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Do Serial and Non-Serial Investors Behave Differently?: An Empirical and Theoretical Analysis

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This research investigates the differences between experienced private investors ('serial angels') in the UK, who have funded three or more unquoted ventures, and their less experienced counterparts ('non-serial angels'). Using a theoretical base and data on 141 business angels, this study tentatively concludes that, relative to non-serial angels, serial angels may be less concerned with agency risks and more concerned with market risks. In particular, serial angels limit their investments more to (and conduct slightly more research on) industry sectors in which they have personal experience, prefer markets with less competition, choose to co-invest, are slightly less involved in their investments, and are less concerned with the location of the venture.

Internationally, the economic importance of small entrepreneurial firms has been widely recognized. In the US and other major industrial nations a transition has occurred from decaying industrial economies to emerging entrepreneurial economies (Wetzel, 1996). "In the US, from 1979 to 1995, while Fortune 500 payrolls declined by over 4 million jobs, the entrepreneurial economy generated over 24 million jobs. About seventy-five percent of these jobs were created by fewer than 10% of small firms." (Freear, Sohl, & Wetzel, 1997, p. 47) Likewise in the UK, small firms are a major economic force and have been the subject of some recent policy initiatives. But all small firms are not alike. The small minority of firms that have such economic potential are entrepreneurial ventures that can be distinguished from the others by their growth potential rather than size. Because they have a vision of rapid growth of at least 20% annually, they are able to attract external suppliers of equity capital (Wetzel & Freear, 1994).

Despite their considerable potential, these entrepreneurial firms often have difficulties obtaining outside equity capital. Because they are often in the early stage of development and have little or no track record or collateral, they are seen as risky investments by banks and other lending institutions (Mason & Harrison, 1996). For venture capital firms, these firms are also unappealing since their funding requirements are well below the venture capitalist's minimum investment threshold. Furthermore, they also require too much active hand-holding, their returns are risky and uncertain, and any foreseeable exit route at the time of investment is unlikely (Gupta & Sapienza, 1988; Norton, 1995).

Primarily due to the reluctance of banks and venture capital firms to fund early-stage entrepreneurial firms, an equity gap exists for their funding (Freear et al., 1997; Mason, 1996a).

The Importance of Business Angels

Business angels (also known as private equity investors) are the primary source of finance that is attempting to fill this equity gap (Coveney & Moore, 1997; Harrison & Mason, 1996; Wetzel & Freear, 1994). They are private individuals who have substantial sums of finance available to fund entrepreneurial firms.

The potential of business angels and the informal venture capital market is enormous. They have been identified as the largest single source of risk capital for entrepreneurial companies, far exceeding the venture capital industry (Wetzel, 1993; Wetzel & Freear, 1994; Mason & Harrison, 1993). In the US, it is estimated that business angels finance 30-40 times as many firms as the institutional venture capital community (Gaston, 1989; Wetzel & Freear, 1994). Business angels invest around $10-20bn per annum in around 30,000 businesses, whereas venture capitalists fund around $3-4bn per annum in around 3,000 businesses (Wetzel, 1996). Similarly in the UK, business angels are estimated to invest about £2bn per annum in small entrepreneurial firms, compared to about £1bn per annum for the institutional venture capital market (Mason & Harrison, 1992, 1993). However, more recent research shows that the amount provided by business angels may be significantly greater than these estimates (Van Osnabrugge, 1998; Stevenson & Coveney, 1994). But, due to the invisibility of the business angel marketplace, these are only 'ball park' estimates and should not be regarded as definitive (Freear et al., 1997; Mason, 1996b).

In addition to the already greater influence of the informal venture capital market over the formal venture capital market, business angels have even greater unutilized finance potential than these figures suggest (Mason & Harrison, 1993, Coveney & Moore, 1997). Research shows that angels have up to three times more capital available for investment than what they have already invested, but what primarily restricts them is the availability of good investment opportunities and the right policy incentives (Mason & Harrison, 1993; Freear et al., 1997; Stevenson & Coveney, 1994). Even though business angels have substantial financial power, it is their hands-on involvement and sharing of business expertise that makes them an especially valuable asset to entrepreneurs (Wetzel, 1983).

Despite their importance, business angels are still not fully understood. It is hoped that through a greater understanding of the attitudes, behaviors, and characteristics of business angels it may be possible to gain insights into ways of harnessing some of their untapped potential so that this may aid the entrepreneurial economy by putting these resources to work for entrepreneurs (Freear et al., 1997).

One key conclusion that has emerged from previous research on business angels is that they do not constitute a homogeneous group (Coveney & Moore, 1997). The remainder of this article will use theory and UK data to consider one of the most important dimensions by which active angels differ—the number of investments they make.

The Importance of Serial Angels

A number of studies have researched this diversity and identified different types of business angels (Stevenson & Coveney, 1994; Kelly & Hay, 1996a, b). But despite this work, little is known about the characteristics and behaviors of the most active segment of the business angels market—serial angels. These investors differ from non-serial angels in that they have made three or more investments in young unquoted companies, whereas the latter have made two or less.

Although serial angels represent a minority of business angels, they have a sizable influence on entrepreneurial ventures and the market for entrepreneurial finance and therefore, warrant further investigation. In particular, this research study concentrates exclusively on serial angels for several reasons. Firstly, in all likelihood, these investors probably account for a disproportionately large percentage of actual investment activity (Kelly & Hay, 1996a, b). Secondly, gaining greater understanding of the most active segment of the informal venture capital market may serve to stimulate additional investment activity from relatively inactive investors (Kelly & Hay, 1996a, b). Thirdly, since serial investors are usually experienced investors, it may be reasonable to suggest that experience effects may be operating and thus we may be able to learn from them (Kelly & Hay, 1996a, b). In particular, the investment experience of serial investors may enable them to:

choose safer and better investment opportunities; negotiate a fair investment deal more effectively; write better investment contracts; and monitor less actively but still as effectively.

Thus far, only one study has investigated serial angels and this was by means of an exploratory study with eight investors (Kelly & Hay, 1996a, b). Although this exploratory study rendered some valuable insight into the topic, further questions still remain.

THEORETICAL BACKGROUND

Inherent in the nature of small entrepreneurial firms is considerable uncertainty and risk (Pettit & Singer, 1985). Because small firms have a high failure rate, highly uncertain growth potential, potential management problems that impose additional monitoring costs, and provide risks that are not commensurate with returns, they are often unattractive equity investments for investors (Landstrom, 1992). In particular, when investing in a new venture, two primary types of risk are evident: market risk and agency risk (Fiet, 1991; Hart, 1995).

