ABSTRACT

This empirical study reports that returns on investments made by business angel investors are significantly higher than those made by non-angels and returns on investments made by love money investors are, on average, dismal. This finding reinforces warnings that it may be counterproductive for public policy to encourage “amateur” informal investors, yet stimulation of value-adding business angel investment seems well-advised. The relative sizes of the main segments comprising the informal market were estimated. Love money accounts for more than three times as much annual investment as business angels, who in turn invest more than twice as much annually as institutional venture capitalists.

INTRODUCTION

The development of innovation-oriented new firms is widely recognized as an important “engine of growth” with respect to regional and national economic development. However, to ensure that new firms are able to commercialize successfully new products and technologies access to financing is critical. According to Bygrave, Hay, Ng, and Reynolds (2003: 105):

“Entrepreneurs are the engines that drive new companies, and financing is the fuel that drives them. Hence, financial support, especially equity finance for starting a company, is an important entrepreneurial framework condition.”

The single most important source of equity capital for small- and medium-sized enterprises is the informal market (Reynolds et al., 1999; Berger and Udell, 1998). The informal market is comprised of two main segments: business angels and friends and family members of entrepreneurs (“love money”). The latter tend to be one-off investors; however, they account collectively for the vast majority of the flow and stock of informal investment Bygrave and Hunt (2004). Business angels, however, tend to be repeat players whose importance goes well beyond the outlay of financial capital they provide. According to Berger and Udell (1998: 629), the level of financial capital invested by business angels “considerably understates” their role. Berger and Udell note that angels provide a relatively higher proportion of funds to growth-oriented firms and that firms that receive angel financing tend to be relatively successful. Moreover, Madill et al. (2005) report that business angels provide considerable non-financial value-added in the form of mentoring, networking, hands-on assistance, certification, etc.

In addition, Harrison and Mason (1992), identify three aspects that distinguish angel investing from other forms of capital: that angels concentrate on the provision of relatively small investments in the start-up and early stages of business enterprises; that they are more accommodating to the needs of SME owners; and that angel investors usually invest in their local economies. Because of their importance, governments have sought various means of activating informal investment. Because informal investing comes from individuals’ accumulated after-tax income, it is reasonable to expect...
that tax rates may influence informal investment activity (and Bygrave and Hunt (2004: 24) confirm empirically that the “prevalence rate of informal investors was negatively correlated with social security taxes and with taxes on capital and property”). Consequently, governments and lobbyists have focused on tax-related measures as a means of stimulating informal investment. Governments in the UK (Boyns et al., 2003) and in at least eight US states (Inc., 2005) have devised front-end tax incentives to encourage informal investment. However, there remains considerable debate about whether encouraging additional informal investments is wise from a societal perspective. Gompers and Lerner (2003), while recognizing the need for adding to the supply of risk capital, raise substantive questions about encouraging informal investment. They submit that (2003: 291):

“... venture capitalists may have eschewed small investments because they are simply not profitable, because of high costs associated with these transactions, or [because of] the poor prospects ... of the firms.”

If this is true, Gompers and Lerner argue against the wisdom of policies that seek to encourage individuals to invest in projects that (2003: 291) “are rejected by professional investors.” They further state (2003: 291):

“Encouraging individuals to make such small investments may be counter-productive and socially wasteful if the financial returns are unsatisfactory and the companies financed are not viable.”

This paper addresses this debate: should governments be encouraging individuals to become informal investors? Does it make sense to provide tax incentives to all informal investors or, as Gompers and Lerner speculate, might this reward poor investment decisions? To what extent do the two primary segments of the informal market, business angels and love money investors, differ in terms of their records of success? This discussion may be informed from knowing the rates of return earned by the two categories of informal investors and the extent to which rates of return differ between arguably inexpert informal investors and relatively more professional (angel?) investors. This study examines this issue and, in doing so, adds to our understanding of the informal market.

Accordingly, the research reported here compares business angel and non-angel informal investors’ estimated realized rates of return on informal investment. In addition, the work estimates the flows of informal investment for the two categories of informal investors. Estimation of the relative magnitudes of aggregate informal investment for the two groups is of particular relevance from a public policy standpoint. However, this work is also of interest to academic researchers because it demonstrates a new approach to estimation of the flows of informal investment. To address these questions, this work uses data from a large-scale survey of the owners of SMEs to generate baseline estimates of the annual flow of informal investment from business owner angels and love money investors. Because business owners do not comprise the whole of the informal market, a second national survey is employed, one that targets business angels and reveals the proportion of business angels who are business owners. Probability theory is then used to scale up the flow and stock of business owners’ informal investment beyond business owner respondents to the whole of the economy.

