   | 30 | 2.33 |
| Q8a-13      | Option pricing or similar valuation methods                                                                                      | 30 | 2.33 |
| Q8a-1       | Historic cost book value                                                                                                         | 30 | 2.23 |
| Q8a-2       | Replacement value                                                                                                                | 30 | 2.23 |
| Q8a-6       | Dividend yield basis                                                                                                             | 31 | 1.65 |
| Q8a-14      | Other (specify:)                                                                                                                 | 48 | 1.25 |
| <b>Q8-B</b> | <b>INVESTING IN A START-UP/EARLY STAGE INVESTM.</b>                                                                              |    |      |
| Q8b-5       | Discounted future cash flows                                                                                                     | 40 | 4.18 |
| Q8b-12      | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 40 | 3.73 |
| Q8b-11      | Industry comparables or special 'rule of thumb'                                                                                  | 38 | 3.71 |
| Q8b-7       | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 40 | 3.68 |
| Q8b-9       | Recent transaction prices for acquisitions in the sector                                                                         | 39 | 3.64 |
| Q8b-3       | Cash amount invested to date plus possible premium                                                                               | 38 | 3.32 |
| Q8b-10      | Responses to attempts to solicit competing offers                                                                                | 39 | 2.97 |
| Q8b-4       | Liquidation value of asset                                                                                                       | 38 | 2.71 |
| Q8b-8       | Recent PE ratio of the parent company's shares                                                                                   | 38 | 2.58 |
| Q8b-1       | Historic cost book value                                                                                                         | 38 | 2.55 |
| Q8b-13      | Option pricing or similar valuation methods                                                                                      | 38 | 2.42 |
| Q8b-2       | Replacement value                                                                                                                | 38 | 2.39 |
| Q8b-6       | Dividend yield basis                                                                                                             | 39 | 1.87 |
| Q8b-14      | Other (specify:)                                                                                                                 | 49 | 1.16 |
| <b>Q8-C</b> | <b>INVESTING IN AN EXPANSION/DEVELOPMENT</b>                                                                                     |    |      |
| Q8c-5       | Discounted future cash flows                                                                                                     | 45 | 4.51 |
| Q8c-7       | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 44 | 4.14 |
| Q8c-9       | Recent transaction prices for acquisitions in the sector                                                                         | 44 | 3.95 |
| Q8c-11      | Industry comparables or special 'rule of thumb'                                                                                  | 44 | 3.73 |
| Q8c-12      | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 45 | 3.29 |
| Q8c-8       | Recent PE ratio of the parent company's shares                                                                                   | 44 | 3.23 |
| Q8c-10      | Responses to attempts to solicit competing offers                                                                                | 44 | 2.93 |
| Q8c-4       | Liquidation value of asset                                                                                                       | 43 | 2.84 |
| Q8c-3       | Cash amount invested to date plus possible premium                                                                               | 44 | 2.70 |
| Q8c-2       | Replacement value                                                                                                                | 44 | 2.66 |
| Q8c-1       | Historic cost book value                                                                                                         | 44 | 2.61 |
| Q8c-6       | Dividend yield basis                                                                                                             | 44 | 2.14 |
| Q8c-13      | Option pricing or similar valuation methods                                                                                      | 43 | 2.05 |
| Q8c-14      | Other (specify:)                                                                                                                 | 51 | 1.00 |

|             |                                                                                                                                  |    |      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|----|------|
| <b>Q8-D</b> | <b>INVESTING IN A BUYOUT(MBO/MBI)</b>                                                                                            |    |      |
| Q8d-5       | Discounted future cash flows                                                                                                     | 36 | 4.58 |
| Q8d-7       | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 36 | 4.08 |
| Q8d-9       | Recent transaction prices for acquisitions in the sector                                                                         | 36 | 3.92 |
| Q8d-11      | Industry comparables or special 'rule of thumb'                                                                                  | 36 | 3.50 |
| Q8d-8       | Recent PE ratio of the parent company's shares                                                                                   | 36 | 3.47 |
| Q8d-12      | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 37 | 2.97 |
| Q8d-1       | Historic cost book value                                                                                                         | 36 | 2.97 |
| Q8d-4       | Liquidation value of asset                                                                                                       | 36 | 2.97 |
| Q8d-10      | Responses to attempts to solicit competing offers                                                                                | 36 | 2.97 |
| Q8d-2       | Replacement value                                                                                                                | 36 | 2.86 |
| Q8d-3       | Cash amount invested to date plus possible premium                                                                               | 36 | 2.53 |
| Q8d-6       | Dividend yield basis                                                                                                             | 36 | 2.33 |
| Q8d-13      | Option pricing or similar valuation methods                                                                                      | 36 | 1.75 |
| Q8d-14      | Other (specify:)                                                                                                                 | 50 | 1.00 |
| <b>Q8-E</b> | <b>INVESTING IN A SECONDARY PURCHASE/REPLAC.</b>                                                                                 |    |      |
| Q8e-5       | Discounted future cash flows                                                                                                     | 30 | 4.57 |
| Q8e-7       | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 29 | 4.10 |
| Q8e-9       | Recent transaction prices for acquisitions in the sector                                                                         | 29 | 3.93 |
| Q8e-11      | Industry comparables or special 'rule of thumb'                                                                                  | 29 | 3.55 |
| Q8e-8       | Recent PE ratio of the parent company's shares                                                                                   | 29 | 3.28 |
| Q8e-12      | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 30 | 3.00 |
| Q8e-10      | Responses to attempts to solicit competing offers                                                                                | 29 | 2.90 |
| Q8e-3       | Cash amount invested to date plus possible premium                                                                               | 29 | 2.66 |
| Q8e-1       | Historic cost book value                                                                                                         | 29 | 2.45 |
| Q8e-2       | Replacement value                                                                                                                | 29 | 2.41 |
| Q8e-4       | Liquidation value of asset                                                                                                       | 29 | 2.38 |
| Q8e-6       | Dividend yield basis                                                                                                             | 29 | 2.10 |
| Q8e-13      | Option pricing or similar valuation methods                                                                                      | 28 | 1.82 |
| Q8e-14      | Other (specify:)                                                                                                                 | 49 | 1.00 |
| <b>Q9</b>   | <b>ARRIVING AT FINAL EVALUATION</b>                                                                                              |    |      |
| Q9d         | Place greatest weight on one particular method                                                                                   | 49 | 4.06 |
| Q9f         | Try and resolve the differences in the methods by understanding the reasons therefor                                             | 50 | 3.80 |
| Q9e         | Use 'gut feel' or intuition                                                                                                      | 49 | 3.33 |
| Q9c         | Use some form of 'averaging' (such as the mode, mean or median of the valuations)                                                | 49 | 2.78 |
| Q9b         | Use the lowest valuation                                                                                                         | 49 | 2.43 |
| Q9a         | Use the highest valuation                                                                                                        | 49 | 1.59 |