Market Risk and Agency Risk

Market risk is the degree of uncertainty associated with unforeseen competitive conditions. This may depend on size, growth, accessibility of the market, and on the existence of a market need (Fiet, 1991, 1995a, b). Although market risk is not always directly observable, the following factors can serve as good indicators: technical obsolescence; many competitors; many potentially new competitors; many substitute products/services; weak customer demand for a product or service; and market attractiveness (Fiet, 1995a, Porter, 1980). Thus, the variables indicative of market risk mirror those presented by Michael Porter in his five forces model for competitive advantage (Porter, 1980).

Agency risk, however, is risk that is caused by the possibility of divergent interests between fund providers and the entrepreneur running the firm (Jensen & Meckling, 1976; Fiet, 1995a). When the interests and incentives of the entrepreneur differ from those of the fund providers (business angels), the entrepreneur may be seen as making decisions that the business angels may not believe are in their mutual interest (Jensen & Meckling, 1976; Fama & Jensen, 1983). Agency problems tend to arise particularly in small firms because their levels of asymmetries of information, the differences in knowledge available to entrepreneurs and outside equity providers, are greater. The greater these asymmetries are, the easier it is for the entrepreneur to make decisions to the detriment of the outside fund providers (Landstrom, 1992; Jensen & Meckling, 1976).

Controlling Market Risk and Agency Risk

According to classical finance theory, market risk, the risk associated with unforeseen competitive conditions in the market and business environment, can be reduced by holding a diversified portfolio of investments (Wagner & Lau, 1971). Doing so largely eliminates the unique risk of each investment, although the systematic market risk of the portfolio will still be evident (Ross, 1978; Roll & Ross, 1994). Under this assumption, we might expect business angels to prefer a portfolio of investments that is diversified across industry segments and development stages (Gupta & Sapienza, 1988). Holding such a portfolio would significantly decrease the diversifiable market risk of each investment opportunity and the investor's primary effort could then be spent on the selection of investments (which complement the diversified nature of the portfolio) rather than on active participation in these portfolio firms (which may not be deemed to affect the portfolio returns) (Wagner & Lau, 1971; Kelly & Hay, 1996b).

Conversely, agency risk, which is largely dependent upon the divergent views between the investor and the entrepreneur, may be reduced through two primary approaches: 1) formulating contractual agreements that align the incentives of the fund provider with those of the entrepreneur; and 2) monitoring by the fund provider (business angel) of the entrepreneur's activities and expenditures (Jensen & Meckling, 1976). These contracts (written or unwritten) usually specify the rights of the entrepreneur, the performance criteria upon which the entrepreneur will be evaluated, and the payoff functions they face (Fama & Jensen, 1983). The thoroughness of these contractual agreements, in turn, determines the level of monitoring undertaken by the fund provider. Since contracts can never incorporate all future contingencies (i.e. contracts are never perfect), there will always be some degree of monitoring (Hart, 1995).

In addition to these two ways of reducing agency risk, the informal venture capital literature suggests that business angels can limit their investments to entrepreneurs or investment referrers, they know personally (Haar, Starr, & MacMillan, 1988; Harrison & Mason, 1991; Landstrom 1990; Kelly & Hay, 1996a, b). Unfortunately, in this study no direct information was acquired on this particular aspect, especially because most of the business angels interviewed for this study used a business introduction service to locate the investment opportunity.

Clearly, investors will try to reduce both market and agency risks by utilizing information (general and deal-specific) and the expertise they have acquired over the years. Fiet (1995a) suggests that the importance an investor may attach to a particular type of risk could be inversely related to that investor's ability and competence to control that type of risk. Therefore, it is possible that the type of risk that an investor may evaluate more is the risk that he/she wants to avoid. For example, if an investor has greater ability in monitoring the entrepreneur, rather than in screening the market, the investor may be less concerned about making an agency mistake because the investor can structure the deal to protect himself from the risk, or the investor can get more actively involved as a means of monitoring agency risks. What this investor would have to avoid, however, would be committing to a deal in an unattractive market in which he/she may have little control (Fiet, 1995a).

In this paper, this notion of risk controllability will, thus, be loosely linked to the level of an investor's investment experience as a possible indication of that investor's ability to control one type of risk better than another. In particular, we may assume that serial angels have climbed further up the learning curve (than non-serial angels), since they have made more unquoted investments. They have, in all likelihood, experienced a few past losses and may now be less naïve and more realistic in the screening/due diligence and investment processes. This idea of the benefit of experience is echoed by Wetzel who states:

> the intensity of an individual's interest in venture investing appears to be dependent in part upon the investor's familiarity with the techniques of successful venture investing, as well as upon the availability of opportunities . . . . Learning the tricks of the trade takes time and time is scarce (Wetzel, 1987, p. 311).

It might also be assumed that, on average, serial business angels have more experience in dealing with entrepreneurs and agency issues. This may make them more adept at negotiating and formulating an investment deal that better aligns the incentives of the entrepreneur with those of the serial investor. This implies that they may have more control over, and are better able to regulate agency issues contractually, rather than through active participation and monitoring. This is similar to the behavior of venture capitalists, who "may worry less about agency risk because they are able to protect themselves through the use of boilerplate contractual terms and conditions that they append to each venture capital agreement" (Fiet, 1995b, p. 556): This issue of contract completeness has received little attention in previous articles on agency theory and venture capital suppliers, but can certainly shed more light on business angels.

Thus, since serial angels may formulate better contracts to reduce agency risks and have more experience in dealing with entrepreneurs and agency issues, we might propose that they are (relative to non-serial angels) less concerned with agency issues. Conversely, market risk is influenced by macroeconomic variables, and therefore may be particularly challenging to control and evaluate. Thus, with less agency concerns, serial angels may place more emphasis on reducing market risks in the investment process. Indeed, in interviews with angels, serial angels certainly appeared to stress market risk issues more than their less experienced and more naïve counterparts.

Serial Angels' Greater Concern for Market Risk

To reduce market risk, it was previously stated that diversification of investments is a sound strategy. However, in the entrepreneurial environment, research has shown that business angels (serial and non-serial) tend to invest in non-diverse industry segments (Freear & Wetzel, 1988, 1990; Aram, 1989; Ehrlich, Noble, Moore, & Weaver, 1994). This implies that they do not hold a diversified investment portfolio, which could reduce market risk. Thus, limiting their exposure to these risks is particularly paramount. Fortunately, there are two other methods that serial angels, especially, may wish to employ to reduce market risks.

