

Research report: May 2009

Siding with the Angels

Business angel investing – promising
outcomes and effective strategies

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NESTA is the National Endowment for Science, Technology and the Arts.

Our aim is to transform the UK's capacity for innovation. We invest in early-stage companies, inform innovation policy and encourage a culture that helps innovation to flourish.

British Business Angels Association

The BBAA is the only trade association dedicated to promoting angel investing and supporting early-stage investment in the UK.

Siding with the Angels

Business angel investing – promising outcomes and effective strategies

Foreword

Business angel investing is an essential source of funding and support for a huge number of early-stage and start-up businesses. This research is the largest of its type attempted in the UK and greatly improves our understanding of angels' investment approach and experience, what returns are being made and what factors affect successful investment. It provides invaluable information to enable us both to formulate policy proposals to government to support further development and stimulation of the business angel investment market, and to identify key areas where practical actions can be taken.

Notably, the research findings set out in this document have confirmed the importance of business angels in supporting investment in very early-stage companies and a very positive picture of investment returns generated by angel investing has emerged. Through this research we have identified potential fiscal measures that could be taken by government to stimulate angel investment, including increased Enterprise Investment Scheme (EIS) tax relief for investing in early-stage micro businesses and changes to the Enterprise Management Incentive (EMI) to incentivise angels to bring their skills to the boards of their investee companies. We have also recommended that further measures should be taken to encourage the creation of angel co-investment funds and call for a national awareness-raising campaign to stimulate the angel investment market.

We would like to thank all the members of the British Business Angels Association (BBAA) for their co-operation and support with this research project and are grateful to have the expertise of Professor Rob Wiltbank in carrying out this research. He brings the rare combination of an academic specialising in this area of angel investing with personal experience as an investor. Finally, we would also especially like to thank the Angel Capital Association Educational Foundation and Kauffman Foundation, for enabling NESTA and the BBAA to have access to the significant data and methodology from the research carried out in the US angel investment market in 2007. We hope that with the lessons learned from this research we can enable the UK angel investment community to achieve its full potential impact in supporting the successful growth of early-stage businesses in our economy.

David Hunter
MD, NESTA Investments

Anthony Clarke
Chair, British Business Angels Association

May, 2009

Executive summary

1. HM Treasury and Department for Business, Enterprise and Regulatory Reform (2008) 'Enterprise: Unlocking the talent.' London: HMT and BERR. p.57.
2. EC, DG Enterprise (2002) 'Benchmarking business angels.' Brussels: EC and DG Enterprise.
3. Pierrakis, Y. and Mason, C. (2007) 'Shifting sands: The changing nature of the early-stage venture capital market in the UK.' London: NESTA. p.20.
4. Lord Sainsbury of Turville (2007) 'The Race to the Top: A Review of Government's Science and Innovation Policies.' London: TSO.
5. Mason, C.M and Harrison, R.T. (2002) Barriers to Investment in the Informal Venture Capital Sector. 'Entrepreneurship and Regional Development.' 14, pp.271-287.

After entrepreneurs develop an opportunity, and use up their own resources, they often turn to business angel investors for early investment to keep the venture growing. At this point in the development of new ventures the risk of failure is significant; many aspects of the business including customer relationships, pricing strategy, talent, and other key factors are quite unclear. Yet there are a growing number of investors known as 'business angels' willing to invest at this point.

They have become an increasingly important source of equity finance over the last decade for new and nascent businesses¹ as venture capital investors are not able to accommodate a large number of small deals with their attendant due diligence and oversight needs.² Business angels are now prominent co-investment partners in the early-stage market.³ Understanding why investors would involve themselves in anything so risky is important, given the contribution of innovative start-up businesses to the economy. Although there is no comprehensive survey of business angel activity available, an estimated 4,000 to 6,000 business angels were investing up to £1 billion annually by 2000.⁴

Despite their increasing importance, little is known about the outcomes of business angel investment and returns in the UK. Mason and Harrison⁵ conducted the first attempt to identify the returns and characteristics of the UK business angel investors, pointing out the lack of evidence on the outcomes of investments by business angels. They suggested that this "represents a significant gap in our knowledge and understanding of an important segment of the venture capital market".

This research addresses three questions:

- What are the investment outcomes to business angel investing?
- What are the characteristics of UK business angel investors?
- What strategies and practices are related to improved investment outcomes?

The data in this study is drawn from a survey of 158 UK-based angel investors in late 2008. They have invested £134 million into 1,080 angel investments between them, and have exited 406 of those investments ('exit' in this study refers to any termination of an investment, including a venture going out of business, being acquired, or going public).

The sample is limited in its size and its focus is entirely on those who are members of groups. *The conclusions drawn throughout the report need to be understood in light of these sample limitations.* There are three central implications from the study, as follows.

1. Business angel investing is risky, but overall appears to generate attractive outcomes.

- The most likely outcome in any one angel investment is failure, but 'winning' investments are very attractive. Fifty-six per cent of the exits failed to return capital, while 9 per cent generate more than ten times the capital invested.
- Because the 44 per cent of investments that generate positive exits win at a larger multiple than the costs of the negative exits, the overall return to business angel investing in the UK is 2.2 times the invested capital.
- These 9 per cent large investment exits produced nearly 80 per cent of all the positive cash flows.
- Given the holding period of just under four years, this is approximately a 22 per cent gross Internal Rate of Return (IRR).

2. Key strategic choices are significantly related to better investment outcomes.

- Angels with entrepreneurial expertise outperformed those without it, especially in earlier-stage opportunities.
- More than half of the investments were very early-stage, going into pre-revenue ventures.
- Those who invested in opportunities where they have specific industry expertise failed significantly less.
- Those who perform at least some due diligence, even just 20 hours, experienced fewer failed investments.
- After the investment is made, some involvement with the venture was related to improved investment outcomes. However, failure was greater where investors were perhaps too involved, specifically when they held management roles.
- Exits where the business angel investor had made follow-on investment in the venture were significantly less successful.

3. Tax incentives appear to have a material effect on encouraging business angel investing, and some details may help refine existing policy.

- Eighty per cent of investors surveyed have made use of the Enterprise Investment Scheme, at least once. And 57 per cent of their investments had made use of the EIS.
- Investors said that 24 per cent of their investments would not have been made without tax incentives.
- On average, it takes three years for an investment to fail, but six years to get to a win.
- The average investment size is £42,000 per investor, and an average of six investors co-invested into each venture (although 17 per cent of the venture investments were made by solo investors).
- Angel investors on average acquired 8 per cent of the venture; only 10 per cent of investments acquired more than 20 per cent of a venture.
- Most angel investing is done within 250km of the investor's home, though 25 per cent of investors were willing to make investments abroad.