Table 24. Summary statistics of ratings/scores by consideration/item within each aspect of investment appraisal

| Item No. | Description                                                | Valid N | Mean | Median | Mode | Min | Max | Std. Dev. |
|----------|------------------------------------------------------------|---------|------|--------|------|-----|-----|-----------|
| Q2-3a    | Seed capital investment                                    | 51      | 1.51 | 1.00   | 1    | 1   | 5   | 0.86      |
| Q2-3b    | Early stage/start-up investment                            | 51      | 2.49 | 2.49   | 3    | 1   | 5   | 1.29      |
| Q2-3c    | Development/expansion                                      | 51      | 2.55 | 3.00   | 1    | 1   | 5   | 1.25      |
| Q2-3d    | Management buyout (MBO)                                    | 51      | 1.53 | 1.00   | 1    | 1   | 4   | 0.97      |
| Q2-3e    | Management buy-in (MBI)                                    | 51      | 1.10 | 1.00   | 1    | 1   | 3   | 0.36      |
| Q2-3f    | Secondary purchase/replacement                             | 51      | 1.39 | 1.00   | 1    | 1   | 4   | 0.78      |
| Q5a-1    | Is capable of sustained, intense effort                    | 51      | 4.63 | 5.00   | 5    | 3   | 5   | 0.56      |
| Q5a-2    | Is able to evaluate and react to risk well                 | 51      | 4.47 | 4.47   | 5    | 3   | 5   | 0.54      |
| Q5a-3    | Is articulate in discussing his/her venture                | 51      | 3.75 | 4.00   | 4    | 2   | 5   | 0.82      |
| Q5a-4    | Attends to detail                                          | 51      | 3.84 | 4.00   | 4    | 3   | 5   | 0.70      |
| Q5a-5    | Has good personal "chemistry" with you                     | 51      | 3.90 | 4.00   | 4    | 2   | 5   | 0.83      |
| Q5a-6    | Has a good relevant formal education                       | 51      | 2.80 | 3.00   | 3    | 1   | 5   | 0.94      |
| Q5a-7    | Has good judgement                                         | 51      | 4.57 | 5.00   | 5    | 3   | 5   | 0.57      |
| Q5a-8    | Has integrity                                              | 51      | 4.90 | 5.00   | 5    | 4   | 5   | 0.30      |
| Q5a-9    | Displays strategic vision                                  | 51      | 4.45 | 5.00   | 5    | 3   | 5   | 0.64      |
| Q5a-10   | Was referred to me by a trustworthy source                 | 51      | 3.12 | 3.00   | 3    | 1   | 5   | 0.93      |
| Q5a-11   | Has a significant investment or stake                      | 51      | 4.55 | 5.00   | 5    | 3   | 5   | 0.64      |
| Q5b-1    | Is thoroughly familiar with the market targeted by venture | 51      | 4.65 | 5.00   | 5    | 3   | 5   | 0.52      |
| Q5b-2    | Has demonstrated leadership/managerial ability in the past | 51      | 4.18 | 4.00   | 4    | 1   | 5   | 0.79      |
| Q5b-3    | Has a track record relevant to venture                     | 51      | 4.14 | 4.00   | 4    | 3   | 5   | 0.69      |
| Q5b-4    | Good references are available on the entrepreneur          | 51      | 4.25 | 4.00   | 5    | 2   | 5   | 0.77      |

|       |                                                                   |    |      |      |   |   |   |      |
|-------|-------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q5b-5 | Has good relevant business and industry experience                | 50 | 4.23 | 4.00 | 4 | 2 | 5 | 0.79 |
| Q5c-1 | Has propriety intellectual property                               | 51 | 3.71 | 4.00 | 4 | 1 | 5 | 1.12 |
| Q5c-2 | Has a good lead-time on the market competition                    | 51 | 3.80 | 4.00 | 4 | 1 | 5 | 0.94 |
| Q5c-3 | Enjoys demonstrated market acceptance                             | 51 | 3.71 | 4.00 | 4 | 1 | 5 | 0.88 |
| Q5c-4 | Has been developed to the point of a functioning prototype        | 50 | 3.82 | 4.00 | 5 | 1 | 5 | 1.29 |
| Q5c-5 | May be described as "high tech"                                   | 51 | 2.79 | 3.00 | 3 | 1 | 5 | 1.28 |
| Q5d-1 | Enjoys a significant growth rate                                  | 51 | 4.25 | 4.00 | 4 | 3 | 5 | 0.69 |
| Q5d-2 | The venture is in an industry with which I am familiar            | 51 | 3.24 | 3.00 | 4 | 1 | 5 | 1.16 |
| Q5d-3 | The venture is in an industry in which I wish to invest           | 51 | 4.20 | 4.00 | 4 | 2 | 5 | 0.80 |
| Q5d-4 | There are good barriers to entry                                  | 51 | 4.01 | 4.00 | 4 | 3 | 5 | 0.72 |
| Q5d-5 | Little threat of competition during the initial investment period | 51 | 3.42 | 3.42 | 4 | 2 | 5 | 0.78 |
| Q5d-6 | Will create a new market                                          | 51 | 2.65 | 3.00 | 3 | 1 | 4 | 0.87 |
| Q5d-7 | Is mature                                                         | 51 | 2.35 | 2.00 | 2 | 1 | 4 | 0.96 |
| Q5d-8 | Potential for overseas markets                                    | 51 | 3.84 | 4.00 | 4 | 1 | 5 | 1.07 |
| Q5d-9 | Is large                                                          | 51 | 3.23 | 3.00 | 2 | 1 | 9 | 1.45 |
| Q5e-1 | Distribution system/channels                                      | 51 | 3.71 | 4.00 | 4 | 1 | 5 | 0.86 |
| Q5e-2 | Production techniques/facilities                                  | 51 | 3.41 | 4.00 | 4 | 1 | 5 | 0.92 |
| Q5e-3 | Entrepreneur has gained control of key resources                  | 50 | 4.16 | 4.00 | 4 | 2 | 5 | 0.74 |
| Q5e-4 | General employees are of good quality                             | 51 | 4.14 | 4.00 | 4 | 2 | 5 | 0.63 |
| Q5e-5 | Existence of a suitable employee incentive scheme                 | 51 | 3.37 | 4.00 | 4 | 1 | 5 | 1.13 |
| Q5f-1 | Meets 'key' financial ratio benchmarks                            | 51 | 3.61 | 4.00 | 4 | 1 | 5 | 1.10 |

|       |                                                                           |    |      |      |   |   |   |      |
|-------|---------------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q5f-2 | A coherent and thorough business plan                                     | 51 | 4.22 | 4.00 | 5 | 3 | 5 | 0.76 |
| Q5f-3 | An investment that can be easily made liquid (e.g. IPO)                   | 51 | 3.93 | 4.00 | 5 | 1 | 5 | 1.09 |
| Q5f-4 | Investments must require funding above a defined minimum size             | 50 | 3.60 | 4.00 | 4 | 1 | 5 | 1.23 |
| Q5f-5 | The venture is already profitable or cash flow positive                   | 51 | 2.84 | 3.00 | 3 | 1 | 5 | 1.21 |
| Q5f-6 | The expected % shareholding falls within a given range                    | 51 | 3.69 | 4.00 | 4 | 1 | 5 | 1.07 |
| Q5f-7 | Financial control systems are in a good state                             | 51 | 3.73 | 4.00 | 4 | 1 | 5 | 1.08 |
| Q5f-8 | You are able to add value to the investee beyond merely providing capital | 51 | 4.25 | 4.00 | 5 | 2 | 5 | 0.77 |
| Q5f-9 | There is an independent co-investor                                       | 51 | 1.98 | 2.00 | 2 | 1 | 5 | 0.91 |
| Q6a   | Secondary purchase/replacement                                            | 50 | 2.74 | 3.00 | 3 | 1 | 5 | 0.99 |
| Q6b   | Management buyout (MBO)                                                   | 50 | 3.56 | 4.00 | 4 | 1 | 5 | 1.26 |
| Q6c   | Management buy-in (MBI)                                                   | 50 | 3.34 | 3.00 | 3 | 1 | 5 | 1.08 |
| Q6d   | Development/expansion                                                     | 51 | 4.16 | 4.00 | 4 | 2 | 5 | 0.78 |
| Q6e   | Early stage/start-up investment                                           | 51 | 3.11 | 3.00 | 3 | 1 | 5 | 1.29 |
| Q6f   | Seed capital investment                                                   | 50 | 2.02 | 1.00 | 1 | 1 | 5 | 1.33 |
| Q7a-1 | We require the investment to meet a standard required rate of return      | 51 | 3.27 | 4.00 | 5 | 1 | 5 | 1.50 |
| Q7a-2 | We require the investment to meet a standard required                     | 51 | 3.90 | 4.00 | 5 | 1 | 5 | 1.32 |
| Q7a-3 | We require the investment to meet a specific required rate of return      | 50 | 3.74 | 4.00 | 4 | 1 | 5 | 1.17 |