The first method involves investing in market sectors in which the investor has previous experience (Sullivan, 1991; Mason, Harrison, & Chaloner, 1991; Landstrom, 1993; Harrison & Mason, 1991; Aram, 1989; Kelly & Hay, 1996a, b). Supporting this notion, Fiet (1991, 1995a, b) suggests that business angels may be more comfortable dealing with market risk (and more concerned about agency risk) due to their previous experience in the industries in which they have invested. Fiet also presents empirical evidence to support that venture capitalists are more concerned with market risk than business angels in general, who give more importance to agency risk. However, my research[1] has found that venture capitalists (who are generally more concerned about market rather than agency risk) tend to have significantly more experience than business angels in the sectors in which they invest ($p < .001$). Therefore, I would like to argue that an investor's prior industry experience may not necessarily indicate that the investor is less concerned (and more comfortable dealing) with market risk (relative to agency risk), but that the investor uses his/her prior industry experience to reduce the level of market risk.

Based on this and previous arguments, it is proposed that experienced investors may be more concerned with controlling market risks by limiting investments to sectors in which they have experience. Indeed, Harrison & Mason (1992, p. 13) state that it is often the "active investors in particular (who) have a preference for investing in sectors or activities in which they have experience." These investors may feel that their efforts are better focused on deals in which they have an information and skill advantage (Norton, 1995). This idea is also supported by the authors of the only other specific paper on serial investors, Kelly & Hay (1996b), who found that:

> a number of investors commented that they became somewhat more selective in the subsequent investments they made after a negative event by investing in industrial sectors in which they had direct experience and, more importantly, by backing people known to them personally or to their syndicate partners (p.171).

A second method a business angel may use to reduce market risks is to conduct research in the market sectors in which he/she invests. Although it might be argued that those with more experience in a sector will be less inclined to conduct further research in it, I would like to contend that although two ventures might be in the same industry sector, and thus have similar general market risks, they will each have more unique risks within the market which need to be investigated prior to investment (especially since angel investors do not follow a diversification approach). In this sense, this research proposes that, relative to non-serial angels, serial angels act more like venture capitalists in their due diligence of risk. Like venture capitalists, serial angels have less concern about agency risk factors (which they have experience in controlling) and focus more on the pre-investment evaluation of market factors. This is not to say that serial angels closely mirror venture capitalists (in fact they still behave rather differently), but relative to non-serial angels, serial angels place less emphasis and concern on agency factors and more on market risk factors. Based

1. The research finding is discussed more fully in a forthcoming paper.

on the arguments presented thus far, two hypotheses can be formulated.

H1: Compared to non-serial investors, serial investors are more concerned with market risks and therefore more likely to limit their unquoted investments to industry sectors in which they have prior experience.

H2: Compared to non-serial investors, serial investors are more concerned with evaluating market risks and thus also conduct more research in the industry sectors in which they wish to invest.

A more detailed discussion of serial angels' lesser concern for agency risk, relative to non-serial angels, will now be given.

Serial Angels' Lesser Concern for Agency Risk

To reduce agency risk, it has been stated that two possible approaches are contract formulation and investment monitoring. In this section, it will be shown more fully that due to the investment experience of serial angels, they may have better command of these two risk-reduction methods and therefore may be, compared to non-serial angels, less concerned about agency risk. This argument will now be more fully analyzed for each risk-limiting approach.

With respect to contract formulation as a means of agency risk reduction, a notion was proposed earlier that serial investors (with more unquoted investment experience) are more thorough in their investment deal negotiation and formulation. In all likelihood, their past investment experiences (both positive and negative) have taught them to reduce their risks. This study's interview results certainly indicate that most serial investors have experienced past investment losses and (with their acquired investment experience) now prepare more comprehensive contracts than non-serial angels. Conversely, some non-serial investors mentioned that their investment contracts were basically a "friendly handshake." This finding is supported by Mason, Harrison, and Allen (1995) who found that only 38% of business angels use professional assistance, and in only 70% of investments was an investment agreement drawn up.

With respect to monitoring as a means of risk reduction, serial investors may have fewer incentives (than non-serial angels) to monitor closely. This is partly because they may have better investment contracts but also because they have more experience (and possibly more skill) in dealing with entrepreneurs of unquoted companies, and therefore may be less concerned about possible agency risks, compared to the less experienced non-serial angel. A number of researchers also support the notion that there is a learning or experience curve to the monitoring of portfolio firms (Norton, 1995; Ruhnka, Feldman, & Dean, 1992). Another explanation may be that because serial angels have larger investment portfolios, and the time commitments required to actively monitor each investment is large (Neiswander, 1985), it would be less likely that they would have time to be actively involved in their unquoted investments.

Based on all the aforementioned assumptions, the following hypothesis is formulated:

H3: Serial investors are less actively involved in their unquoted investment portfolio companies, compared to non-serial angels.

With less involvement, serial investors may prefer to co-invest as a means of risk reduction. With more investor eyes on the entrepreneur, there is less need for each individual investor to actively monitor. This leads us to the next hypothesis:

H4: Compared to non-serial angels, serial angels prefer to co-invest more.

However, the relationship between co-investing and monitoring may not be clear. Kelly and

Hay (1996b) state that when co-investing in a syndicate:

> (i)t is reasonable to suggest that it is not necessary for a given investor to be actively involved with all the ventures in which he has invested, rather a member(s) of the syndicate whose background is best suited to the task can assume an active role while other members are only passively involved. (p.164)

Although this might seem plausible, it has the potential to create a free-rider problem. This occurs when an individual shareholder does not have an incentive to monitor management, since the gains from improved management are enjoyed by all shareholders, whereas the costs are borne only by those who are active (Hart, 1995). One adverse result of this is that there may be less incentive for individual fund providers to monitor the entrepreneur and this may reduce the entrepreneur's constraints on pursuing his/her own goals (Hart, 1995).

In this article more emphasis is placed on the contractual agreements that serial angels have formulated and their more limited time availability for monitoring as more probable reasons for their less active monitoring. Since this study has taken a more contractual view of the agency risk issue, this argument may be classified more as a principal-agent research approach rather than the positivist approach to agency theory (Landstrom, 1992; Fama & Jensen, 1983; Eisenhardt, 1989).

Building on some of the assumptions already made, we might assume that if serial investors are going to be less actively involved in their investments, they will be less concerned with investing in ventures that are geographically close. Indeed, many investors prefer to invest locally precisely because of monitoring considerations (Mason et al., 1995). This allows the next hypothesis to be formulated.