Acknowledgements

This report was written by Robert E. Wiltbank, Ph.D., Associate Professor of Strategy & Entrepreneurship, Willamette University, Oregon, USA.

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Like many start-ups, this research would not have been possible without the business angel group directors and individual angel investors who generously shared their experiences. Thank you.

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NESTA and BBAA policy recommendations⁶

6. Please note that these policy recommendations are based on NESTA and BBAA's interpretation of the research findings and they do not necessarily reflect the views of the author.

Government should incentivise business angels' investments. It should support measures that raise awareness of their importance and act to increase the pool of angel investors across the UK.

This report recognises that business angels are the key source of investments in very early-stage and high-risk companies with high potential for growth. More than half of the investments made in the study were in businesses that had no revenues at the time of investment and were at very early-stage. This shows the importance of angel investing as the key initial source of high-risk investment in entrepreneurs, including university spin-outs. Angels often take considerable set up and development risks in establishing an early-stage business, prior to venture capital funding. Angels may therefore be seen as providing a vital kick-start to innovating businesses both in terms of investment and business-building skills.

It is particularly important that we attract more business angels in the current climate, to nurture the high-growth businesses of tomorrow. This would also ensure a supply of innovating businesses for ongoing investment by the later-stage venture capitalists and help to maintain the future competitiveness of the UK's business community.

This research has shown that whilst business angel investment is risky – with over 50 per cent of all deals not returning their initial stake – it can also generate attractive outcomes. The overall return to business angel investing in the UK is 2.2 times initial capital, being approximately 22 per cent IRR (Internal Rate of Return). This outcome has important implications for promoting angel investing

to wealthy and sophisticated individuals as a significant Asset Class where they are able to control investment decisions compared to the low returns from many other areas of investment.

Policy Measure 1: Increase the Enterprise Investment Scheme (EIS) tax relief from 20 per cent to 30 per cent

A higher level of EIS tax relief – moving from the current 20 per cent to 30 per cent tax relief should be provided to angel investors making very early-stage investments in micro SMEs, where significantly higher investment risks can be identified.

This research has shown that the EIS is a major incentive to individuals to make angel investments: 82 per cent of the investors in the survey had used the EIS while 57 per cent of the 1,080 investments made through investors in the survey made use of the EIS. Notably 53 per cent of the investors would have made fewer investments without tax incentives.

The EIS scheme is therefore a major instrument to encourage more angel investing. This higher level relief for investment in micro SMEs compared with the existing 20 per cent income tax break would be a recognition of higher risks in early-stage pre-revenue investment.

In addition business angels are currently forced to invest using ordinary shares to benefit from EIS. It has been noted that significant conflicts occur when it comes to investing at the next round, as venture capitalists almost always invest using preference shares. Business

angel investors should be able to invest using preference shares.

Policy Measure 2: Amend the Enterprise Management Incentive (EMI) scheme to incentivise business angels' active involvement

The current EMI scheme should be amended to provide further specific incentives to business angel investors who take an active role on the board post-investment by receiving EMI share options in recognition of their role in supporting and mentoring the businesses in which they invest.

This research has shown that, where angels with entrepreneurial or direct industry experience become involved in businesses in which they invest at a strategic level, this is likely to lead to better outcomes. The involvement of angels with industry experience led to significantly better final results, and the distribution of returns where the angel investors became a board member had significantly more positive outcomes. By comparison, where investors were less involved, it led to more negative outcomes. This offers the opportunity to incentivise angel investors with appropriate experience to become involved and spend time on the board of the investee companies. However the current EMI scheme prevents angels providing this board-level support to high-growth potential businesses, building on their business and sectoral skills, and from taking advantage of this opportunity in return for share options rather than paid remuneration. The current EMI scheme parameters therefore fail to incentivise wealthier and experienced business angel investors to join the board and support the successful growth and competitiveness of the business.

The EMI scheme should be revised to allow investors to become board members. This opportunity would offer an important incentive to individuals with core skills and experience to become active investors and to take lead angel roles, both in relation to representing syndicates and bringing key skills to the investee businesses.

Policy Measure 3: Support a national framework for angel co-investment funds

This would build on the previous Early Growth Funds/Regional Venture Capital Funds supported by government which have been shown to contribute directly to the leveraging of angel investing and overall effectiveness of deal structuring, generally through angel syndication.

Co-investment funds provide a stimulus to angels to invest and syndicate alongside the fund, providing a framework to marshal angel investment with a clear framework for due diligence and deal structuring. Currently some of the Regional Development Agencies are planning co-investment funds as part of their overall strategies for regional investment funds being put in place to build on ERDF (European Regional Development Fund) and EIB (European Investments Bank) funding support. However this is extremely patchy across the UK regions. A UK framework to support and promote angel co-investment fund development across the UK regions needs to be established by government (BERR), using both the ERDF and EIB framework, and centrally through Capital for Enterprise Ltd.

Policy Measure 4: Support a national awareness campaign and capacity building actions across the UK

This should include both a national campaign and regional promotions to recruit wealthy and experienced individuals with both capacity to invest and relevant skills to become angel investors and to build their capacity to become effective investors. The current downturn and rising unemployment will likely increase the numbers of persons with longstanding industry/professional experience who could consider becoming angel investors.

Siding with the Angels

Business angel investing – promising outcomes and effective strategies

1. Introduction

Business angel investors often provide the first significant outside capital invested in start-up companies. After an entrepreneur or team of entrepreneurs identify a business opportunity, and exhaust their own resources, they often turn to business angel investors to keep the venture growing. Without this capital, many new ventures simply cannot grow.

Investing in these early-stage companies is uniquely challenging. At this point in the life of a new venture the risk of failure is significant. The business model, customer relationships, pricing strategy, key talent, and even the product itself are subject to significant change and surprise. In the face of this uncertainty and risk, business angel and formal venture capital investors make significant commitments of capital in the hope that they can help build great new companies that propel the economy forward and create solid investment returns.

The macro economic role of entrepreneurship is the reason that research around venture investing is so important. Innovation and new venture creation are critical to economic development.⁷ Whether commercialising new technological insights or refining the business models and industry practices of existing technology, successful new ventures create wealth and jobs for the economy.

As entrepreneurs create new opportunities, some ventures show great promise and growth, and some of those will require additional capital. That capital can be provided in the form of debt or equity, but new venture risk is usually something that the banking industry avoids (with the exception of the credit card industry). Formal venture capital and business

angel investors help meet this investment need of new ventures, a role that is uniquely important at a time when credit is particularly tight.