To report on the work, this paper is organized as follows. Following this introductory section, the existing research literature is reviewed as it pertains to the research questions being addressed here. This is followed by a description of the data employed and the method of analysis. The empirical findings are then presented and the paper closes with a discussion of the implications of the results for public policy and for future research.

**PREVIOUS RESEARCH**

In much of the writing about the informal market, business angels and love money investors are often referred to collectively as informal investors and often the terms are used interchangeably. While there is an extensive and emerging literature about business angels, there is relatively little published about love money. Farrell (2000: 35) calls for additional research on the topic, stating that this is a largely neglected aspect of SME financing.

It is quite possible that friends and family may lack the assessment and legal skills necessary to protect themselves and to value accurately the opportunity in which they may invest. This reasoning lies at the
core of Gompers and Lerner’s (2003) argument that it may be counterproductive to the economy “to encourage amateur individual investors.”

Lerner (2000: 515) defines a business angel as:

“ … a wealthy individual who invests in entrepreneurial firms. Although angels perform many of the same functions as venture capitalists, they invest their own capital rather than that of institutional or other individual investors.”

The business angel risk capital market comprises individuals who provide risk capital, often directly to new and growing businesses with which they have had no previous relationship. Lerner’s definition does not exclude that angels may invest in firms owned by friends and family, and it is more than likely that business angels also invest in firms owned by friends and family members. Other definitions therefore exclude this possibility. The attributes of business angels have been widely studied and a consistent picture of angel investors has emerged. Even though few, if any, studies are true random samples, this profile is consistent across methodologies and across countries in that angels are prototypically cashed-out entrepreneurs with high levels of education, considerable business experience, and appear to be relatively sophisticated investors (Dal Cin et al., 1993). The literature suggests that economic motives (particularly the opportunity for high capital appreciation) are primary reasons for angel investments. In addition, there appear to be some significant non-economic motives. It is believed that some investors may derive “psychic income” from the opportunity to play active roles in the entrepreneurial process (Sullivan and Miller (1996) refer to this as a “hedonistic motive”). Others invest on “moral” grounds, feeling an obligation to give back to society, through investments in up-and-coming entrepreneurs, job creation in areas of high unemployment, ventures developing socially useful technology (e.g. medical or energy saving) and ventures created by minorities (Wetzel, 1983; Sullivan and Miller, 1996). Some investors may be willing to trade-off economic returns to obtain hedonistic and altruistic returns.

Previous research has documented the importance of business angels to the growth and start-up of entrepreneurial firms and has also listed attributes of business angels (see Landstrom (2007) for a summary of research regarding business angels). It is understood that business angels constitute an important source of financing and that they also provide significant non-financial inputs to the growth and viability of the firms in which they participate. Madill et al. (2005) document, that from the business founders’ perspective angels provide mentoring, advice, contacts, and other forms of non-financial value added including accreditation with respect to further institutional venture capital and bank financing. They also find that it is important to angel investors that they are able to add non-financial value to investments. Thus, the importance of business angels derives not only from the amounts they invest but also from the mentoring and other ways in which they participate in the firms.

Collectively, it is understood that business angels invest more funds in more firms than does the formal venture capital industry, particularly with respect to early stage enterprises. However, it is difficult to obtain precise estimates of business angel activity, for at least four reasons:

- Informal investors value privacy. There is no published or comprehensive listing of informal investors and this makes it impossible either to conduct a census or to select a true, classically-defined, random sample.

- Even when business angels are identified, it remains unclear if the samples of angels are representative of the underlying population of angels. As Farrell (2000) correctly points out, almost all previous research about informal and angel investors has relied on convenience or snowball sampling.

- Angels are rare within the general population; hence use of questionnaires applied to the general population is an inefficient, and expensive, means of obtaining reliable samples with which to gauge informal or angel investment activity.