H5: With less active involvement in the venture, serial investors are less concerned than non-serial angels about the geographical location of the firm they are funding.

In the previous sections, the notion of unquoted investment experience and experience curves was applied to the theoretical issues surrounding investment risks. It has been assumed (primarily based on the interview findings and theory) that greater experience in making unquoted investments has motivated serial investors to take a more thorough approach to contract formulation and thus a more "laissez-faire" approach to the active daily monitoring of their investments, relative to non-serial angels. Since, thus far, it has been assumed that greater unquoted investment experience has positive effects on the investment process, we might also expect that these more experienced serial investors may also have a higher rate of return on their investments.

H6: Because serial angels have more experience and expertise in making unquoted investments, all other things being equal, we might expect them to have higher rates of return on their investments compared to non-serial angels.

This relationship between experience and returns is discussed by Kelly and Hay (1996b, p. 171) who ponder whether: "(o)ver time, . . . an investor enhance(s) his ability to identify 'winners'?" Hopefully, this paper's findings will shed more light on this issue.

METHODOLOGY

Due to the diverse, dispersed, and confidential nature of most business angel investment transactions, it is extremely difficult for researchers to identify these investors for research purposes (Wetzel, 1982). Their preference for anonymity adds further challenge to the researcher's task. These difficulties limit the researcher to four main methods for tackling this problem. Firstly, the

Table 1

Analysis of Data Collections[a]

Number of Questionnaires		Response Rate
Distributed	252	
Received	130	(51.5%)
Unusable (because of material faults)	(12)	(4.7%)
Missing data on 'number of unquoted investments done'	(2)	(< 1%)
Total Number of usable questionnaires	116	(46%)
Number of interviews conducted	+25	
Total number of Business Angels in the study	141	

[a] Since the questionnaires were distributed through business introduction services, it was usually not possible to send a second mailing to those angels not responding. (This was; however, possible with one of the services.) In addition some respondents were from another researcher's database of past respondents; these 21 non-BIS respondents may partially help to account for the high response rate.

researcher can use a convenience or a random sample of firms from a database and encourage them to provide information on their informal investors (Aram, 1989; Freear & Wetzel, 1990; Freear, Sohl, & Wetzel, 1994a). Secondly, a sample of high-net-worth individuals can be identified from a database (such as those with mortgages above a certain threshold) and these individuals can be targeted in the hopes that they have made informal investments (Freear, Sohl, & Wetzel, 1994b). Thirdly, since business angels usually are closely connected to other angels, a snowball technique can also be utilized to increase sample size (Wetzel, 1983). Fourthly, with the help of business introduction services (BISs)—firms which match entrepreneurs seeking funding with potential investors looking for investment opportunities—business angels who subscribe to these services can be targeted as a convenience sample. This last approach is not widely used in the US, but is more commonly used in the UK (Mason & Harrison, 1992; Stevenson & Coveney, 1994; Coveney & Moore, 1997).

For this research study, the fourth approach was utilized to empirically test the theoretically based hypotheses. Business angels were identified through their membership with certain business introduction services, and those services made initial contact with the angel to notify them of the research study. A two-phased approach was then adopted for the data collection. In the first phase, semi-structured and open-ended questions were administered in 25 personal interviews. At the end of each interview session, a quantitative questionnaire was also administered. In the second phase, the first phase interview responses were used to formulate a two-page postal questionnaire, which enabled a larger sample to be targeted for greater generalization of the results and as a means of triangulating the data findings. This questionnaire contained a series of 5-point Likert-scale questions, which allowed respondent to rate the attractiveness of particular features of their last investment, and some short-answer questions. Thus, this approach ensured that the data collected would be deal-specific and based on actual investments made rather than on general investment preferences. Using a total of eleven business introduction services around the UK, 252 active business angels (who had each made an unquoted investment within the last three years) were targeted, for

Table 2

Correlation Matrix[c]

	1	2	3	4	5	6	7	8	9	10	11
1. Serial business angel	1.00										
2. Number of unquoted investments done	.042[b]	1.00									
3. Number of new firms founded	0.29[b]	0.65[b]	1.00								
4. Amount of sector experience	0.19[a]	0.18[a]	0.19[a]	1.00							
5. Amount of sector research	0.13	0.09	0.08	.25[b]	1.00						
6. Desire for firm involvement	-0.08	-0.19[a]	-0.10	0.22[a]	0.03	1.00					
7. Number of visits to firm	-0.11	-0.15	-0.11	0.08	0.19[a]	0.35[b]	1.00				
8. Prefer co-investors	0.17[a]	0.18[a]	0.04	-0.04	0.06	-0.09	-0.04	1.00			
9. Locality of venture	-0.16	-0.18[a]	-0.21[a]	-0.03	-0.18a	0.37b	0.20[a]	-0.13	1.00		
10. Initual R.O.I. expected	0.19	0.13	0.05	0.06	0.14	0.03	-0.02	0.06	0.05	1.00	
11. R.O.I. now expected	0.14	0.16	-0.05	0.13	0.33[b]	0.01	0.15	0.01	0.09	0.53[b]	1.00

[a] Indicates significance level of $p < 0.05$
[b] Indicates significance level of $p < 0.01$
[c] These are two-tailed bivariate correlations.

a total response rate of 51%, and a total of 141 usable business angel responses. This response rate is much higher than that received in other studies, which may be due to the shortness of the questionnaire and the referral sources used. Using SPSS software, the quantitative data were analyzed for statistically significant differences between the two investor types.

RESULTS

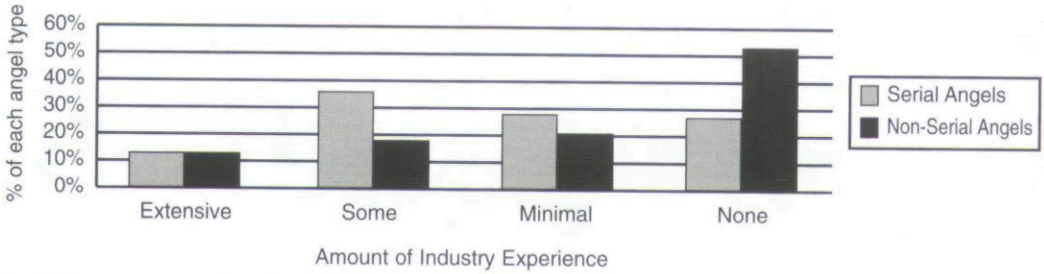
Using the serial investor classification proposed by Kelly and Hay (1996a, b), the total sample of business angels was divided into those who had made three or more unquoted investments and those who had only invested in two or less. The former were then considered, for the purpose of this research, to be serial angels, and the latter, non-serial angels. Since dividing the data at three, rather than four or five, 'unquoted investments made' might seem a bit arbitrary, some correlation results (of the number of 'unquoted investments made' with certain variables) will be presented throughout the results section to show relationships that are evident regardless of the cut-off mark used for subject classification. Unfortunately, this study does not consider the time period over which these investments were made. This is recognized as another potential variable that can be used for classification, and its omission here may certainly be a limitation. Thus, out of the 141 angels in this study, 91 (65%) were considered to be serial investors and 50 (35%) non-serial investors. On average, serial angels have made a total of 7.2 unquoted investments, while non-serial angels only 1.5 investments (the median number is five and two respectively).