While formal venture capital and business angel investing are similar, we know significantly less about angel investing. Formal venture capital is organised around formal partnerships, which have legal reporting requirements. As a result the activities, strategies and financial returns in formal venture capital are well publicised, and possibly even well understood. Business angel investing, on the other hand, is done by individuals investing their own money directly into opportunities that they find attractive. These small private investments, generally made with no formal reporting requirements, play a critical role in creating new companies, but are largely invisible. We know relatively little about the activity, strategies or financial returns of these business angel investors. Learning more will help us understand and potentially improve their effectiveness at providing equity to new ventures.

Recent NESTA research found that business angels have become more significant as a source of early-stage investment since 2000, increasing from 16 per cent of all early-stage deals with private involvement in 2000 to 41 per cent in 2007.⁸ Start-ups have been turning to angels where previously they relied on their own or family funds. Although there is no comprehensive survey of business angel activity available in the UK, in 2000 there were estimated to be between 4,000 and 6,000 business angels, investing up to £1 billion annually.⁹ In the US, by comparison, there are approximately 250,000 business angel investors who invested over \$26 billion (£18.3 billion) in 2007 in some 50,000 new ventures.¹⁰ With

7. Kortum, S. and Lerner, J. (2000) Assessing the contribution of venture capital to innovation. 'RAND Journal of Economics.' 31:4, pp.674–692.
8. Pierrakis, Y. and Mason, C. (2007) 'Shifting sands: The changing nature of the early-stage venture capital market in the UK.' London: NESTA. p.20.
9. Lord Sainsbury of Turville (2007) 'The Race to the Top: A Review of Government's Science and Innovation Policies.' London: TSO.
10. Center for Venture Research (2008) 'The angel investor market in 2007: mixed signs of growth.' Available at: http://wsbe.unh.edu/files/2007%20Analysis%20Report_0.pdf

a population five times that of the UK, this suggests there is over three and a half times as much business angel investment per capita in the US. The scope of angel investing, and the role it plays in supporting new ventures, suggest that more research can be critically important.

Detailed information on the outcomes of business angel investing in the UK remains sparse. Mason and Harrison in 2002 reported the first attempt to identify the returns and characteristics of the UK business angel investors. Using data on 128 exited investments, they found that 47 per cent of exits were at break even or worse (34 per cent of those at a total loss) while 23 per cent of the exits had a gross IRR of over 50 per cent. In that research they suggest that understanding the distribution and choice that lead to it “represents a significant gap in our knowledge and understanding of an important segment of the venture capital market”.¹¹ This study specifically hopes to address this gap by looking at the outcomes and strategies of angel investors affiliated with groups in the UK.

2. Methodology

This research builds on an earlier study of angel investing in the United States.¹² This study covers additional policy topics that are focused on the UK market, as well as exploring further a number of strategic areas.

For this study, all the groups of business angel investors in the UK publicly seeking deals in which to invest were identified. There may be more groups making investments, but it was not feasible to contact them. The directors and leaders of those groups invited their members to participate individually and confidentially in the research. The groups were contacted at least three times to maximise participation. Members of 31 different angel groups participated in this study.

‘Business angel investor’ is simply defined as ‘a member of an angel group’, a definition which reflects that of Professors Mason and Harrison who suggest that: “A business angel is defined as an individual acting alone or in a formal or informal syndicate who invests their own money directly in an unquoted business in which there is no family connection.”¹³

These individual angel investors participated confidentially online. The online questionnaire

Business angel investor

A person who invests their own money directly into young unquoted companies.

Exit

In this study the term exit refers to any termination of an angel investment, including a public offering of stock, an acquisition of any kind, and simply closing the business.

Multiple

The sum of money returned from an investment, divided by the sum of money they put into that particular investment. So, £1 million returned from a £500,000 investment would be a 2X return.

captures information on their experience, their preferences in angel investing, their activity, together with details, by venture, on several of their investments. Specifically, it captured data on all their angel investments that exited after 2000. In many cases the investors had exited some investments prior to 2000, but length restrictions on data collection precluded the capture of those details.

Reaching through the groups enabled the gathering of data from 158 angel investors, who had cumulatively invested £134 million into 1,080 angel investments and experienced 406 exits from those investments. This represents a response rate of approximately 18 per cent.

This method of study obviously suffers from the commonly acknowledged difficulty of identifying business angel investors,¹⁴ and the attendant problems of self-selection and survivor bias.

Self-selection bias is the possibility that these investors do not represent angel investors in the broader community; that the experience of those who choose to participate was unique or odd in some way. For example, a sample could be biased if only investors with at least some success or those with big wins or big losses, but nothing in between, decided to participate.

Without a random sample, it is not possible to completely control for this risk. However, an earlier study of US angel investors did investigate this risk. It compared the returns of angels in groups where there was a very high level of participation (thus no self-selection) to the returns in the overall sample (potential

11. Mason, C. and Harrison, R. (2002) Is it worth it? The rates of return from information venture capital investments. *Journal of Business Venturing*, 17:3, p.211.
12. That research was conducted by the author with Warren Boeker at the University of Washington, and was sponsored by the Kauffman Foundation and the Angel Capital Education Foundation. See www.kauffman.org/pdf/angel_groups_111207.pdf
13. Mason, C. and Harrison, R. (2008) ‘Developing Time Series Data on the Size and Scope of the UK Business Angel Market.’ London: BERR.
14. *Ibid.*

self-selection). In that case, no significant difference was found.¹⁵

The other potential problem is survivor bias. In this case, by sampling current business angel investors one could miss those angel investors who have been the least successful of all. They aren't in the sample because they did not 'survive' and abandoned angel investing. Sampling through groups helps to reduce this risk because angels that aren't presently active may still be reached through groups, but this bias is still difficult to control for without a longitudinal design (and even then it can persist). On the other hand, the sample of exits is taken from a set of angel investors that have a large number of ongoing investments. Statistically, positive exits take longer to achieve (an issue discussed later). This suggests that the ongoing investments may have a more positive return distribution than the exits to date. As a result, these two biases may help offset each other.

When interpreting the results of this study, it is important to remember these biases, as well as the sample size and the group affiliation of the investors. Additionally, the present data set does not have any angel investment details from Scottish investors and thus is not a complete sample of UK angel investors. For these reasons, the conclusions may not be generalised to all business angel investors, and the margin of error around the return estimates is significant and difficult to estimate because the distribution is non-normal.

Nevertheless, the methodology in this report has resulted in a unique dataset of business angel exits which enables an unprecedented evaluation of the strategic choices and practices of angel investors. The method of analysis uses categories that essentially log the extreme results into a distribution that can facilitate modelling. Moreover, all of the results are based on exited investments only (there are no estimated returns or carried values), and these exits are quite recent (70 per cent occurred from 2005 to 2008). The exits are not focused in any one industry (they in fact mirror the industries in which formal VCs invest) or in any particular group, and thus provide a broad picture of group-based UK business angel investment.