Notwithstanding these difficulties, in the US as well as in other countries, this market has been identified as the single most important source of early-stage equity capital for small- and medium-sized enterprises (Bygrave and Hunt, 2004; Berger and Udell, 1998). In early work, Wetzel (1985) asserted that angels may invest as much as four times the flow of investments attributable to institutional venture capitalists. Berger and Udell (1998: 629) report that business angels in the US provided, on average, 3.59 percent of total finance to small firms in 1993, which they state is almost double that provided by institutional venture capitalists. More recently, Sohl (2005) asserted that “In 2004, in the
US, angels invested US$22.5 billion in 48,000 ventures.” Sohl’s estimate translates to approximately $75 per capita in US dollars.

Typically, angels invest in sectors and stages that are complementary to those in which institutional venture capital firms focus and are particularly important for start-ups and early-stage firms (Wetzel and Freear, 1988; Freear and Wetzel, 1990). Other works that attest to the importance of angels in various countries are those of (among numerous others): Freear, Grinde, and Wetzel (1997), Van Osnabrugge and Robinson (2000) in the US; Harrison and Mason (1990, 1991) Mason and Harrison, (1994; 1995a; 1995b) in the UK; Landström (1993) in Sweden; and Farrell (1998), and Feeney, Haines and Riding (1999) in Canada. While the importance of angels is generally acknowledged, this recognition is by no means universal in that angels remain somewhat “invisible” and often operate in the background.

Farrell (2000) reports wide ranges of estimates of informal investment activity in Canada. She notes that, at one time the role of angels in Canada was “thought to be insignificant” (Farrell, 2000: 14). Farrell reports other estimates including those of Doyle (1997, “less than $100 million”), Suret et al., (1995), Short and Riding (1989) and others that have ranged from a low of $1 billion per year to as much as $20 billion per year ($28 to $571 per capita). In view of the wide ranges of previous estimates of the level of angel investment, it seems evident that yet more precise estimates are required. In particular, if incentives such as tax credits are contemplated, it seems essential to be able to quantify the societal cost of such subsidies and to determine the extent to which incentives are likely to induce wealth-creation. In addition, it is important to recognize that even if incentives prompt more individuals to participate in the informal market, these incentives do not necessarily add to the stock of knowledge that allows business angels to provide non-financial value-added.

These issues are also pertinent to the other segments of the informal market. Investments of “love money” are stereotyped as one-off events such as parents’ investments in enterprises owned by adult children, etc. Capturing such events is arguably an even greater methodological challenge than capturing angel activity. Farrell (2000: 35) calls for additional research on love money and states that is a largely neglected aspect of SME financing. As both Farrell (2000) and Equinox (2000) note, as yet there are no reliable measures of the size and scope of the Canadian informal market or of the segments within it. Nonetheless, governments at various levels have worked to stimulate early-stage equity financing in general and business angel investment in particular. Aernouldt (2005: 359) states:

“Government policy to stimulate growth, innovation and especially the creation of new enterprises is rather focused on access to finance mainly through increasing the supply of capital. As formal venture capitalists are moving towards larger deals and shifting their investments to a later stage of development, creating a ‘second’ equity gap, business angels become more important in the financing of seed, early stage and second round phases. Government policy to stimulate [angel] financing should hence be considered as a priority.”

Such incentives have been put in place in the UK (Boyns et al., 2003) and in at least eight US states (Inc., 2005). This approach reflects that informal investments are made out of investors’ accumulated after-tax income. Bygrave and Hunt (2004, p. 24) comment on the inverse correlation between tax rates and informal investment activity; however, this finding does not necessarily imply causation. To this, Aernouldt (2005: 365) disagrees, maintaining that:

“Clearly, business angels do not need money. It is the fact that they have money makes them able to be business angels. Their own capital, often the result of the sale of their business, covers the availability of money.”

Aernouldt goes on to identify the following ways in which additional business angel investment could be mobilized.

- Syndication, to consolidate information possessed by informants and co-investors; expand the capital base; facilitate angels’ ability to diversify risk. Aernouldt also points out that syndicating investment with experienced investors is one of best instruments to learn the essentials of informal investing and hence to activate latent business angel’s capital.
Education, for business owners to enhance investment readiness. Entrepreneurs, especially those running enterprises with growth potential and who are willing to grow, need greater understanding of venture capital and specialist advice on how to structure business plans to secure external equity finance.

Enhancing business founders’ management – especially marketing – skills, a shortcoming often identified by business angels as a particular discouragement to making positive investment decisions.

Establishing “business angel academies” and business angel networking facilities.