Investors Characteristics

Due to their propensity to invest in a larger number of firms, serial investors might appear to be more entrepreneurial in their investment behavior than non-serial investors. This is confirmed

Chart 1

Amount of Prior Experience in Firm's Industry Sector*



** The differences between angel types depicted in this chart are statistically significant (p<0.05)*

by statistical analysis, which shows that serial angels have founded considerably more ventures as entrepreneurs than non-serial angels. On average, serial angels have founded 3.04 firms while non-serial angels have started 1.08 firms; the difference is statistically significant ($p < .001$). Running a correlation, across the total sample, between 'the number of firms founded as an entrepreneur' and 'the number of unquoted investments' produces a very strong correlation of .6490**.[2] One potential explanation of this result may be that a number of respondents might have considered some of their unquoted investments as entrepreneurial ventures. However, the question on the questionnaire was clearly stated so as to ask for the number of businesses founded as an entrepreneur, not those funded as an investor, although the potentially low degree of care afforded to questionnaire completion by some respondents should not be over-looked. This result is also supported by some previous research that compared the characteristics of entrepreneurs and non-entrepreneurs. One of the conclusions of this work was that:

> there is reason to believe that entrepreneurs who are investing in the business venture of another tend to identify with the person and the process. This identification with or empathy for a fellow entrepreneur may manifest itself in more readily investing in earlier stage ventures and in making a greater number of informal investments (Sullivan, 1991, p. 466).

Since these more entrepreneurial (serial) investors have more empathy for the entrepreneur and seem to understand him better, it may be possible to assume that these investors worry less about the entrepreneur as a source of risk. This would support the assertion made earlier that serial investors are less concerned about agency risks and more about market risks, relative to their more inexperienced counterparts.

Sector Experience

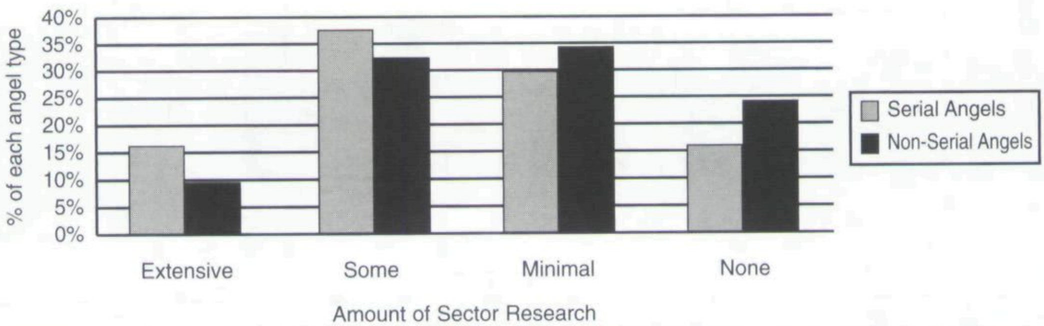
During the 25 interviews conducted with business angels it became clear that there is a considerable learning curve when making unquoted investments. Based on this premise, Hypothesis 1 supposed that because serial angels have more experience investing in risky unquoted firms (and are more likely to have experienced a potential loss) they are more likely to restrict their unquoted investments to industry sectors in which they have experience and understanding (and are more comfortable investing in).

This hypothesis (H1) is supported by the empirical data. There is a statistically significant difference between the amount of specific industry sector experience that serials have, compared to non-serial investors, in the ventures they funded ($p < .050$). A correlation for the whole angel sam-

2. For the remainder of the article: ** correlation is significant at 0.01; * correlation is significant at 0.05.

Chart 2

Amount of Research on Firm's Industry Sector*



** The differences between angel types depicted in this chart are statistically significant (p<0.20)*

ple of 'the number of unquoted investments made' by 'investor experience of the investee firm's industry sector' also showed a significant positive correlation (.1875*). Thus, compared to non-serial investors, serial investors have more experience in the industry sector of the unquoted portfolio firms they fund. This may also add some strength to the assertion that because serial investors have more concern for market risk, compared to non-serial investors, (and less concern for agency risk) they tend to reduce their potential market risks by restricting their investments to sectors with which they are familiar. However, this does not imply that serial angels have more concern for market risk as they get more experience, but that due to their experience they have less concern about agency risk, and so may be more able to focus on market risk.

Sector Research

In the second hypothesis it was suggested that because serial investors are more concerned about market risk than serial angels, they are also more likely to conduct pre-investment research in the sector of the investee firm, relative to non-serial angels.

This hypothesis (H2) is only partly supported by the empirical data. Serial, rather than non-serial, investors were more likely to conduct pre-investment research in the sector of a potential investee firm. Although this finding was not significant at the 10% significance level, it was at the 12.6% level ($p < .200$). Compared to non-serial investors, serial investors might view their greater inclination to invest in venture sectors they know (and conducting more research in those sectors) as their most effective way of reducing market risk. One researcher contends that business angels, in general, may get frustrated in obtaining market risk information themselves and substitute agency information for it, and thus rely on the entrepreneur to evaluate market risk for them (Fiet, 1995b). Experienced business angels may have discovered that such relationships do not always lead to a positive outcome and may now feel more inclined to conduct the market research themselves.