The UK business angel investor

	<i>Median</i>
Years investing:	5
Ventures founded:	2.5
Years of age:	53
Years with large company:	13

93 per cent of these angels are male.

3. The investors

This section provides a useful perspective on the people making business angel investments, and their preferred types of investments and investment practices. The tables summarise their characteristics, while the narrative describes them in more detail.

Angel investors in our sample are generally men with significant professional experience in large companies (though 24 per cent had also worked as public servants at some point). Most had also founded several new ventures as entrepreneurs themselves, though 27 per cent of the sample had not founded any new ventures. Overall, they are relatively new to angel investing, typically with five years of investing experience. Seventy per cent of the investors had been investing for no more than eight years. Virtually all had university degrees, and more than half had advanced degrees.

4. Their preferences

Several of the choices they made are interesting from a policy perspective. Most had made extensive use of the Enterprise Investment Scheme, with 82 per cent having

Angel investor preferences

- EIS was used in 57 per cent of the investments
- 28 per cent only invest within 50km of home
- 10 per cent of personal wealth is in angel investments
- 83 per cent of investments were with co-investors

15. In the US sample, the mean return for high response groups was 2.6X capital (median: 1.2X) vs. a mean of 2.4X capital (median: 1.4) for low response groups.

used EIS for at least one of their ventures; overall, 57 per cent of the investments in the sample had used the scheme. These tax programmes were fairly important to the overall activity level. Fifty-three per cent of the investors said that they would have made fewer investments without the tax incentives. In total, 24 per cent of the investments might not have been made without incentives.

Venture investing is often a local activity. Twenty-eight per cent of the investors weren't interested in opportunities more than 50km from their home. Forty-three per cent were prepared to invest within 250km. Interestingly, 25 per cent of the investors were also prepared to invest outside the UK.

The typical investor invested 10 per cent of their wealth¹⁶ in their business angel investments although 44 per cent of the sample had only invested 5 per cent of their wealth, suggesting they may have additional capital available for other angel investment opportunities.

Given the studies focus on group angel investors, co-investment is the norm. Only 17 per cent of investments had no co-investors, and 21 per cent of the investments had more than ten co-investors. Two thirds of co-investors are other angel investors.

5. Their activity

The above details on who these business angel investors are, and their investment preferences, help put the following investment details in perspective. In total, this sample has made 1,080 investments totalling £134 million. Six hundred and seventy-four of these investments are still ongoing. Ninety-eight per cent of the investments were made in 1998 or more

Business angel investments

Total investments: 1,080 in this sample
 Total invested: £134 million in this sample
 Exits: 406 in this sample
 Investment size per investor: £42,000
 Investments per investor: 6
 Pre-money valuation: Median: £875,000
 Mean: £1.7 million
 Stage: 15 per cent seed
 36 per cent start-up

recently, and 70 per cent of the exits occurred between 2005 and 2008, so the sample is extremely current.

The median amount of money invested in total by each investor was £220,000, though there is considerable variation. Thirty per cent have invested £100,000 or less, and 12 per cent had invested more than £1 million. Overall, these investors had made about six business angel investments each, with the average investment being £42,000. Ninety per cent of individual investments made were for less than £100,000.

In the previous two years the investors had been quite active, reviewing about 20 investment opportunities each, and starting three new investments on average. A quarter of the investors had reviewed more than 50 investments in the past two years. Eighty-five per cent of the sample had made at least one angel investment in the previous two years.

These investments typically acquired 8 per cent of the company. Only 10 per cent of the investments acquired 20 per cent or more of the ownership of a company.¹⁷ Any one firm often sells more than 8 per cent of its equity in

Pre-money and post-money valuation

Pre-money valuation is the value of the venture before the investment is made, whereas post-money valuation is the value of the venture including the cash raised in the round of investment. For example, a £500,000 investment into a firm with a 'pre' of £1 million results in a 'post' of £1.5 million and an ownership position of $33\frac{1}{3}$ per cent, all other things being equal.

a round, but does so to more than one angel investor. Eighty-five per cent of the ventures had a pre-money valuation of less than £2.5 million, and 82 per cent had a post-money valuation of less than £3 million. On average, there were five angel investors co-investing in any one round.

More than half of the investments had no revenues at the time the investment was made, very early-stage investments. Fifteen per cent of the investments were characterised as seed stage investments, 36 per cent as start-up stage investments, and 36 per cent as early growth.¹⁸ Typically, £125,000 had been invested before the angel investors made their investment. However, in a quarter of cases

- 16. Wealth is simply defined as total net worth.
- 17. This is per angel investor, not per round of investment.
- 18. The standard definitions from the BVCA were used to characterise the development stages of each venture. Seed stage is the concept stage, whereas start-up refers to the first three years of the company's establishment.

there had been no equity capital invested before the business angels added their money. It is very unusual for formal venture capital to make investment ventures at this early stage of development.

6. Is it worth it?

All of this investment preference and activity detail simply begs the question, is it worth it? Figure 1 details the distribution of outcomes across five categories of return, based on the multiples experienced by the angel investor in each exited investment. The horizontal axis shows the categories, with losing investments (those where the return of cash was less than the investment made) to the left, and very large wins to the right. The vertical axis is simply the percentage of exits that occurred in that category.

Fifty-six per cent of exited investments were at a loss, with most of them losing their whole investment

If investing life were perfect, bars to the left of the chart would be the smallest. That the 'less than 1X' category is the largest simply emphasises the risk involved in early-stage investing. In any one investment angel investors' most likely outcome is to lose money. Fifty-six per cent of the exits were at a loss, and in most cases the entire investment is lost

(15 per cent of the exits were at a loss but returned some capital).

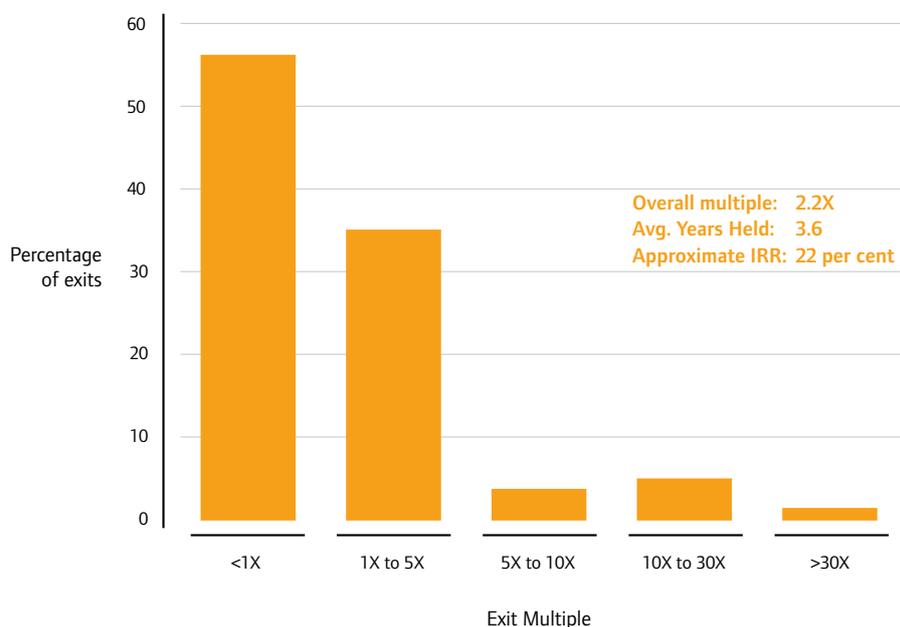
To make that single investment these investors evaluated, on average, seven investments and decided that it was the most promising. In spite of that selection process, they were still more often wrong than right. However, one must keep this in perspective. A similar 'error rate' occurs with US angel investors, formal venture capital investing, and even corporate acquisitions. It is simply very difficult to create and capture value from new things.