|        |                                                                  |    |      |      |   |   |   |      |
|--------|------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q7a-4  | We require the funding structure to meet standard gearing ratios | 51 | 2.48 | 3.00 | 3 | 1 | 5 | 1.20 |
| Q7a-5  | We require the funding structure to meet standard gearing ratios | 51 | 3.25 | 3.00 | 3 | 1 | 5 | 1.09 |
| Q7a-6  | We require the funding structure to meet gearing ratios          | 51 | 3.80 | 4.00 | 4 | 1 | 5 | 1.04 |
| Q7a-7  | We require a rate of return which yields a total cash return     | 51 | 3.65 | 4.00 | 4 | 1 | 5 | 1.25 |
| Q7b-1  | Market conditions relating to a particular proposal              | 51 | 4.61 | 5.00 | 5 | 3 | 5 | 0.60 |
| Q7b-2  | General economic conditions                                      | 51 | 3.45 | 3.00 | 3 | 1 | 5 | 0.86 |
| Q7b-3  | Changes in prices for quoted equities                            | 49 | 3.36 | 3.00 | 3 | 1 | 5 | 0.85 |
| Q7b-4  | Quantity of inflow of funds into the VC/private equity market    | 50 | 2.40 | 2.00 | 2 | 1 | 4 | 0.97 |
| Q7b-5  | Changes in returns for long-term gilts                           | 50 | 2.44 | 3.00 | 3 | 1 | 5 | 1.13 |
| Q7b-6  | Changes in the prime rate                                        | 50 | 2.94 | 3.00 | 3 | 1 | 5 | 1.10 |
| Q7b-7  | The state of the industrial/product sector of the investment     | 50 | 3.95 | 4.00 | 4 | 1 | 5 | 0.96 |
| Q7b-8  | Expected length of time to exit from the investment              | 50 | 4.12 | 4.00 | 4 | 2 | 5 | 0.80 |
| Q7b-9  | Degree of participation of existing shareholders in this round   | 51 | 3.96 | 4.00 | 4 | 2 | 5 | 0.87 |
| Q7b-10 | Actual cash amount you seek to receive from the investment       | 51 | 3.82 | 4.00 | 4 | 1 | 5 | 0.84 |
| Q7b-11 | Degree of planning and strategy for exit from the investment     | 51 | 4.00 | 4.00 | 4 | 2 | 5 | 0.89 |
| Q7b-12 | Liquidity of the investment                                      | 51 | 3.65 | 4.00 | 4 | 1 | 5 | 1.04 |

|        |                                                                     |    |      |      |   |   |   |      |
|--------|---------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q7b-13 | Possibility of a total write-off of the investment if it fails      | 50 | 4.04 | 4.00 | 4 | 2 | 5 | 0.78 |
| Q7b-14 | Geographic distance from the investment                             | 51 | 3.36 | 3.50 | 4 | 1 | 5 | 1.02 |
| Q7b-15 | Expected gearing ratio                                              | 51 | 3.35 | 3.00 | 4 | 2 | 5 | 0.87 |
| Q7b-16 | Whether you (and the institutional syndicate, where appropriate)    | 51 | 2.37 | 2.00 | 3 | 1 | 5 | 1.02 |
| Q7b-17 | Quality and robustness of corporate governance                      | 51 | 4.12 | 4.00 | 4 | 1 | 5 | 0.82 |
| Q7b-18 | Competitiveness of the market                                       | 51 | 4.24 | 4.00 | 4 | 3 | 5 | 0.59 |
| Q7b-19 | Small size of the required investment (in Rand terms)               | 51 | 3.29 | 3.00 | 3 | 1 | 5 | 1.03 |
| Q7b-20 | Large size of the required investment (in Rand terms)               | 51 | 3.37 | 3.00 | 3 | 1 | 5 | 0.89 |
| Q7b-21 | Expected amount of post-deal re-organisation                        | 51 | 3.80 | 4.00 | 4 | 1 | 5 | 0.96 |
| Q7b-22 | Round of investment (e.g. first, follow-on)                         | 50 | 3.46 | 4.00 | 4 | 1 | 5 | 0.81 |
| Q7b-23 | Extent to which funding must be advanced up front                   | 51 | 3.63 | 4.00 | 4 | 1 | 5 | 1.04 |
| Q7b-24 | Book value-to-market value ratio                                    | 51 | 2.75 | 3.00 | 3 | 1 | 4 | 1.00 |
| Q7b-25 | Quality of managerial skills                                        | 51 | 4.76 | 5.00 | 5 | 3 | 5 | 0.51 |
| Q7b-26 | Predictability or unpredictability of behaviour of the entrepreneur | 51 | 4.67 | 5.00 | 5 | 4 | 5 | 0.48 |
| Q7b-27 | Level of financial contribution by management                       | 51 | 4.35 | 4.35 | 5 | 3 | 5 | 0.72 |
| Q7b-28 | Expected dividend yield                                             | 51 | 2.22 | 2.00 | 2 | 1 | 5 | 0.97 |
| Q8a-1  | Historic cost book value                                            | 30 | 2.23 | 2.00 | 1 | 1 | 4 | 1.33 |
| Q8a-2  | Replacement value                                                   | 30 | 2.23 | 2.00 | 1 | 1 | 5 | 1.33 |
| Q8a-3  | Cash amount invested to date plus possible premium                  | 30 | 3.40 | 4.00 | 4 | 1 | 5 | 1.33 |
| Q8a-4  | Liquidation value of asset                                          | 29 | 2.52 | 2.52 | 1 | 1 | 5 | 1.40 |