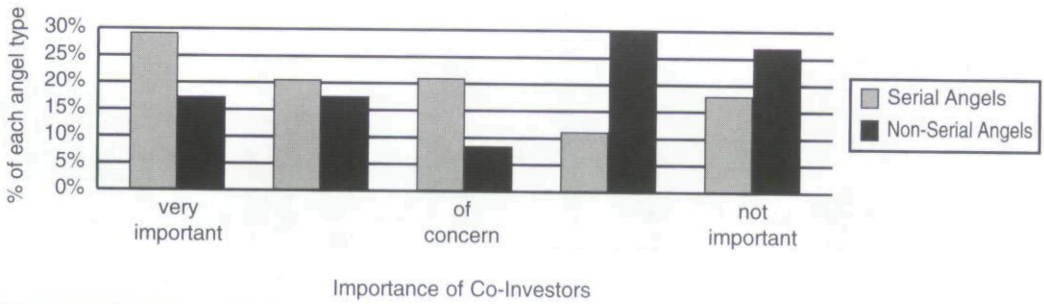
The empirical result presented here may offer very loose support to the assertion that serial investors are more concerned with controlling market risks ex ante investment than are non-serial angels. However, other data show that serial angels are more attracted than non-serial angels to ventures in industries with less competition ($p < .100$). This may thus add slightly more support to the notion that serial angels are more concerned about market risks.

Post-investment Involvement

It was suggested earlier that due to their more restricted time availability for active participation (Kelly & Hay, 1996b) and better investment contracts to protect their interests in the investee firm (Norton, 1995; Hart, 1995), serial business angels may be less inclined to get actively

Chart 3

Importance of Co-Investors*



** The differences between angel types depicted in this chart are statistically significant ($p<0.05$)*

involved in their investments.

This hypothesis (H3) is not supported by the empirical regression data but is given weak support by the correlational data. Although the variable that measured an 'investor's desire for involvement' was not significantly different based upon the cut-off for the classification set (i.e. those with < 3 unquoted investments are non-serial angels), there was a statistically significant negative relationship across the whole angel sample for 'the number of unquoted investments made' and 'desire for involvement' (correlation -.1951*). Likewise, the degree to which investors actively monitor their investments did not significantly differ for the two angel groups classified.

However, there was a statistically significant negative relationship across the angel sample between 'the number of unquoted investments made' and 'the degree to which the investor actively monitors the investment' (correlation -.1783*).

On average, serial investors telephone their portfolio firms 7.1 times per month, while non-serial angels call 9.1 times per month ($p = .267$). But when the degree of telephone contact is considered across the non-serial investor population, there is a strong negative relationship between 'telephone contact' and 'the number of unquoted investments made' (correlation -.3127*).

Similarly, the average number of visits per month for serial investors is 2.7 times per month and 3.8 times per month for non-serial investors, which was not significantly different ($p = .209$). But like the number of telephone calls per month, there is a statistically significant negative relationship across the non-serial angel sample between 'the number of unquoted investments made' and 'the number of visits per month' to the portfolio firm (correlation -.3127*).

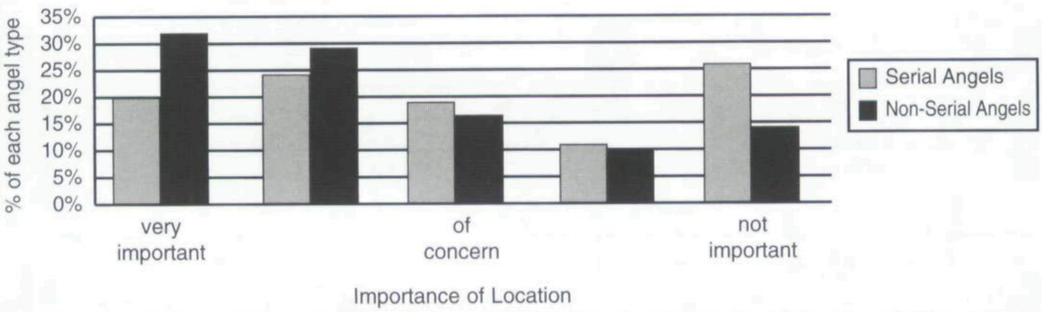
Although the opportunity to get involved is rarely one of the most influential factors that attracts investors, the empirical results do show, to some degree, that serial angels are less involved in the monitoring of their unquoted portfolio firms than non-serial angels. But, because serial angels have (by definition) more ventures to monitor, we might expect that the amount of hands-on monitoring will decrease with an increase in investments. But this does not imply that serial angels' monitoring effectiveness also decreases, in fact, the opposite may be true.

Preference for Co-investing

In addition to their greater industry sector experience and sector research, serial investors might consider co-investing with other business angels as another means of risk reduction. With more investments to cater to in their investment portfolio, serial investors have less available time to monitor each venture. Although they might have more developed investment contracts aligning the actions of the entrepreneur with their own, one business angel stated that "the quality of the investment contract is only as good as the business." With this in mind, serial investors may be

Chart 4

Importance of Location of Investment*



** The differences between angel types depicted in this chart are statistically significant (p<0.10)*

prone to finding other ways to reduce agency and market risks.

Co-investing may render these more seasoned investors the knowledge that "if two other investors are investing in the firm, then it must be a good investment opportunity." Thus, safety in numbers may be seen as a way to reduce market risk due diligence, but also by having more co-investors to monitor the investment, agency risk may also be reduced. Past research in the US has shown that over half the business angels prefer to co-invest, while it has been suggested that UK business angels prefer to invest alone more than their US counterparts (Freear et al., 1994). Based on the belief that serial angels might be slightly less active in monitoring the firm, it was hypothesised that they might prefer to co-invest in order to share the monitoring responsibility.

This hypothesis (H4) is supported by the empirical data. Serial investors show a significant preference over non-serial investors for co-investing ($p < .050$). When analysed across the whole angel sample, there is a strong positive relationship between 'liking to co-invest' and 'the number of unquoted investments made' (correlation .1850*). However, since hypothesis 3 did not conclusively show that serial angels are less "hands-on," an additional explanation for the serial angel's greater preference for co-investing, compared to the non-serial angel, may be due to the former's greater opportunity to co-invest. Indeed, with more investment experience and market familiarity, a serial angel may know more players in the market with whom he/she might prefer to co-invest.