But 44 per cent of exits were at substantial gains, leading to an average multiple of 2.2

Obviously each investor hopes that their investments will be among positive exits, the 44 per cent of exits that lead to positive returns. One appealing aspect of early-stage investing is that the size of loss is only up to the total amount invested but the size of your gain is genuinely uncapped. In this sample, 35 per cent of the exits made solid returns, generating between 1X and 5X their investment, and 9 per cent were at sizeable gains of ten times investment or more. Overall, this resulted in a mean investment return of 2.2 times investment in 3.6 years, approximately a 22 per cent gross Internal Rate of Return (IRR).¹⁹ For perspective, the US multiple from a similar research study was 2.6 times the investment in 3.5 years; an estimated gross IRR of 27 per cent. Additionally, Mason and

19. IRR is a standard annualised effective compounded return rate designed to show the value of investments. The term gross IRR, reflects the fact that the IRR reported here doesn't include the cost of the angel investors' time in making and managing their investments. In the formal venture capital world, the net IRR to limited partners includes, traditionally a 2 per cent annual fee for the costs of the VC, while the multiples on any individual deal reported by a VC generally don't allocate this fee to any one particular deal, and thus approximate a 'gross IRR' estimation.

Figure 1: Distribution of angel investment returns



Harrison's 2002 study, using data on 128 exited investments, found that 47 per cent of exits were at break even or worse (34 per cent of those at a total loss) while 23 per cent of the exits had a gross IRR of over 50 per cent.

However, the returns are NOT normally distributed around the mean

In this sample, 9 per cent of the exits produced 80 per cent of the cash returned. In the US sample, 10 per cent of the exits produced 90 per cent of all the cash returned. It is not uncommon, therefore, for a group of angel investors to consist of a quarter of members who love angel investing, as they've had successful investments, and three-quarters of members hoping that their investments will work out. However, with a portfolio of investments, the probability that any individual investor can be 'in the black' is about 60 per cent.²⁰

The final note on the distribution of returns to business angel investing relates to the holding period for angel investors. Angel investments are clearly illiquid, long-term investments. The average holding period in this sample is 3.6 years, from the initial investment to the exit, with essentially no liquidity options during that period. Additionally, winning exits take significantly longer to reach than losing exits. In this sample, exits at a loss took an average of 3.2 years to 'accomplish' while exits where returns exceeded ten times the investment took approximately eight years.

7. Strategic choices and practices

It is academically interesting to understand the distribution of returns above, useful to policy making as well as to considering whether to begin making angel investments. It is likely more interesting to practising angel investors to identify strategies that might lead to unfair advantages (meant in a positive light). Essentially, are their strategies that might lead to consistently better outcomes?

It is tricky to draw hard and fast conclusions in a world where the wins are not normally distributed, and luck plays a central role. There is no 'golden rule' which guarantees that if you do X, Y, and Z you will be successful. There are, however, some factors that appear systematically related to better outcomes. These relate to expertise, due diligence, interaction, and follow-on investing:

- Staying connected to your expertise is a good idea.
- Even a relatively small amount of due diligence helps avoid failure.
- Interaction post-investment is valuable to a point.
- Making follow-on investments is significantly related to lower returns.

These empirical assertions are examined in detail below, enabling an evaluation of the strength of the relationships. Given the methodology limitations (discussed earlier) and the sample size, it is important to consider them carefully in any approach to angel investing. The null hypothesis in most of these arguments would likely be that none of these things is related to outcomes because creating successful new ventures is extremely complicated and involves a degree of luck. Good arguments can also be made in other directions. However, the points detailed below do reflect this sample of angel investor outcomes, and are consistent with the empirical findings of earlier US studies.

7.1 Stay connected to your expertise

This research investigated the impact of entrepreneurial expertise and industry expertise, both of which are particularly relevant to angel investing. Because angel investment success is closely connected to entrepreneurial success, an angel investor with a strong entrepreneurial background may excel at selecting and coaching entrepreneurs and new ventures. Their expertise was measured as the number of ventures they had founded, not as an angel investor, but as an entrepreneur.

ANOVA comparisons²¹ and regression analysis show that more entrepreneurial experience is significantly related to better outcomes. Table 1 shows Ordinary Least Squares (OLS) regression results for the variables throughout this discussion, and demonstrates the significantly positive impact of entrepreneurial expertise on investment outcomes. Also, this direct effect interacts with the stage of investment: when early-stage investments are made by individuals with more entrepreneurial experience, they experience even better results.

Figure 2 gives a sense of the material difference in the distribution of returns, illustrating the extent to which entrepreneurial experience is related to greater success. Splitting the sample at the median for number

20. This figure was determined from US angel investors. The present UK sample of investors does not contain enough exits to make this calculation directly for UK angels.

21. Analysis of variance between groups (ANOVA), a statistical model.

of ventures founded, the light orange bars show the distribution for low entrepreneurial expertise, the dark orange bars show high expertise. There is a moderate reduction in failures, with more exits in the larger return categories. Those who have founded three or more enterprises are significantly less likely to lose money and significantly more likely to make very substantial returns than those with little or no such experience.

At least two implications are important. First, attracting successful entrepreneurs into angel investing may be a good idea. Second, someone without entrepreneurial expertise should be particularly careful investing in extremely early-stage investments.

In addition to entrepreneurial expertise, the expertise of the angel investor in the industry of the venture was also important. For each investment, the investor reported their years of experience in the industry of the venture. In 45 per cent of the exits in this sample, the angels reported having related industry experience particular to that venture; in the other 55 per

cent they reported having no experience in the venture's industry at all. In regression analysis, specific industry expertise was significantly positively ($p=.04$) related to better exit results. Figure 3 shows that having specific industry experience is significantly related to experiencing fewer failures.