Gompers and Lerner (2003) also raise substantive questions about encouraging angel investment. They do recognize reasons in favour of encouraging angel investments:

- the literature, albeit somewhat dated, argues that new firms (and especially innovative firms) may not receive sufficient capital;
- the structure of the venture capital industry militates against small-scale investments in early-stage firms; and,
- risk capital in the form of institutional venture capital only “fund[s] a tiny fraction of the technology-oriented businesses begun each year” (p. 290) and that such funds are highly concentrated.

However, Gompers and Lerner also submit (2003: 291) that

“venture capitalists may have eschewed small investments because they are simply not profitable, because of high costs associated with these transactions, or [because off] the poor prospects ... of the firms.”

If this is true, Gompers and Lerner argue against the wisdom of policies that seek to encourage individuals to invest in projects that (2003: 291) “are rejected by professional investors.” They state (2003: 291):

“Encouraging individuals to make such small investments may be counterproductive and socially wasteful if the financial returns are unsatisfactory and the companies financed are not viable.”

Gompers and Lerner (2003: 292) also note the following challenges with respect to how to implement programs that encourage individual investors.

- How to ensure the involvement of value-added individual investors? There is little reason, for example, to expect that family and friends of investors are able to mentor or otherwise assist the survival or development of the firm to the same extent as business angels (Madill et al., 2005). Gompers and Lerner speculate (p. 292) that involvement of unsophisticated individual investors can make things more difficult for the entrepreneurial firm.
- How to ensure compliance with disclosure provisions of securities legislation? In some jurisdictions, business angels can self-disclose as accredited, sophisticated investors to avoid the need for issuers to fulfil prospectus requirements. However, it is unlikely that all business angels do so; moreover, it is even less likely that love money investors are even aware of such disclosure requirements.
- How to ensure that taxation-based measures are properly targeted and policed? If Gompers and Lerner are correct, then tax measures that reward (as Gompers and Lerner describe them) “amateur” investors (who may be the vast majority of individual investors) may be socially wasteful.

Gompers and Lerner argue strongly that research into these and other related questions is necessary before embarking on potentially inappropriate publicly-funded initiatives. While Gompers’ and Lerner’s (2003) warning that amateur investors ought not to be encouraged, the prima facie results from the literature suggest that whereas friends and family may not be sophisticated investors, business angels may not be amateurs. If so, a “one-size-fits-all” policy applied to the whole of the informal market based on Gompers’ and Lerner’s warning may be counterproductive. Accordingly, this empirical paper addresses two areas of uncertainty that result from this discussion. The first research question addressed in this work relates to the estimation of rates of return realized on informal
investment in general and to the two segments, business angels and love money investors, in particular. Most current research speaks to the rates of return sought by business angels; however, with the exception of Mason and Harrison’s (2002) assessment of rates of return realized by business angel investors in the UK and Lumme et al.’s (1996) examination of rates of return to Finnish investors, there is scant evidence of how well (or poorly) business angels (or any other category of informal investor) have actually fared. There does not appear to be any published studies that compare rates of return experienced by the various categories of informal investor. A second area of uncertainty is that which relates to estimation of the size of the informal market and of the major segments within it.

**DATA AND METHODOLOGY**

This work draws on data from multiple sources. The primarily data are based on successive surveys conducted by Statistics Canada on behalf of Industry Canada. The *Survey of Financing of Small- and Medium-sized Enterprises* is a periodic large-scale survey that collects data regarding the financing experiences of SME owners. The survey has been conducted during 2001, 2002, and 2005. In each case, the *Survey* was administered to a stratified random sample of SME owners drawn from a sampling frame corresponding to private sector commercial businesses with less than $50 million in annual sales and fewer than 500 employees. The surveys conducted in 2002 and 2005 surveys are of relevant to this work.

The 2002 *Survey of Financing of Small- and Medium-sized Enterprises* used computer-assisted telephone interviews to collect data from the primary owners firms that were randomly-selected from the Business Register, a national database of for-profit enterprises that reported business activity during the 2001 reference year. The in-scope rate was 71% and the overall survey response rate was 66%, resulting in a total of 3,842 valid cases. The data are therefore relatively free of non-response and selection biases. The survey was representative of the (approximately) 1.3 million Canadian SMEs that have the desired attributes and was accurate with 95 percent confidence to 0.008 (0.8%). Sampling weights were applied in compiling the estimates so that individual enterprises in the sample were weighted according to their representation in the sampling frame. The data comprised baseline data (size, age, sector, other attributes of firms and owners, gender breakdowns of owners, etc.) and information about recent financing experiences of the businesses. These data are a rich research resource that allow estimation of the distributions and statistical properties of; among other elements, attributes of the businesses, characteristics of the owners (including a gender breakdown), applications for various types of financing, and the outcomes of these applications.