Geographical Locality Preferences

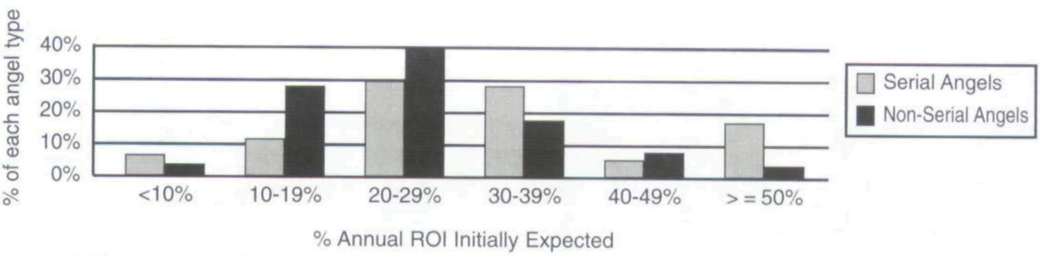
With greater unquoted investment experience, slightly less active involvement in their investee firms, and more co-investing, serial investors may feel less inclined to restrict their search for a good investment opportunity in their local geographical area, whereas individual investors (not co-investing) seem to have a preference for investments relatively close to home (Wetzel & Freear, 1994).

This hypothesis (H5) is supported by the empirical data. There is a statistically significant difference between a serial investor's concern for investing locally compared to that of the non-serial investor ($p < .100$). When this is analyzed across the whole angel sample, there is a strong negative relationship between 'the number of investments made' and 'the preference for investing locally' (-.1847*). There is also a positive correlation for 'desire for involvement' and 'preference for a local venture' (correlation .3700**). Forty-four percent of the serial angels indicated that the location of the venture was a very important or important attraction, while almost 60% of the non-serial angels thought so.

One explanation may be the lesser degree of active involvement by the serial angel as his/her number of investments grows. A second explanation[3] may be that due to the serial angel's greater

Chart 5

% Annual ROI Initially Expected on the Investment*



** The differences between angel types depicted in this chart are statistically significant (p<0.05)*

level of investment activity, he/she will more likely have saturated a local area in the search for suitable investment opportunities and may search further away from home.

Returns on Investment and Venture Performance

Although investment performance of small unquoted entrepreneurial ventures is dependent upon many factors beyond the investor's and entrepreneur's control, all other things being equal, one might expect that more experienced investors in these firms will have greater expertise in making successful investments. Furthermore, the past entrepreneurial experience of serial angels may imply that they "have acquired the kind of experience (street smarts) that it takes to start, manage and harvest a successful entrepreneurial venture" (Freear, Sohl, & Wetzel, 1992, p .379). Research on venture capitalists has shown that they have an above average tendency to pick winners (Hall & Hofer, 1993)—could this be the case for serial angels too?

This hypothesis (H6) is supported by the empirical data. When asked to list the annual rate of return initially expected on the venture, serial investors stated an average rate of 33%, while non-serial angels gave 22.9%, a difference that is statistically significant ($p < .050$). The median rates of return initially expected are 20% and 30% respectively, adding further support that serial angels appear to be more optimistic in their investment returns than non-serial angels. These findings are relevant because little research has been conducted on the returns from investing in the informal venture capital market (Mason et al., 1995; Freear et al., 1997). When comparing the annual rate of return that the business angels now expect (an average of 1.2 to 1.5 years since the investment for the serial and non-serial investors respectively), the serial angels stated an average return of 29%, while the non-serial angels stated an average return of 18%, a difference that is statistically significant ($p < .200$).

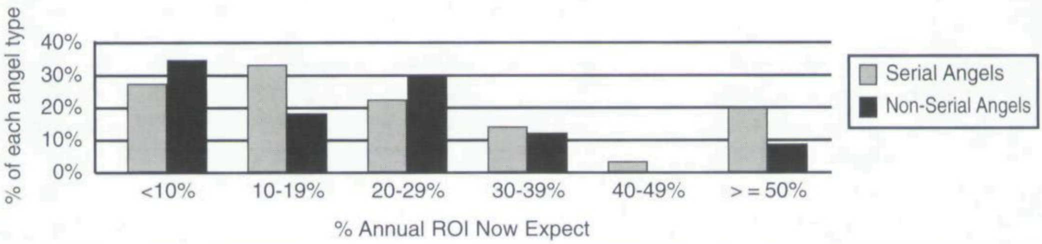
However, since the median returns are 17.5% and 20% respectively, it is clear that serial angels have more investors at the high end of the return rate spectrum. Thus, although serial angels do appear to have better-performing investments, one must be careful not to firmly conclude that they make significantly larger rates of return than non-serial angels. To actually realize these investment returns, an investor must have an exit route. Comparing this criterion for the two groups shows that 36% of the serial angels thought that identification of an exit route before investment was essential, whereas it was only of similar importance for 24% of the non-serial angels.

Whether past investment (and possibly entrepreneurial) experience in unquoted companies is responsible for the slightly higher returns for serial investors cannot be determined, but it could certainly be the case that when investing in small, risky, entrepreneurial ventures, experience may count. Past research has shown that certain entrepreneurs are able to utilize experience gained from

3. This alternative explanation was suggested by Professor Jeffrey Sohl in a conversation with the author.

Chart 6

% Annual ROI Now Expect on the Investment*



** The differences between angel types depicted in this chart are statistically significant ($p<0.20$)*

starting previous ventures to enhance the survival chances of their businesses (Carter, Williams, & Reynolds, 1997). In this way, serial investors may also use their past entrepreneurial experience to make better unquoted investments. A second explanation may be that non-serial investors do not reduce risks (and steer the venture) as actively, and with as much effect, as they might have hoped when initially entering the investment. This suggestion is supported by previous research:

> (p)erhaps the most straightforward interpretation is that unsuccessful investors have an inflated opinion of the value of their hands on contribution, whereas successful investors recognise that the entrepreneur is in the driving seat and hence an external investor's influence is, inevitably, relatively marginal to the success or otherwise of the business. (Lumme, Mason, & Suomi, 1996)

Alternatively, serial investors may just be more confident investors (as the larger sample of firms in their portfolio shows) and therefore may be inherently more optimistic about the realized returns they will receive, as may be shown by the high correlation between 'initial returns expected' and 'returns now expected to realize' (correlation .5311*). This is partly supported by a previous study, which found that with regard to their investment practices, "entrepreneurs perceived their downside risk to be less" than did non-entrepreneurs (Sullivan, 1991).

CONCLUSIONS

This is the first large-scale attempt to study the investment characteristics of the most influential group of informal equity investors—serial angels. Due to the exploratory nature of this study, and some of the inherent methodological limitations, the results presented in this paper should not be considered as firm conclusions, but rather as findings that can be used as building blocks for future research.

Some the empirical and theoretical findings on the differences between serial and non-serial angels presented in this paper now follow.