|        |                                                                                                                              |    |      |      |   |   |   |      |
|--------|------------------------------------------------------------------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q8a-5  | Discounted future cash flows                                                                                                 | 32 | 4.00 | 4.00 | 5 | 1 | 5 | 1.24 |
| Q8a-6  | Dividend yield basis                                                                                                         | 31 | 1.65 | 1.00 | 1 | 1 | 4 | 0.91 |
| Q8a-7  | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                        | 31 | 3.39 | 4.00 | 4 | 1 | 5 | 1.20 |
| Q8a-8  | Recent PE ratio of the parent company's shares                                                                               | 30 | 2.33 | 2.00 | 1 | 1 | 5 | 1.37 |
| Q8a-9  | Recent transaction prices for acquisitions in the sector                                                                     | 31 | 3.45 | 4.00 | 4 | 1 | 5 | 1.18 |
| Q8a-10 | Responses to attempts to solicit competing offers                                                                            | 31 | 2.52 | 3.00 | 3 | 1 | 5 | 1.06 |
| Q8a-11 | Industry comparables or special 'rule of thumb'                                                                              | 30 | 3.57 | 4.00 | 4 | 1 | 5 | 1.07 |
| Q8a-12 | "Venture capital" method (PE ratio applied to future earnings at time of expected exit and discounted back to present value) | 31 | 3.42 | 3.00 | 3 | 1 | 5 | 1.29 |
| Q8a-13 | Option pricing or similar valuation methods                                                                                  | 30 | 2.33 | 2.00 | 1 | 1 | 5 | 1.15 |
| Q8a-14 | Other (specify:)                                                                                                             | 48 | 1.25 | 1.00 | 1 | 1 | 4 | 0.84 |
| Q8b-1  | Historic cost book value                                                                                                     | 38 | 2.55 | 2.00 | 2 | 1 | 5 | 1.33 |
| Q8b-2  | Replacement value                                                                                                            | 38 | 2.39 | 2.00 | 2 | 1 | 5 | 1.26 |
| Q8b-3  | Cash amount invested to date plus possible premium                                                                           | 38 | 3.32 | 3.66 | 4 | 1 | 5 | 1.23 |
| Q8b-4  | Liquidation value of asset                                                                                                   | 38 | 2.71 | 3.00 | 3 | 1 | 5 | 1.18 |
| Q8b-5  | Discounted future cash flows                                                                                                 | 40 | 4.18 | 4.00 | 5 | 1 | 5 | 0.96 |
| Q8b-6  | Dividend yield basis                                                                                                         | 39 | 1.87 | 2.00 | 2 | 1 | 4 | 0.86 |
| Q8b-7  | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                        | 40 | 3.68 | 4.00 | 3 | 1 | 5 | 1.02 |

|        |                                                                                                                                  |    |      |      |   |   |   |      |
|--------|----------------------------------------------------------------------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q8b-8  | Recent PE ratio of the parent company's shares                                                                                   | 38 | 2.58 | 3.00 | 3 | 1 | 5 | 1.15 |
| Q8b-9  | Recent transaction prices for acquisitions in the sector                                                                         | 39 | 3.64 | 4.00 | 4 | 1 | 5 | 0.96 |
| Q8b-10 | Responses to attempts to solicit competing offers                                                                                | 39 | 2.97 | 3.00 | 4 | 1 | 5 | 1.11 |
| Q8b-11 | Industry comparables or special 'rule of thumb'                                                                                  | 38 | 3.71 | 4.00 | 4 | 1 | 5 | 0.80 |
| Q8b-12 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 40 | 3.73 | 4.00 | 4 | 2 | 5 | 1.01 |
| Q8b-13 | Option pricing or similar valuation methods                                                                                      | 38 | 2.42 | 2.00 | 1 | 1 | 5 | 1.22 |
| Q8b-14 | Other (specify:)                                                                                                                 | 49 | 1.16 | 1.00 | 1 | 1 | 4 | 0.66 |
| Q8c-1  | Historic cost book value                                                                                                         | 44 | 2.61 | 3.00 | 3 | 1 | 5 | 1.30 |
| Q8c-2  | Replacement value                                                                                                                | 44 | 2.66 | 2.83 | 2 | 1 | 5 | 1.29 |
| Q8c-3  | Cash amount invested to date plus possible premium                                                                               | 44 | 2.70 | 3.00 | 3 | 1 | 5 | 1.09 |
| Q8c-4  | Liquidation value of asset                                                                                                       | 43 | 2.84 | 3.00 | 3 | 1 | 5 | 1.25 |
| Q8c-5  | Discounted future cash flows                                                                                                     | 45 | 4.51 | 5.00 | 5 | 2 | 5 | 0.69 |
| Q8c-6  | Dividend yield basis                                                                                                             | 44 | 2.14 | 2.00 | 1 | 1 | 5 | 1.07 |
| Q8c-7  | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 44 | 4.14 | 4.00 | 4 | 1 | 5 | 1.00 |
| Q8c-8  | Recent PE ratio of the parent company's shares                                                                                   | 44 | 3.23 | 3.00 | 3 | 1 | 5 | 1.18 |
| Q8c-9  | Recent transaction prices for acquisitions in the sector                                                                         | 44 | 3.95 | 4.00 | 4 | 1 | 5 | 0.94 |
| Q8c-10 | Responses to attempts to solicit competing offers                                                                                | 44 | 2.93 | 3.00 | 3 | 1 | 4 | 0.97 |

|        |                                                                                                                                  |    |      |      |   |   |   |      |
|--------|----------------------------------------------------------------------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q8c-11 | Industry comparables or special 'rule of thumb'                                                                                  | 44 | 3.73 | 4.00 | 4 | 1 | 5 | 0.87 |
| Q8c-12 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 45 | 3.29 | 3.00 | 3 | 1 | 5 | 1.10 |
| Q8c-13 | Option pricing or similar valuation methods                                                                                      | 43 | 2.05 | 2.00 | 1 | 1 | 4 | 1.07 |
| Q8c-14 | Other (specify:)                                                                                                                 | 51 | 1.00 | 1.00 | 1 | 1 | 1 | 0.00 |
| Q8d-1  | Historic cost book value                                                                                                         | 36 | 2.97 | 3.00 | 3 | 1 | 5 | 1.36 |
| Q8d-2  | Replacement value                                                                                                                | 36 | 2.86 | 3.00 | 3 | 1 | 5 | 1.40 |
| Q8d-3  | Cash amount invested to date plus possible premium                                                                               | 36 | 2.53 | 2.26 | 2 | 1 | 5 | 1.21 |
| Q8d-4  | Liquidation value of asset                                                                                                       | 36 | 2.97 | 3.00 | 3 | 1 | 5 | 1.28 |
| Q8d-5  | Discounted future cash flows                                                                                                     | 36 | 4.58 | 5.00 | 5 | 2 | 5 | 0.69 |
| Q8d-6  | Dividend yield basis                                                                                                             | 36 | 2.33 | 2.17 | 1 | 1 | 5 | 1.17 |
| Q8d-7  | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 36 | 4.08 | 4.00 | 5 | 1 | 5 | 1.05 |
| Q8d-8  | Recent PE ratio of the parent company's shares                                                                                   | 36 | 3.47 | 4.00 | 4 | 1 | 5 | 1.32 |
| Q8d-9  | Recent transaction prices for acquisitions in the sector                                                                         | 36 | 3.92 | 4.00 | 5 | 1 | 5 | 1.05 |
| Q8d-10 | Responses to attempts to solicit competing offers                                                                                | 36 | 2.97 | 3.00 | 3 | 1 | 5 | 1.28 |
| Q8d-11 | Industry comparables or special 'rule of thumb'                                                                                  | 36 | 3.50 | 4.00 | 4 | 1 | 5 | 1.23 |
| Q8d-12 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 37 | 2.97 | 3.00 | 2 | 1 | 5 | 1.24 |