The 2005 survey was similar to that employed in 2002; however, data collection was more ambitious. The overall response rate for the survey was 47 percent of eligible (not screened out) respondents, resulting in 8,112 responses for which data were complete.

Both surveys asked the business owner respondents if “the majority owners of the business [had] made investments in other unrelated businesses” during the two years preceding the surveys (2000 and 2001 for the survey conducted in 2002 and 2003 and 2004 in the survey conducted in 2005). Those respondents who indicated that they had made investments were asked to specify how many investments they had made in each year and to assign these to size categories. More detail on the specific questions posed and the responses to them follows presently.

**EMPIRICAL FINDINGS**

Both the 2002 and 2005 surveys asked business owner respondents to specify the number of investments they had made, in non-public unrelated businesses, for each of the two preceding years (2000, 2001 for the 2002 survey and 2003 and 2004 for the 2005 survey). In the 2002 survey, 10.8 percent of SME owners in the sample reported making investments in either 2000 or 2001; in the 2005 survey, 9.7 percent of respondents reported making investments in either 2003 or 2004 (this difference is not statistically significant at any reasonable p-value). Table 1 presents the number of investments reported by business-owner respondents according to the survey responses as extrapolated based on the respective survey stratification schemas.

In both surveys, respondents were asked what the average amount invested was per deal. “On average, how much did the majority owners invest in these other businesses?” The breakdown of average investments is reported in Table 2 for each of the surveys.
Tables 1 and 2 reveal that the nature of informal investment shifted between 2002 and 2005. While respondents reported considerably more deals during 2005, they also invested less per deal, on average. During 2003/2004, the data suggest 131,768 deals per year at an average deal size of $56,800. This implies a flow of informal investment of $7.48 billion, approximately $214 per capita. Likewise, with 84,767 investments estimated during 2001 at an average deal size of $113,900, a flow of $9.65 billion ($276 per capita) is implied.

**Table 1: Informal Investments by Business Owners, 2000-2004.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated Number of Investments (Margin of Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>79,039 (29,151)</td>
</tr>
<tr>
<td>2001</td>
<td>84,767 (24,551)</td>
</tr>
<tr>
<td>Average, 2003 &amp; 2004</td>
<td>131,768 (20,405)</td>
</tr>
</tbody>
</table>

**Table 2: Average Size of Informal Investments by Business Owners, 2002, 2005 Surveys**

<table>
<thead>
<tr>
<th>Average Investment Range</th>
<th>Proportion of Investments</th>
<th>2002 Survey (% of total)</th>
<th>2005 Survey (% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $25,000</td>
<td></td>
<td>29.8</td>
<td>55.5</td>
</tr>
<tr>
<td>$25,000 to $49,999</td>
<td></td>
<td>13.4</td>
<td>17.0</td>
</tr>
<tr>
<td>$50,000 to $99,999</td>
<td></td>
<td>18.6</td>
<td>15.0</td>
</tr>
<tr>
<td>$100,000 to $249,999</td>
<td></td>
<td>20.5</td>
<td>7.3</td>
</tr>
<tr>
<td>More than $250,000</td>
<td></td>
<td>17.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Average Investment</td>
<td></td>
<td>$113,900</td>
<td>$56,800</td>
</tr>
</tbody>
</table>

A useful point of comparison is the flow of institutional venture capital. In 2001 (2004), the institutional Canadian venture capital industry reported 1,324 (1,488) investments involving a total of $2.5 ($1.8) billion in 418 (579) firms (www.cvca.ca, accessed in September 2007). Of these amounts, only a portion was invested in early-stage firms. In both 2001 and 2004, more than 60 percent of institutional venture capital investments were “follow-on”. Accordingly, it is safe to conclude that the Canadian informal market provides considerably more financing, at earlier stages, and to a far greater number of businesses, than the formal venture capital sector. It must be recalled that this level of investment only represents investments made by informal investors who are also business owners and therefore eligible for the surveys. It does not include informal investments made individuals who are not also SME owners. Accordingly, these estimates understate the true level of informal investment in the Canadian economy and represent baseline estimates.