All of this raises an important question for angel investors in groups. With co-investors and broad deal flow, does it make a difference if another member of the investment group has expertise, but the specific angel investor does not have expertise to that investment? The data in this study suggest that it is at least critical that those with expertise are significantly involved – even leading the way – in an investment. But more research is needed to test this hypothesis.

One of the central tensions in angel investing is the dilemma between investing in the 'best' deals as opposed to only investing in deals where one has expertise. This data suggest that the 'best' deal is not independent of one's expertise.

Table 1: Regression analysis of expertise and outcomes

Multiple Category 5*			
	Std	Coeff	sig
Ventures founded	0.481	0.00	
Ventures founded X early-stage		0.234	0.06
Industry expertise**			0.252 0.04
Due diligence	0.389	0.01	0.471 0.01
Board member	0.333	0.01	0.507 0.00
Managerial role	-0.342	0.01	-0.415 0.00
Follow-on investment	-0.188	0.07	-0.271 0.03
Adj R ²	0.44		0.27

* Multiple Category 5 is the dependent variable, and categorises the multiples into the five groups from the x-axis of the charts shown in this report. It reduces the effect of the non-normal distribution of exit events, similar to logging skewed variables.

** Entrepreneurial expertise and Industry expertise are related, people who investors who founded more venture also had more industry expertise related to their investments.

Figure 2: Outcome split by entrepreneurial experience

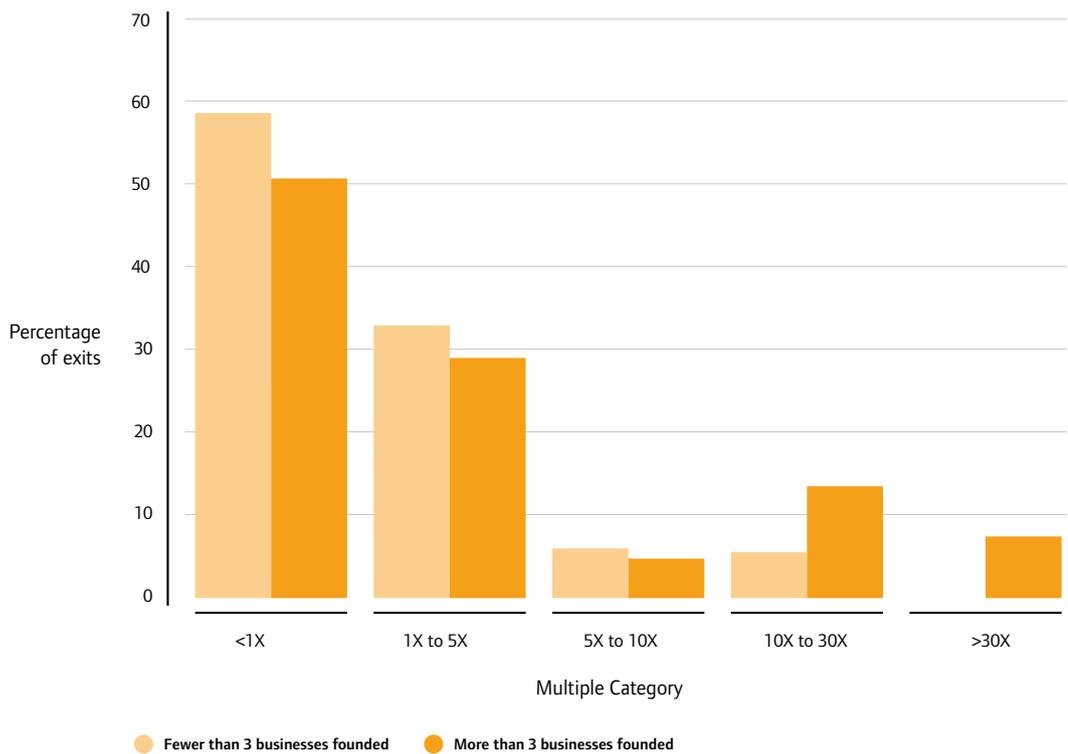
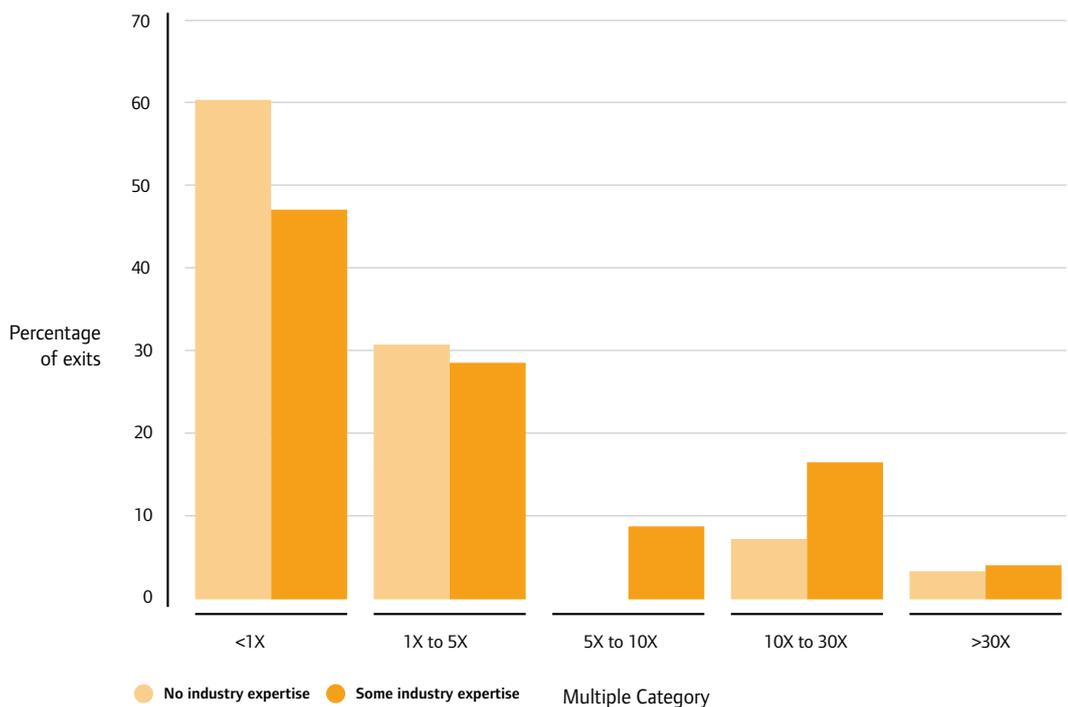