|        |                                                                                                                                  |    |      |      |   |   |   |      |
|--------|----------------------------------------------------------------------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q8d-13 | Option pricing or similar valuation methods                                                                                      | 36 | 1.75 | 1.00 | 1 | 1 | 4 | 0.97 |
| Q8d-14 | Other (specify:)                                                                                                                 | 50 | 1.00 | 1.00 | 1 | 1 | 1 | 0.00 |
| Q8e-1  | Historic cost book value                                                                                                         | 29 | 2.45 | 2.00 | 1 | 1 | 5 | 1.38 |
| Q8e-2  | Replacement value                                                                                                                | 29 | 2.41 | 2.00 | 1 | 1 | 5 | 1.32 |
| Q8e-3  | Cash amount invested to date plus possible premium                                                                               | 29 | 2.66 | 3.00 | 3 | 1 | 5 | 1.32 |
| Q8e-4  | Liquidation value of asset                                                                                                       | 29 | 2.38 | 2.00 | 2 | 1 | 5 | 1.27 |
| Q8e-5  | Discounted future cash flows                                                                                                     | 30 | 4.57 | 5.00 | 5 | 2 | 5 | 0.73 |
| Q8e-6  | Dividend yield basis                                                                                                             | 29 | 2.10 | 2.00 | 1 | 1 | 5 | 1.01 |
| Q8e-7  | Capitalised sustainable earnings (e.g. historic or prospective price/earnings ratio or EBIT multiple)                            | 29 | 4.10 | 4.00 | 4 | 1 | 5 | 0.98 |
| Q8e-8  | Recent PE ratio of the parent company's shares                                                                                   | 29 | 3.28 | 3.00 | 3 | 1 | 5 | 1.22 |
| Q8e-9  | Recent transaction prices for acquisitions in the sector                                                                         | 29 | 3.93 | 4.00 | 5 | 1 | 5 | 1.03 |
| Q8e-10 | Responses to attempts to solicit competing offers                                                                                | 29 | 2.90 | 3.00 | 4 | 1 | 5 | 1.29 |
| Q8e-11 | Industry comparables or special 'rule of thumb'                                                                                  | 29 | 3.55 | 4.00 | 3 | 1 | 5 | 1.06 |
| Q8e-12 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 30 | 3.00 | 3.00 | 2 | 1 | 5 | 1.31 |
| Q8e-13 | Option pricing or similar valuation methods                                                                                      | 28 | 1.82 | 1.91 | 1 | 1 | 4 | 0.98 |
| Q8e-14 | Other (specify:)                                                                                                                 | 49 | 1.00 | 1.00 | 1 | 1 | 1 | 0.00 |
| Q9a    | Use the highest valuation                                                                                                        | 49 | 1.59 | 1.00 | 1 | 1 | 3 | 0.73 |
| Q9b    | Use the lowest valuation                                                                                                         | 49 | 2.43 | 3.00 | 3 | 1 | 5 | 1.12 |

|     |                                                                                      |    |      |      |   |   |   |      |
|-----|--------------------------------------------------------------------------------------|----|------|------|---|---|---|------|
| Q9c | Use some form of 'averaging' (such as the mode, mean or median of the valuations)    | 49 | 2.78 | 3.00 | 4 | 1 | 5 | 1.26 |
| Q9d | Place greatest weight on one particular method                                       | 49 | 4.06 | 4.00 | 4 | 1 | 5 | 0.92 |
| Q9e | Use 'gut feel' or intuition                                                          | 49 | 3.33 | 3.00 | 3 | 1 | 5 | 1.21 |
| Q9f | Try and resolve the differences in the methods by understanding the reasons therefor | 50 | 3.80 | 4.00 | 4 | 1 | 5 | 1.07 |

Table 25. Frequency distribution of companies by rating scale (1-5)\*

\* 5 = "very important"... 1 = "least important"

| Item No. | Description                                                | Rating/scale |    |    |    |    | Total |
|----------|------------------------------------------------------------|--------------|----|----|----|----|-------|
|          |                                                            | 1            | 2  | 3  | 4  | 5  |       |
| Q2-3a    | Seed capital investment                                    | 34           | 10 | 6  | 0  | 1  | 51    |
| Q2-3b    | Early stage/start-up investment                            | 15           | 11 | 15 | 5  | 5  | 51    |
| Q2-3c    | Development/expansion                                      | 14           | 11 | 13 | 10 | 3  | 51    |
| Q2-3d    | Management buyout (MBO)                                    | 36           | 8  | 2  | 5  | 0  | 51    |
| Q2-3e    | Management buy-in (MBI)                                    | 47           | 3  | 1  | 0  | 0  | 51    |
| Q2-3f    | Secondary purchase/replacement                             | 38           | 8  | 3  | 2  | 0  | 51    |
| Q5a-1    | Is capable of sustained, intense effort                    | 0            | 0  | 2  | 15 | 34 | 51    |
| Q5a-2    | Is able to evaluate and react to risk well                 | 0            | 0  | 1  | 25 | 25 | 51    |
| Q5a-3    | Is articulate in discussing his/her venture                | 0            | 3  | 16 | 23 | 9  | 51    |
| Q5a-4    | Attends to detail                                          | 0            | 0  | 17 | 25 | 9  | 51    |
| Q5a-5    | Has good personal "chemistry" with you                     | 0            | 1  | 17 | 19 | 14 | 51    |
| Q5a-6    | Has a good relevant formal education                       | 6            | 9  | 26 | 9  | 1  | 51    |
| Q5a-7    | Has good judgement                                         | 0            | 0  | 2  | 18 | 31 | 51    |
| Q5a-8    | Has integrity                                              | 0            | 0  | 0  | 5  | 46 | 51    |
| Q5a-9    | Displays strategic vision                                  | 0            | 0  | 4  | 20 | 27 | 51    |
| Q5a-910  | Was referred to me by a trustworthy source                 | 3            | 8  | 22 | 16 | 2  | 51    |
| Q5a-911  | Has a significant investment or stake                      | 0            | 0  | 4  | 15 | 32 | 51    |
| Q5b-1    | Is thoroughly familiar with the market targeted by venture | 0            | 0  | 1  | 16 | 34 | 51    |
| Q5b-2    | Has demonstrated leadership/managerial ability in the past | 1            | 0  | 6  | 26 | 18 | 51    |
| Q5b-3    | Has a track record relevant to venture                     | 0            | 0  | 9  | 26 | 16 | 51    |
| Q5b-4    | Good references are available on the entrepreneur          | 0            | 1  | 7  | 21 | 22 | 51    |