The 2002 Survey further broke down investors according to whether or not they acted as operators in the businesses in which they had invested. An additional question assessed whether the investments they had made were at arm’s length or whether they were “owned or operated by family or friends.” As a result, four categories of informal investor can be discerned. The breakdown of informal investment among these groups is summarized in Table 3.

**Table 3: Types of Informal Investor**

<table>
<thead>
<tr>
<th>Acted as operators in investee firms?</th>
<th>Invested in businesses owned by family, friends?</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>34.7%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>14.0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>48.7%</td>
</tr>
</tbody>
</table>

Table 3 presents the breakdown of these categories of investors as estimated from the sampling frame:
1. **Probable angels (13.9 percent of total).** Those investor respondents who did not invest in businesses owned by friends or family and did not act as operators in the businesses in which they invested. The results suggest that a minimum of 13.9 percent of investor respondents invested at arm’s length and took on passive roles: almost certainly business angels.

2. **Probable serial entrepreneurs (37.5 percent of total).** Those who did not invest in businesses owned by friends or family but who did act as operators in the businesses in which they invested (some of these may have been angels, but only those who are heavily involved in the firms).

3. **Passive love money (14.0 percent of total).** Those who invested in businesses owned by friends/family and did not act as operators in the businesses in which they invested (some of these may have been angels who also invested in family-owned or family-operated firms).

4. **Active love money (34.7 percent of total).** Those who invested in businesses owned by friends and who acted as operators in the businesses in which they invested (some of these may have been angels who also invested in family-owned or family-operated firms).

In addition, however, angels are also known to take on active roles in the firms in which they invest and that they may also invest in family firms. Consequently, some (unknown) portion of the 37.5 percent of investors who did not invest in firms owned by friends and family were also angels but it is also likely than some of these individuals were serial entrepreneurs or operators of multiple businesses.

Table 3 shows that 72.2 percent of investors took on active roles in the firms in which they had invested. Table 3 also shows that almost half of the informal investors who responded to the survey invested in businesses owned by family members or friends. Among these, it is possible that some investors became friends with the founders of the businesses in which they invested subsequent to having made the investment, but prior to responding to the survey. These, too, may have been angel investors. Accordingly, the 13.9 percent of investors who did not invest in firms owned by friends or family and who did not act as operators must be regarded as a very conservative estimate of angel investors within the sampling frame employed for the Survey.

Table 3 also allows for a further breakdown across the four categories of investors of the aggregate amounts invested for the business owners that comprise the sampling frame for the Survey. These breakdowns are shown in Tables 4 and 5. Table 4 shows the level and frequency of investment activity for each of the four categories of informal investor listed above.

**Table 4: Investment Activity by Informal Investor Grouping (2002 Data)**

<table>
<thead>
<tr>
<th>Investor Category</th>
<th>Average Number of investments in 2001</th>
<th>Average Number of investments in 2000</th>
<th>Average Investment ($000)</th>
<th>Average Funds Invested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probable angels</td>
<td>1.33</td>
<td>1.56</td>
<td>$125</td>
<td>$166,024</td>
</tr>
<tr>
<td>Passive love money</td>
<td>0.50</td>
<td>0.33</td>
<td>$105</td>
<td>$52,568</td>
</tr>
<tr>
<td>Serial entrepreneurs</td>
<td>0.75</td>
<td>0.82</td>
<td>$105</td>
<td>$78,794</td>
</tr>
<tr>
<td>Active love money</td>
<td>0.72</td>
<td>0.60</td>
<td>$117</td>
<td>$84,031</td>
</tr>
</tbody>
</table>

Based on these data, it would appear that business owners in the first category (“probable angels”) make more frequent, and larger, investments than investors among the other groupings. Thus, of the $9.65 billion of investments in the informal market (by the business owner respondents), a minimum of $2.4 billion (25%) is attributable to business angels (Table 5).

As noted, however, the preceding sections have provided information only with respect to investments undertaken by business owners who qualified for the Survey sampling frame. The respondents therefore are necessarily a subset of the larger population of informal investors. By drawing on a second data source, these results are presently used to arrive at an estimate of angel activity in the wider population, the population beyond business owner respondents to the Survey.