Figure 3: Outcomes split by industry expertise

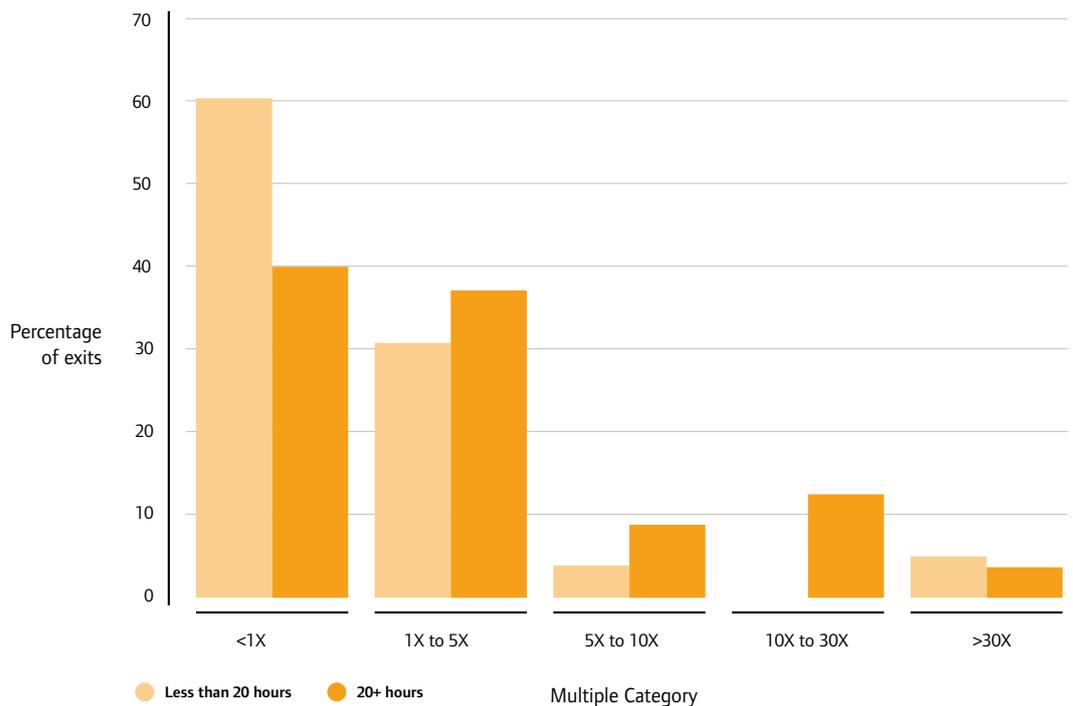


7.2 Do at least 20 hours of solid due diligence

Expertise is only relevant when it is applied, obviously. One way to apply it is in deal selection, evaluating the details and potential of many ventures before ultimately choosing an opportunity that is particularly attractive. Unfortunately, performing due diligence, even for those who love angel investing, isn't generally the most enjoyable part of the operation. As a result, it is often minimized and avoided. Empirically, however, this is a bad idea.

The median amount of time spent on due diligence in this sample is 20 hours, though a full 25 per cent of the investments in this sample were made with less than one day of due diligence. By comparison, formal venture capital investors regularly spend hundreds of hours evaluating potential investments before making a commitment. Figure 4 shows that those investments made where the investor spent at least 20 hours of due diligence experience significantly fewer failures than those where less due diligence was involved (though there are still some very successful investments made with little investigation).

Figure 4: Outcomes split by due diligence



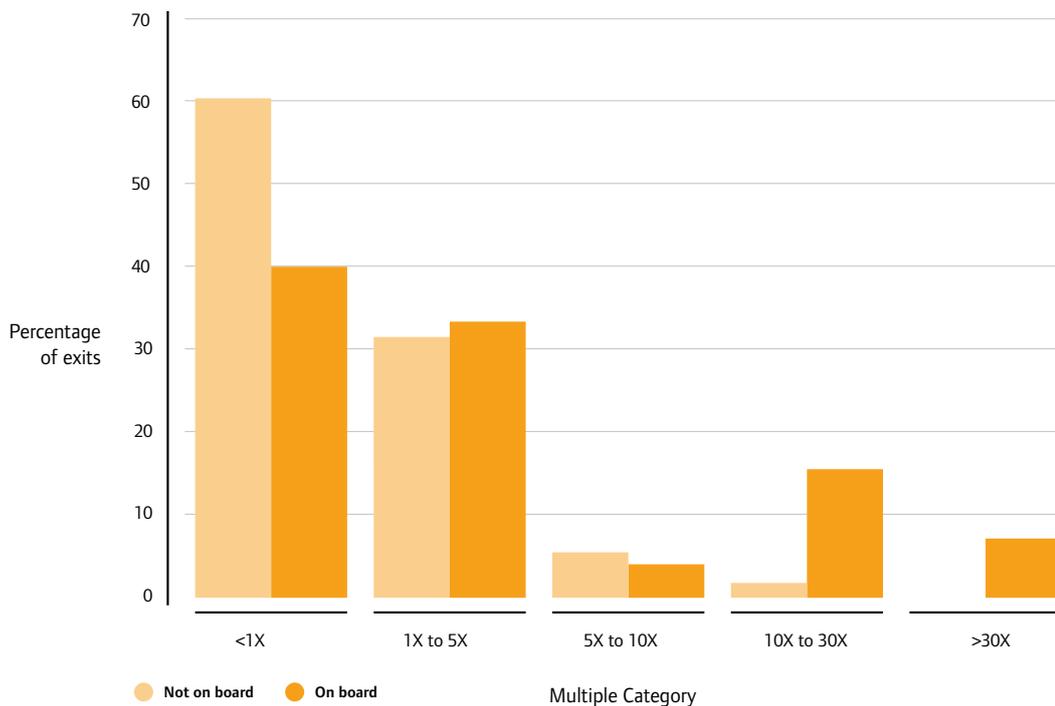
7.3 Interaction post-investment is valuable, to a point

Another way that expertise is applied to an early-stage investment is through participation in the venture after the investment is made. This can come through coaching, board membership, introductions or even operational involvement. Table 1 showed that the returns where the angel investor was involved as a board member were significantly more positive. This is not to say that one should push to be on the board because it causes better outcomes, but simply that there is a strong relationship between situations where the investor was a fit for the needs of the board and experiencing better outcomes. At this point one can only conjecture as to why. More active oversight? Application of their expertise? It merits more research.

To triangulate the role of interacting with ventures after the investment is made, the outcomes for investors that simply stated they were passive (about 40 per cent of the sample) were also evaluated. They experienced significantly more investment failures. Additionally, splitting the sample on the median of a variable measuring the frequency of interaction (daily/weekly/monthly vs. quarterly/annually/rarely) shows the same effect as Figure 5 for board involvement. More interaction was significantly related to better outcomes.