|       |                                                                           |    |    |    |    |    |    |
|-------|---------------------------------------------------------------------------|----|----|----|----|----|----|
| Q5b-5 | Has good relevant business and industry experience                        | 0  | 2  | 5  | 22 | 21 | 50 |
| Q5c-1 | Has proprietary intellectual property                                     | 3  | 3  | 14 | 17 | 14 | 51 |
| Q5c-2 | Has a good lead-time on the market competition                            | 2  | 3  | 7  | 30 | 9  | 51 |
| Q5c-3 | Enjoys demonstrated market acceptance                                     | 1  | 2  | 17 | 22 | 9  | 51 |
| Q5c-4 | Has been developed to the point of a functioning prototype                | 4  | 5  | 7  | 14 | 20 | 50 |
| Q5c-5 | May be described as "high tech"                                           | 10 | 11 | 15 | 9  | 6  | 51 |
| Q5d-1 | Enjoys a significant growth rate                                          | 0  | 0  | 7  | 24 | 20 | 51 |
| Q5d-2 | The venture is in an industry with which I am familiar                    | 3  | 12 | 14 | 14 | 8  | 51 |
| Q5d-3 | The venture is in an industry in which I wish to invest                   | 0  | 2  | 6  | 23 | 20 | 51 |
| Q5d-4 | There are good barriers to entry                                          | 0  | 0  | 13 | 24 | 14 | 51 |
| Q5d-5 | Little threat of competition during the initial investment period         | 0  | 6  | 20 | 22 | 3  | 51 |
| Q5d-6 | Will create a new market                                                  | 6  | 13 | 25 | 7  | 0  | 51 |
| Q5d-7 | Is mature                                                                 | 11 | 17 | 17 | 6  | 0  | 51 |
| Q5d-8 | Potential for overseas markets                                            | 2  | 3  | 12 | 18 | 16 | 51 |
| Q5d-9 | Is large                                                                  | 4  | 13 | 14 | 11 | 8  | 50 |
| Q5e-1 | Distribution system/channels                                              | 1  | 2  | 16 | 24 | 8  | 51 |
| Q5e-2 | Production techniques/facilities                                          | 3  | 3  | 18 | 24 | 3  | 51 |
| Q5e-3 | Entrepreneur has gained control of key resources                          | 0  | 2  | 4  | 28 | 16 | 50 |
| Q5e-4 | General employees are of good quality                                     | 0  | 1  | 4  | 33 | 13 | 51 |
| Q5e-5 | Existence of a suitable employee incentive scheme                         | 5  | 4  | 16 | 19 | 7  | 51 |
| Q5f-1 | Meets 'key' financial ratio benchmarks                                    | 3  | 5  | 11 | 22 | 10 | 51 |
| Q5f-2 | A coherent and thorough business plan                                     | 0  | 0  | 10 | 20 | 21 | 51 |
| Q5f-3 | An investment that can be easily made liquid (e.g. IPO)                   | 1  | 5  | 10 | 15 | 20 | 51 |
| Q5f-4 | Investments must require funding above a defined minimum size             | 4  | 7  | 6  | 21 | 12 | 50 |
| Q5f-5 | The venture is already profitable or cash flow positive                   | 9  | 8  | 22 | 6  | 6  | 51 |
| Q5f-6 | The expected % shareholding falls within a given range                    | 3  | 2  | 15 | 19 | 12 | 51 |
| Q5f-7 | Financial control systems are in a good state                             | 3  | 3  | 11 | 22 | 12 | 51 |
| Q5f-8 | You are able to add value to the investee beyond merely providing capital | 0  | 1  | 7  | 21 | 22 | 51 |
| Q5f-9 | There is an independent co-investor                                       | 17 | 21 | 11 | 1  | 1  | 51 |
| Q6a   | Secondary purchase/replacement                                            | 6  | 13 | 20 | 10 | 1  | 50 |

|         |                                                                      |    |    |    |    |    |    |
|---------|----------------------------------------------------------------------|----|----|----|----|----|----|
| Q6b     | Management buyout (MBO)                                              | 5  | 5  | 10 | 17 | 13 | 50 |
| Q6c     | Management buy-in (MBI)                                              | 2  | 9  | 17 | 14 | 8  | 50 |
| Q6d     | Development/expansion                                                | 0  | 2  | 6  | 25 | 18 | 51 |
| Q6e     | Early stage/start-up investment                                      | 6  | 11 | 14 | 11 | 9  | 51 |
| Q6f     | Seed capital investment                                              | 27 | 7  | 8  | 4  | 4  | 50 |
| Q7a-1   | We require the investment to meet a standard required rate of return | 10 | 7  | 7  | 13 | 14 | 51 |
| Q7a-2   | We require the investment to meet a standard required                | 4  | 6  | 4  | 14 | 23 | 51 |
| Q7a-3   | We require the investment to meet a specific required rate of return | 3  | 6  | 6  | 21 | 14 | 50 |
| Q7a-4   | We require the funding structure to meet standard gearing ratios     | 14 | 11 | 15 | 9  | 2  | 51 |
| Q7a-5   | We require the funding structure to meet standard gearing ratios     | 5  | 3  | 24 | 12 | 7  | 51 |
| Q7a-6   | We require the funding structure to meet gearing ratios              | 3  | 1  | 12 | 22 | 13 | 51 |
| Q7a-7   | We require a rate of return which yields a total cash return         | 5  | 3  | 12 | 16 | 15 | 51 |
| Q7b-1   | Market conditions relating to a particular proposal                  | 0  | 0  | 3  | 14 | 34 | 51 |
| Q7b-2   | General economic conditions                                          | 1  | 4  | 22 | 19 | 5  | 51 |
| Q7b-3   | Changes in prices for quoted equities                                | 2  | 3  | 22 | 19 | 3  | 49 |
| Q7b-4   | Quantity of inflow of funds into the VC/private equity market        | 10 | 17 | 16 | 7  | 0  | 50 |
| Q7b-5   | Changes in returns for long-term gilts                               | 14 | 9  | 20 | 5  | 2  | 50 |
| Q7b-6   | Changes in the prime rate                                            | 7  | 8  | 18 | 15 | 2  | 50 |
| Q7b-7   | The state of the industrial/product sector of the investment         | 2  | 1  | 9  | 23 | 15 | 50 |
| Q7b-8   | Expected length of time to exit from the investment                  | 0  | 1  | 10 | 21 | 18 | 50 |
| Q7b-9   | Degree of participation of existing shareholders in this round       | 0  | 2  | 14 | 19 | 16 | 51 |
| Q7b-910 | Actual cash amount you seek to receive from the investment           | 1  | 3  | 8  | 31 | 8  | 51 |
| Q7b-911 | Degree of planning and strategy for exit from the investment         | 0  | 4  | 8  | 23 | 16 | 51 |
| Q7b-912 | Liquidity of the investment                                          | 1  | 6  | 15 | 17 | 12 | 51 |
| Q7b-913 | Possibility of a total write-off of the investment if it fails       | 0  | 2  | 8  | 26 | 14 | 50 |
| Q7b-914 | Geographic distance from the investment                              | 3  | 6  | 16 | 21 | 5  | 51 |
| Q7b-915 | Expected gearing ratio                                               | 0  | 9  | 19 | 19 | 4  | 51 |
| Q7b-916 | Whether you (and the institutional syndicate, where appropriate)     | 12 | 15 | 18 | 5  | 1  | 51 |
| Q7b-917 | Quality and robustness of corporate governance                       | 1  | 0  | 8  | 25 | 17 | 51 |
| Q7b-918 | Competitiveness of the market                                        | 0  | 0  | 4  | 31 | 16 | 51 |