To this point, the results show is that the proportion of business owners (2001 data) who are informal investors is 10.8 percent, of which a minimum of 13.9 percent are business angels. That is,

\[ P(A/B) ≡ P(\text{Angel/Business Owner}) = 0.108 \times 0.139 = 0.0151 \]
Table 5: Aggregation of Investment Activity by Informal Investor Grouping, 2001 data*

<table>
<thead>
<tr>
<th>Investor Category</th>
<th>Average Number of investments in 2001</th>
<th>Number of Investors in 2001 (000)</th>
<th>Average investment ($000)</th>
<th>Funds Invested ($billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probable angels</td>
<td>1.33</td>
<td>14.4</td>
<td>$125</td>
<td>$2.40</td>
</tr>
<tr>
<td>Passive love money</td>
<td>0.50</td>
<td>14.5</td>
<td>$105</td>
<td>$0.80</td>
</tr>
<tr>
<td>Serial entrepreneurs</td>
<td>0.75</td>
<td>38.8</td>
<td>$105</td>
<td>$3.10</td>
</tr>
<tr>
<td>Active love money</td>
<td>0.72</td>
<td>35.9</td>
<td>$117</td>
<td>$3.10</td>
</tr>
</tbody>
</table>

*Note that amounts may vary slightly from those reported previously because not all investors responded to all questions and the weighting scheme used to adjust for the stratification of the sample can exacerbate these differences.

Therefore, business angels comprise a minimum of 1.51 percent of business owners in the sampling frame (0.108 X 0.139). Several previous studies (Dal Cin et al., 1993; Freear and Sohl, 1994, among others) have found that a high proportion of angels are business owners \((P(B/A))\). More precise data to this effect is drawn from secondary analysis of findings reported in a recent study of Canadian angels conducted by Equinox (2001). Within its analysis of the investment patterns and frequencies of a sample of individuals known to be business angels, Equinox reported that 91 percent were also SME owners. That is,

\[
P(B/A) = P(Business\ Owner/Angel) = 0.91
\]

From, probability theory:

\[
\frac{P(A)}{P(B)} = \frac{P(A/B)}{P(B/A)} = \frac{0.0151}{0.91} = 0.166
\]

This result represents an estimate for the overall proportion of business angel investors in the general population as a fraction of the number of businesses, suggesting approximately 15,800 business angels in Canada.

Recall that at least 25 percent of informal investment activity is accounted for by business angels and that business owner-based informal investment activity in 2004 was estimated to be $7.48 billion. These results imply that during 2004, 15,800 business angels investment approximately $1.9 billion in Canada. This corresponds to approximately $53 (CCanadian) per capita, an amount that compares reasonably well with Sohl’s estimate of $75 (US) per capita in the US.

This flow of investment is a minimum because, as already noted, it is likely that some angel activity was also included among the other three categories of informal investors. Nonetheless, a flow of $1.9 billion from business angels during 2004 exceeds the total flow of institutional venture capital in the same year and is several times the $871 million invested in early stage firms by the formal, institutional, venture capital industry.

The 2002 Survey also included questions related to investors realized exits and rates of return. A total of 26.7 percent of respondent owners reported having exited from businesses in which they had invested. Table 6 shows the breakdown of the respondents estimated annualized rates of return on their informal investments.

Table 6: Rates of Return by Category of Informal Investor

<table>
<thead>
<tr>
<th>Rate of Return</th>
<th>Probable angels</th>
<th>Passive love money</th>
<th>Serial entrepreneurs</th>
<th>Active love money</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost money</td>
<td>26.7%</td>
<td>62.4%</td>
<td>50.2%</td>
<td>47.3%</td>
</tr>
<tr>
<td>1% to 50%</td>
<td>40.7%</td>
<td>25.8%</td>
<td>38.8%</td>
<td>37.0%</td>
</tr>
<tr>
<td>More than 50%</td>
<td>32.6%</td>
<td>11.8%</td>
<td>11.0%</td>
<td>15.7%</td>
</tr>
</tbody>
</table>
Investors in the first category (“probable angels”) were significantly (p-value < 0.000 based on Chi-square analysis of contingency table) less likely to lose money on their investments and significantly more likely to earn annualized rates of return of more than 50 percent compared with investors in the other categories. In addition, the distribution of rates of return realized by the probable angel grouping is very similar to the estimates reported by Mason and Harrison (2002: 224) and, like Mason and Harrison’s findings for the UK setting, angels’ return on investment exceeded that reported on deal-specific returns on institutional venture capital investments.