That said, there may be limits to involvement; investors may not want to be over-involved. While it was relatively rare – just 13 per cent of investments – where the angel investor took a managerial role their returns were significantly less attractive, as was shown in Table 1.

Figure 5: Outcomes split by board involvement



7.4. Follow-on investments are tricky, keep the bar high

In 29 per cent of the exits, investors reported that they had made additional investments into the same company. This did not always work to the investors' advantage. Table 1 shows that the investment outcomes from these exits, where the same angel investor made additional investment into the same company, were significantly less attractive than the overall distribution of returns.

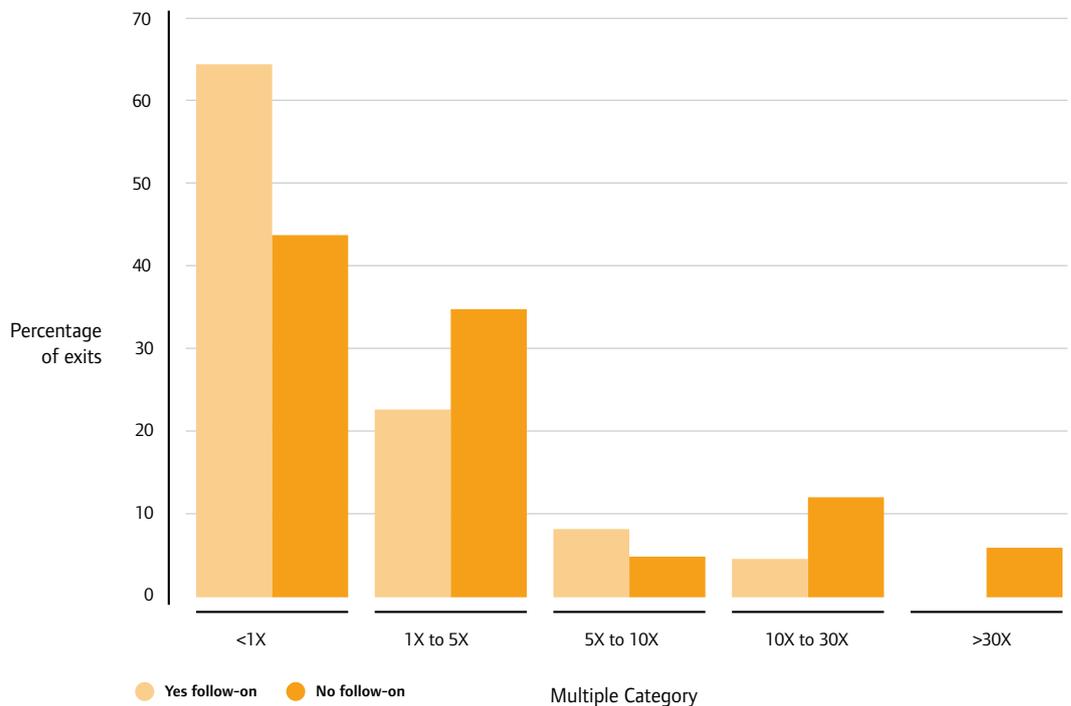
There are many reasons for making follow-on investments. One of the best arguments in their favour is protection against loss of ownership position or 'dilution'. However, since the most common outcome of a new venture investment is failure, dilution is apparently not the greatest threat to success. Escalation

of commitment and the relationships involved in making early-stage investments, not to mention the genuine uncertainty involved, apparently make it very difficult to make good investment decisions in follow-on scenarios.

Figure 6 shows that investments without follow-on activity failed significantly less often, and had larger wins.²² It is important to note, however, that the overall multiple for those exits with follow-on activity is still a positive return, a 1.2X multiple. As a result, one has to be really discerning about making follow-on investments. Is it 'throwing good money after bad'? It's not an easy question to answer. Generally, the data suggest that further diversification into more deals is more attractive than making follow-on investments in one's existing companies.

22. It is important to note that because only 29 per cent of the sample was in the 'follow-on' category, it is less reliable to interpret the 'wins' as significantly different, but the occurrence of failure is significantly higher for investments with follow-on activity. This negative relationship was also significant in the exits of angel investors in the US.

Figure 6: Outcomes split by follow-on investment



8. Conclusion

This study reports on the experience of 158 business angel investors in the UK. As a group, they made 1,080 investments totaling £134 million. Six hundred and seventy-four of these investments are still ongoing. Ninety-eight per cent of the investments were made in 1998 or more recently, and 70 per cent of the exits occurred between 2005 and 2008.

In the overall market for angel investment, this sample is miniscule. Further research is of course necessary to evaluate the robustness of the results. This is, however, the only study of this depth on the outcomes and strategies of UK business angel exits. The broad conclusion is that business angel investments can be made effectively with reasonably attractive returns, and that several responsible business practices can materially improve the prospects of business angel investors.

1. Business angel investing is risky, but overall appears to generate attractive outcomes.

The overall return of 2.2 times one's capital investment in just under four years compares favourably to other types of investment. This is in spite of the fact that angel investors are not generally professional investors and they are making investments in particularly risky ventures. This overall return, however, is not normally distributed; most exits are failed investments, with 9 per cent of the exits generating 80 per cent of the positive cash flows.

2. Key strategic choices are significantly related to better investment outcomes.

Investing in areas where one's expertise is particularly suited, and doing so with a reasonable amount of deliberate research and investigation should significantly improve one's investment prospects. Being involved post-investment was related to better outcomes, particularly where the investor was a fit for the board, although it may be possible to be over-involved, where angel investors who took management roles experienced worse outcomes. Finally, follow-on investing was related to more investment failure, highlighting a tension between ensuring venture survival and the need for investor diversification.

3. Tax incentives encourage business angel investing.

Tax incentives significantly encouraged the activity of the angel investors in this study. Many of their investments would not have

been made without incentives, and most investors knew of the incentives and used them at least once. Additional research into the details of investments made with incentives, particularly the ones where the investor would not have made the investment without those incentives, is essential. Understanding these investments could help ensure that those investments are not sub-par in some fashion, and help to minimize unintended policy consequences.

From an investor perspective, going forward ought to involve emphasis on these ideas:

- Stay connected to entrepreneurial and industry expertise.
- Even a relatively small amount of due diligence can help avoid failures.
- Interaction post investment is valuable, but be careful where managerial roles are involved.
- Follow-on investments are significantly related to lower returns, although the multiple is still 1.2X in these follow-on investments.

One additional outcome of this research is to demonstrate the pragmatic usefulness of research in this area. It is quite difficult to gather data from angel investors, yet incredibly valuable. With the interest and methods to more systematically study the effectiveness of business angel investors it may be possible to significantly enhance the effectiveness of job and wealth creation through new ventures. This is of critical importance to the overall economy.

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