|         |                                                                                                                                  |    |    |    |    |    |    |
|---------|----------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|
| Q7b-919 | Small size of the required investment (in Rand terms)                                                                            | 4  | 4  | 21 | 17 | 5  | 51 |
| Q7b-920 | Large size of the required investment (in Rand terms)                                                                            | 2  | 4  | 22 | 19 | 4  | 51 |
| Q7b-921 | Expected amount of post-deal re-organisation                                                                                     | 2  | 2  | 11 | 25 | 11 | 51 |
| Q7b-922 | Round of investment (e.g. first, follow-on)                                                                                      | 1  | 5  | 16 | 26 | 2  | 50 |
| Q7b-923 | Extent to which funding must be advanced up front or whether it can be done in tranches upon achievement of milestones           | 2  | 5  | 13 | 21 | 10 | 51 |
| Q7b-924 | Book value-to-market value ratio                                                                                                 | 7  | 12 | 19 | 13 | 0  | 51 |
| Q7b-925 | Quality of managerial skills                                                                                                     | 0  | 0  | 2  | 8  | 41 | 51 |
| Q7b-926 | Predictability or unpredictability of behaviour of the entrepreneur                                                              | 0  | 0  | 0  | 17 | 34 | 51 |
| Q7b-927 | Level of financial contribution by management                                                                                    | 0  | 0  | 7  | 19 | 25 | 51 |
| Q7b-928 | Expected dividend yield                                                                                                          | 13 | 19 | 15 | 3  | 1  | 51 |
| Q8a-1   | Historic cost book value                                                                                                         | 14 | 4  | 3  | 9  | 0  | 30 |
| Q8a-2   | Replacement value                                                                                                                | 13 | 5  | 6  | 4  | 2  | 30 |
| Q8a-3   | Cash amount invested to date plus possible premium                                                                               | 4  | 3  | 7  | 9  | 7  | 30 |
| Q8a-4   | Liquidation value of asset                                                                                                       | 10 | 5  | 6  | 5  | 3  | 29 |
| Q8a-5   | Discounted future cash flows                                                                                                     | 3  | 1  | 3  | 11 | 14 | 32 |
| Q8a-6   | Dividend yield basis                                                                                                             | 19 | 5  | 6  | 1  | 0  | 31 |
| Q8a-7   | Capitalised sustainable earnings (e.g. historic or prospective price/ earnings ratio or EBIT multiple)                           | 2  | 6  | 7  | 10 | 6  | 31 |
| Q8a-8   | Recent PE ratio of the parent company's shares                                                                                   | 11 | 8  | 4  | 4  | 3  | 30 |
| Q8a-9   | Recent transaction prices for acquisitions in the sector                                                                         | 1  | 7  | 7  | 9  | 7  | 31 |
| Q8a-910 | Responses to attempts to solicit competing offers                                                                                | 6  | 9  | 11 | 4  | 1  | 31 |
| Q8a-911 | Industry comparables or special 'rule of thumb'                                                                                  | 1  | 4  | 8  | 11 | 6  | 30 |
| Q8a-912 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 2  | 6  | 9  | 5  | 9  | 31 |
| Q8a-913 | Option pricing or similar valuation methods                                                                                      | 9  | 8  | 8  | 4  | 1  | 30 |
| Q8a-914 | Other (specify:)                                                                                                                 | 44 | 0  | 0  | 4  | 0  | 48 |
| Q8b-1   | Historic cost book value                                                                                                         | 10 | 11 | 7  | 6  | 4  | 38 |
| Q8b-2   | Replacement value                                                                                                                | 11 | 12 | 7  | 5  | 3  | 38 |
| Q8b-3   | Cash amount invested to date plus possible premium                                                                               | 5  | 3  | 11 | 13 | 6  | 38 |
| Q8b-4   | Liquidation value of asset                                                                                                       | 6  | 11 | 13 | 4  | 4  | 38 |
| Q8b-5   | Discounted future cash flows                                                                                                     | 1  | 1  | 6  | 14 | 18 | 40 |

|         |                                                                                                                                  |    |    |    |    |    |    |
|---------|----------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|
| Q8b-6   | Dividend yield basis                                                                                                             | 15 | 16 | 6  | 2  | 0  | 39 |
| Q8b-7   | Capitalised sustainable earnings (e.g. historic or prospective price/ earnings ratio or EBIT multiple)                           | 2  | 1  | 14 | 14 | 9  | 40 |
| Q8b-8   | Recent PE ratio of the parent company's shares                                                                                   | 8  | 10 | 12 | 6  | 2  | 38 |
| Q8b-9   | Recent transaction prices for acquisitions in the sector                                                                         | 1  | 4  | 9  | 19 | 6  | 39 |
| Q8b-910 | Responses to attempts to solicit competing offers                                                                                | 6  | 5  | 13 | 14 | 1  | 39 |
| Q8b-911 | Industry comparables or special 'rule of thumb'                                                                                  | 1  | 1  | 10 | 22 | 4  | 38 |
| Q8b-912 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 0  | 5  | 12 | 12 | 11 | 40 |
| Q8b-913 | Option pricing or similar valuation methods                                                                                      | 11 | 10 | 9  | 6  | 2  | 38 |
| Q8b-914 | Other (specify:)                                                                                                                 | 46 | 0  | 1  | 2  | 0  | 49 |
| Q8c-1   | Historic cost book value                                                                                                         | 11 | 10 | 13 | 5  | 5  | 44 |
| Q8c-2   | Replacement value                                                                                                                | 9  | 13 | 12 | 4  | 6  | 44 |
| Q8c-3   | Cash amount invested to date plus possible premium                                                                               | 7  | 11 | 16 | 8  | 2  | 44 |
| Q8c-4   | Liquidation value of asset                                                                                                       | 7  | 11 | 12 | 8  | 5  | 43 |
| Q8c-5   | Discounted future cash flows                                                                                                     | 0  | 1  | 2  | 15 | 27 | 45 |
| Q8c-6   | Dividend yield basis                                                                                                             | 16 | 11 | 13 | 3  | 1  | 44 |
| Q8c-7   | Capitalised sustainable earnings (e.g. historic or prospective price/ earnings ratio or EBIT multiple)                           | 2  | 1  | 4  | 19 | 18 | 44 |
| Q8c-8   | Recent PE ratio of the parent company's shares                                                                                   | 6  | 2  | 18 | 12 | 6  | 44 |
| Q8c-9   | Recent transaction prices for acquisitions in the sector                                                                         | 1  | 1  | 11 | 17 | 14 | 44 |
| Q8c-910 | Responses to attempts to solicit competing offers                                                                                | 5  | 7  | 18 | 14 | 0  | 44 |
| Q8c-911 | Industry comparables or special 'rule of thumb'                                                                                  | 2  | 0  | 12 | 24 | 6  | 44 |
| Q8c-912 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 2  | 9  | 15 | 12 | 7  | 45 |
| Q8c-913 | Option pricing or similar valuation methods                                                                                      | 17 | 13 | 7  | 6  | 0  | 43 |
| Q8c-914 | Other (specify:)                                                                                                                 | 51 | 0  | 0  | 0  | 0  | 51 |
| Q8d-1   | Historic cost book value                                                                                                         | 7  | 6  | 10 | 7  | 6  | 36 |
| Q8d-2   | Replacement value                                                                                                                | 8  | 7  | 9  | 6  | 6  | 36 |
| Q8d-3   | Cash amount invested to date plus possible premium                                                                               | 8  | 11 | 10 | 4  | 3  | 36 |
| Q8d-4   | Liquidation value of asset                                                                                                       | 6  | 6  | 12 | 7  | 5  | 36 |
| Q8d-5   | Discounted future cash flows                                                                                                     | 0  | 1  | 1  | 10 | 24 | 36 |