Compared to non-serial angels, serial angels:

- have founded more firms as entrepreneurs themselves.
- tend to invest more in industry sectors in which they have previous experience.
- tend to conduct slightly more research on the industry sectors in which they invest.
- prefer co-investing with other business angels.
- are more attracted to industries with less competition.
- are possibly less inclined to take a "hands-on" role in running the firm.
- are less concerned about the location of the ventures they fund.
- are more optimistic upon entering their investments, but show only slightly higher rates

Table 3

Significant Differences[c]

	Serial Angel Mean	Non-Serial Angel Mean	P value[d]
Number of unquoted investments done	7.27	1.58	<0.001
Number of new ventures founded	3.04	1.08	<0.001
Amount of experience in sector[b]	3.09	2.68	0.040
Amount of sector research conducted[b]	2.46	2.72	0.126
Nature of firm's competition[a]	2.39	2.73	0.026
Intended length of investment time (years)	4.90	5.76	0.160
Preference for co-invstors[a]	2.68	3.32	0.026
Preference for local investors[a]	2.98	2.48	0.058
Initial annual R.O.I. expected (%)	33.02	22.94	0.013
Annual R.O.I. now expect (%)	29.45	18.	0.089

[a] These variables were rated on a 5-point salce (1 = very important, 5 = not important)
[b] These variables were rated on a 4-point scale (1 = extensive, 4 = none)
[c] Due to the imposed cut-off level for subject categorization, the correlation matrix should also be seen for full sample differences dependent upon the number of unquoted investments done.
[d] Significance is based on two-taile t- tests.

of return.

• may be more concerned about controlling market risks and less concerned about agency risks (than non-serial angels).

But what main conclusion can be generated from these findings? The findings presented in this paper may shed some light on the question: "(to) what extent does a 'play money' mentality set in whereby investors are prepared to back ventures competing in an unfamiliar industry lead by an entrepreneur unknown to them or to other investors in the deal?" (Kelly & Hay, 1996b, p. 171) The results presented in this paper indicate that with more unquoted investment experience, business angels may take on less of a 'play money' mentality because their past gains and losses on unquoted investments have taught them to be less naïve and potentially more careful with their financial investments. One indication of this may be their greater propensity, than more inexperienced investors, to invest in industry sectors in which they have prior experience. For these more experienced serial investors, the market risks may seem less controllable than agency risks, and may therefore take on a greater importance in the investment process.

IMPLICATIONS

As the most influential private investors in small entrepreneurial firms, serial business angels need to be understood better to determine what attracts this segment of the informal capital market to invest so frequently. Although both serial and non-serial angels invest similar amounts on average per unquoted investment (in this study, each group invested an average of £55,000), serial investors make a greater number of investments and therefore have a much greater economic impact than any other informal investor type. The research findings presented in this study may have beneficial implications for entrepreneurs, business angels, business introduction services, and policy.

Entrepreneurs may benefit from this research by gaining greater understanding of how serial angels assess an investment proposal and behave as investors. In addition, having a better understanding of the different types of business angels allows entrepreneurs to assess which investor will best match their firm's needs and enable them to specifically target that angel type.

Business angels may also benefit from this research by learning "the tricks of the trade"; better knowledge of the investment behavior of experienced investors can be of great benefit to more inexperienced angels who want to learn (Riding, Dalcin, Druxbury, Haines, & Safrate, 1993). The comparison of non-serial with serial angel, may highlight some important areas of potential improvement for both angel types, but especially for the more inexperienced non-serial angel. A greater understanding of serial and non-serial investor behavior and preferences may also shed more light on how to motivate virgin angels. These are individuals with an inclination and enough discretionary wealth to fund an entrepreneurial firm, but who have not yet done so.

Business introduction services may use this research to gain a better understanding of how the most active segments of business angels differ, especially in respect to their initial review procedures and preferences. This will provide valuable information to them on the types of information they should include, or not include, in their investment databases, and the ordering and layout of their materials (Mason & Harrison, 1994). Information on business angel behavior can also identify areas where these investors need assistance, so that these needs can be better met by the services offered by the business introduction service (Mason et al., 1995).

Policy to promote entrepreneurial ventures and their procurement of financial backing may also benefit from this research. A better understanding of the informal venture capital market may allow policy to be better formulated, with potentially more success. Although the UK has led the way in policy initiatives (Freear et al., 1997), it has been pointed out that, thus far, policy may be running ahead of knowledge (Mason, 1996a).

DIRECTIONS FOR FUTURE RESEARCH

Although in this study qualitative data from the 25 personal interviews was used to enlighten the quantitative findings, a number of facets were not fully explored across the rest of the respondents. One of these facets was the degree to which the investor has prior knowledge of the entrepreneur (Kelly & Hay, 1996a, b). Future studies may want to investigate this closer and link it with the general findings presented in this paper.

This paper also suggests that serial investors, relative to their non-serial angel counterparts, may place more weight on market risks than agency risks in the investment evaluation process. Although this was based on a theoretical overview and circumstantial empirical evidence, these possible relationships need to be explored more fully.

Likewise, this paper has shown that serial investors have higher initial expected rates of return and higher expected realized rates of return than those of non-serial investors. Whether this is due to their better knowledge and experience of investing in (and starting) unquoted investments, or whether this is due to greater optimism by the average serial angel, also needs to be further explored.

Throughout this paper, certain assumptions were formulated based upon the greater unquoted investment experience of serial angels relative to that of non-serial angels. Although the interviews conducted clearly showed that there is a steep learning curve when making business angel investments, there is uncertainty as to when this curve starts to even out and if it differs greatly depending upon the investor's industry background or industry sector preferences.

One of the most interesting findings from this research was that serial investors have a preference for co-investing. This is an important aspect of business angel investing that needs to be investigated further. Kelly and Hay (1996b) echo this sentiment:

> (a) clear need also exists to examine issues related to investment syndication and co-investment activity. If the most active segment of the population disproportionately invests as part of a group, it is imperative to understand the dynamics of syndication. (p.172)

Closely related to the issue of co-investment is the issue of geographical location and how a preference for local investing differs depending upon the level of investment activity and co-investment.

Lastly, although a theoretical background supports this research, there is little application of theory to the study of informal venture capital (Freear et al., 1997). Unlike past theoretical approaches (Fiet 1991, 1995a, 1995b; Landstrom, 1992), this paper alludes to the quality of investment contracts as one possible manner of reducing potential agency costs. A more definitive study of the relationship between the completeness of investment contracts and an investor's business angel experience may add more support to the principal assertions made in this paper, which, with respect to this issue, were heavily based upon the data from the business angel interviews. One goal of this paper is to forward this issue of contract incompleteness for consideration and further examination in the business angel context.

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