These results give additional substance to the belief that business angels are astute investors. Whereas non-angel investors lost money in more than half of their investments, business angels were half as likely to experience losses. However, business angels were approximately three times more likely to experience high rates of return. These data reveal that investments by family and friends are more likely than not to result in financial losses and that Gompers’ and Lerner’s (2003) admonitions need be heeded with respect to non-angels.

**SUMMARY AND DISCUSSION**

This study has examined the Canadian market for informal investment. The work drew on survey data to derive minima estimates of the aggregate flow of informal investment and to estimate the flow of investment capital from business angels, a particular segment of the informal market. It was found that the flow of informal investment was several times that of the flow of institutional venture capital, a finding consistent with other research. Moreover, it was found that the flow of investment from business angels, one category of informal investor, was substantially greater than that from formal, institutional, sources of risk capital. Finally, it was found that business angels experienced losses less frequently, and substantial gains more frequently, than did other categories of informal investor.

More precisely, the data indicated an annual flow of informal investment of at least $7.48 billion during 2004. By combining the findings from the Survey with findings from previous research, it was estimated that informal investment from business angels during 2004 was a minimum of $1.9 billion. On a per capita basis, this estimate is consistent with Sohl’s (2005) estimate of business angel activity in the US.

In addition, rates of return to, and flows of investment funds from, various categories of informal investor were estimated. Evidence was advanced that the returns on investments made by angel investors are higher than those made by non-angels, including friends and family. This finding was consistent with Mason and Harrison’s earlier findings with respect to rates of return earned by business angels in the UK.

These findings reinforce Gompers’ and Lerner’s (2003) warnings that it may be counterproductive to the economy to encourage “amateur” informal investors, but that business angels are not amateurs. In turn, this implies the need to focus more specifically tax and other forms of public policy that seek to stimulate early-stage investment. Incentives that encourage wealthy individuals to become informal investors do not necessarily create business angels. They do not endow the investors with the knowledge and experience necessary to invest wisely or to be able to act as mentors to owners of new firms. Such incentives might encourage additional investments from less sophisticated participants in the informal market leading to subsidization, at public expense, of ill-advised investments.

The need to target business angels without encouraging other categories of informal investors holds implications for public policy. If business angel investment is to be encouraged, front-end tax credits would seem to be inappropriate without a means of ensuring the investors are sufficiently sophisticated and without a means of removing the scope for fraud. Such incentives are easily appropriable by other, less expert, groups of informal investor. Alternative approaches, that have the benefit of augmenting the pool of sophisticated investors could include:

- **Initiatives that encourage syndication.** In fact, several governments are encouraging the formation of angel groups. Angel groups – a phenomenon well underway in the US but lagging in other countries – allow for: risk sharing; consolidation of information, networks and expertise possessed by co-investors; expansion of the capital base; and education of new angels. Syndicating investment with experienced investors is one of best instruments to learn the essentials of informal investing and hence to activate latent business angel’s capital.

- **Co-investment schemes,** that operate by “adding dumb public money to the smart business angels’ money” (Aerenoudt, 2005: 366). Such schemes are also being tested in various
jurisdictions and it would appear that co-investment programs may be a more direct means of encouraging investment activity among business angels.

- Enhancing business founders’ management – especially marketing – skills, a shortcoming often identified by business angels as a particular discouragement to making positive investment decisions.

The work presented here is subject to several limitations. First, the segmentation of the investment data is not as clean as might be desired. As noted, it is likely that angel investors were included among family and friends or among investor-operators of businesses. As such, the estimates presented here are minima, and are not as conclusive as might be possible with some slight modifications to the survey questionnaire. Even as it stands, however, the data demonstrates that the flow of business angel investment substantively exceeds investment made by institutional venture capitalists and benefits a broader base of firms. Moreover, firms in which the business angels had invested needed to demonstrate relatively high rates of job-creating growth in order to yield the high rates of return on the angels’ investments and to achieve relatively low failure rates. As such, programs targeted to assist business angels would seem to be good investments by governments.

Future research could usefully be focused in two directions. The first is to refine survey methods to more precisely identify the various segments within the informal capital markets. The second is to obtain updated and yet more precise estimates of the proportion of angel investors who are business owners and of the proportion of business owners who are angels.

REFERENCES