|         |                                                                                                                                  |    |    |    |    |    |    |
|---------|----------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|
| Q8d-6   | Dividend yield basis                                                                                                             | 12 | 7  | 11 | 5  | 1  | 36 |
| Q8d-7   | Capitalised sustainable earnings (e.g. historic or prospective price/ earnings ratio or EBIT multiple)                           | 1  | 3  | 3  | 14 | 15 | 36 |
| Q8d-8   | Recent PE ratio of the parent company's shares                                                                                   | 5  | 2  | 9  | 11 | 9  | 36 |
| Q8d-9   | Recent transaction prices for acquisitions in the sector                                                                         | 1  | 2  | 9  | 11 | 13 | 36 |
| Q8d-910 | Responses to attempts to solicit competing offers                                                                                | 7  | 4  | 12 | 9  | 4  | 36 |
| Q8d-911 | Industry comparables or special 'rule of thumb'                                                                                  | 4  | 2  | 10 | 12 | 8  | 36 |
| Q8d-912 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 4  | 11 | 9  | 8  | 5  | 37 |
| Q8d-913 | Option pricing or similar valuation methods                                                                                      | 20 | 7  | 7  | 2  | 0  | 36 |
| Q8d-914 | Other (specify:)                                                                                                                 | 50 | 0  | 0  | 0  | 0  | 50 |
| Q8e-1   | Historic cost book value                                                                                                         | 10 | 6  | 6  | 4  | 3  | 29 |
| Q8e-2   | Replacement value                                                                                                                | 9  | 8  | 6  | 3  | 3  | 29 |
| Q8e-3   | Cash amount invested to date plus possible premium                                                                               | 7  | 7  | 7  | 5  | 3  | 29 |
| Q8e-4   | Liquidation value of asset                                                                                                       | 8  | 10 | 6  | 2  | 3  | 29 |
| Q8e-5   | Discounted future cash flows                                                                                                     | 0  | 1  | 1  | 8  | 20 | 30 |
| Q8e-6   | Dividend yield basis                                                                                                             | 10 | 8  | 10 | 0  | 1  | 29 |
| Q8e-7   | Capitalised sustainable earnings (e.g. historic or prospective price/ earnings ratio or EBIT multiple)                           | 1  | 1  | 3  | 13 | 11 | 29 |
| Q8e-8   | Recent PE ratio of the parent company's shares                                                                                   | 3  | 4  | 9  | 8  | 5  | 29 |
| Q8e-9   | Recent transaction prices for acquisitions in the sector                                                                         | 1  | 1  | 7  | 10 | 10 | 29 |
| Q8e-910 | Responses to attempts to solicit competing offers                                                                                | 5  | 7  | 6  | 8  | 3  | 29 |
| Q8e-911 | Industry comparables or special 'rule of thumb'                                                                                  | 1  | 3  | 10 | 9  | 6  | 29 |
| Q8e-912 | "Venture capital" method (PE ratio applied to future earnings at the time of expected exit and discounted back to present value) | 4  | 8  | 7  | 6  | 5  | 30 |
| Q8e-913 | Option pricing or similar valuation methods                                                                                      | 14 | 7  | 5  | 2  | 0  | 28 |
| Q8e-914 | Other (specify:)                                                                                                                 | 49 | 0  | 0  | 0  | 0  | 49 |
| Q9a     | Use the highest valuation                                                                                                        | 27 | 15 | 7  | 0  | 0  | 49 |
| Q9b     | Use the lowest valuation                                                                                                         | 13 | 11 | 18 | 5  | 2  | 49 |
| Q9c     | Use some form of 'averaging' (such as the mode, mean or median of the valuations)                                                | 10 | 11 | 12 | 12 | 4  | 49 |

|     |                                                                                      |   |   |    |    |    |    |
|-----|--------------------------------------------------------------------------------------|---|---|----|----|----|----|
| Q9d | Place greatest weight on one particular method                                       | 2 | 1 | 4  | 27 | 15 | 49 |
| Q9e | Use 'gut feel' or intuition                                                          | 5 | 6 | 15 | 14 | 9  | 49 |
| Q9f | Try and resolve the differences in the methods by understanding the reasons therefor | 2 | 5 | 7  | 23 | 13 | 50 |

## APPENDIX\*

### 1. Elementary Concepts - What is "Statistical Significance" (p-level)?

The statistical significance of a result is an estimated measure of the degree to which it is "true" (in the sense of "representative of the population"). More technically, the value of the p-level (the term first used by Brownlee, 1960) represents a decreasing index of the reliability of a result. The higher the p-level, the less we can believe that the observed relation between variables in the sample is a reliable indicator of the relation between the respective variables in the population. Specifically, the p-level represents the probability of error that is involved in accepting our observed result as valid, that is, as "representative of the population." For example, a p-level of .05 (i.e., 1/20) indicates that there is a 5% probability that the relation between the variables found in our sample is a "fluke." In other words, assuming that in the population there was no relation between those variables whatsoever, and we were repeating experiments like ours one after another, we could expect that approximately in every 20 replications of the experiment there would be one in which the relation between the variables in question would be equal or stronger than in ours. In many areas of research, the p-level of .05 is customarily treated as a "border-line acceptable" error level.

### 2. Elementary Concepts - How to Determine that a Result is "Really" Significant

There is no way to avoid arbitrariness in the final decision as to what level of significance will be treated as really "significant." That is, the selection of some level of significance, up to which the results will be rejected as invalid, is arbitrary. In practice, the final decision usually depends on whether the outcome was predicted a priori or only found post hoc in the course of many analyses and comparisons performed on the data set, on the total amount of consistent supportive evidence in the entire data set, and on "traditions" existing in the particular area of research. Typically, in many sciences, results that yield  $p \leq .05$  are considered borderline statistically significant but remember that this level of significance still involves a pretty high probability of error (5%). Results that are significant at the  $p \leq .01$  level are commonly considered statistically significant, and  $p \leq .005$  or  $p \leq .001$  levels are often called "highly" significant. But remember that those classifications represent nothing else but arbitrary conventions that are only informally based on general research experience.

\* Source: *STATISTICA '99 edition, On-line Help Manual*

**ANNEXURE 7.6**

**RISK PREMIA COMPONENT FOR COMPARATIVE INTERNATIONAL REQUIRED RATES OF RETURN**

| <b>REQUIRED MEDIAN RISK PREMIA PER INVESTMENT STAGE FOR INTERNATIONAL COMPARISONS</b> |                  |                      |                          |                            |
|---------------------------------------------------------------------------------------|------------------|----------------------|--------------------------|----------------------------|
| <b>MEDIAN OF REQUIRED IRRs</b>                                                        | <b>UK (1994)</b> | <b>FRANCE (1995)</b> | <b>BELGIUM/NL (1995)</b> | <b>SOUTH AFRICA (2000)</b> |
| Overall (all stages)                                                                  | 22%*             | 17%                  | 8%                       | 16%*                       |
| Seed/start-up/early                                                                   | 34-47%           | 28-47%               | 24-28%                   | 42-56%                     |
| Expansion/development                                                                 | 18-22%           | 13-17%               | 14-18%                   | 22-31%                     |
| MBO                                                                                   | 23-27%           | 18-22%               | 14-18%                   | 17-21%                     |
| MBI                                                                                   | 23-27%           | 18-22%               | 14-18%                   | 17-21%                     |
| Secondary                                                                             | Not asked        | 18-22%               | <13%                     | 17-21%                     |
| Risk-free rate:                                                                       | 8.20%            | 7.60%                | 7.20%                    | 13.80%                     |

**Risk premia for international comparisons:**

Nominal median required rate of return less the mean of the monthly closes of the national long bond rate over 1 calendar year.

\*The mean risk premium for both the UK and SA is 21%.