

SMEs

in a global economy conference

**“Sustaining SME Innovation, Competitiveness and
Development in the Global Economy”**

**12–13 July, 2002
Wollongong, Australia**



PROCEEDINGS

Edited by Charles Harvie & Boon-Chye Lee

‘Centre for SME Research and Development’

Published in Wollongong Australia by:

Centre for SME Research & Development
University of Wollongong NSW 2522
email: charvie@uow.edu.au

Conference website:

<http://www.uow.edu.au/commerce/econ/smeconference>

Centre for SME Research & Development website:

<http://www.uow.edu.au/commerce/econ/smecentre>

ISBN 0 86418 706 8

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CD-Rom cover design by Robert Hood

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A WELCOME FROM THE CONVENORS

On behalf of the Organising Committee, it is our great pleasure to welcome all conference participants to the second SMEs in a Global Economy Conference.

The conference theme is 'Sustaining SME Innovation, Competitiveness and Development in the Global Economy', which is of considerable contemporary relevance for the SME sectors of the East Asian economies as well as globally.

The conference is a truly international one, with participants from some 10 different countries in Asia and Europe.

All papers included in the conference proceedings were subject to a peer review, specifically in the form of a blind review by two scholars. After the completion of this process some 44 papers were accepted. The papers included cover a number of issues that are of interest to SME researchers, practitioners and policy makers. The quality of the papers, the diversity of the issues covered, and their contemporary relevance auger well for an informative, stimulating and highly productive exchange of views.

The success of any conference fundamentally depends upon the generous time and administrative and financial assistance provided by a number of people. In particular we wish to express our thanks to:

- The conference administrative assistant, Sonya McKay, for her tireless efforts, enthusiasm and professionalism in the administration of this conference under considerable pressure and the need to meet tight deadlines;
- The former International Business Research Institute, especially its former Director Professor Tim Turpin for his enthusiastic support of the conference during its embryonic stage;
- The Faculty of Commerce and Department of Economics, University of Wollongong for financial and other assistance provided;
- The Centre for SME Research and Development and assistance provided by its members;
- Kavoos Mohannak, James Nguyen and Elias Sanidas for assistance in reviewing the papers submitted;
- The session chairs, discussants and, most importantly, paper contributors.

We hope you enjoy the conference and your brief stay in Wollongong.

Associate Professor Charles Harvie
Conference co-convenor and co-editor

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VENTURE CAPITAL: MATURATION OR STAGNATION?

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ABSTRACT

Numerous researchers have pointed out the differences between venture capital in the United States and Europe; some have focused on the differences between venture capital in the United States and Asia; a few have noted the differences between the industry in the United States and other regions. Cultural attitudes toward entrepreneurship or toward risk taking in investment have been used to explain some of these differences. Few researchers have focused on the venture capitalists themselves, their training and their changing attitudes.

Venture capital has changed. Having its origins in the moneyed classes in the United States, venture capitalists successfully created greater wealth for those willing to face the uncertainty involved in high risk, potentially high return, new ventures. That success, and the economic growth associated with it, became the 'Holy Grail', sought by individuals and by nations. The industry grew and matured. Governments tried to stimulate new or further venture capital fund development. More capital flowed into the hands of professional financial managers, trained in concepts of risk diversification and hedging investment strategies. The market place captured venture capital and venture capitalists succumbed to economic rationalism.

The investment strategies of venture capitalists, as reported in research papers and government reports from the past 20 years, have been examined to determine the specific differences between regions of the world. A longitudinal analysis has been undertaken on the industry in the United States and Australia; while a cross sectional analysis has been performed on these countries and with the addition of Hong Kong and the European Union. It can be seen that over time there is an increase in capital flows but a gradual change in the type of risks undertaken by investors. It would appear that current venture capitalists are, in all regions, conservative in their investment strategies.

INDUSTRY BACKGROUND

The first use of the term 'venture capital' is reputed to have occurred in 1946 in a discussion between JH Whitney and Benno Schmidt. Whitney, who had inherited \$US 179 million, had founded an investment development fund whose purpose was to supply capital to those who had difficulty obtaining it from more traditional sources. When Whitney asked Schmidt how this fund could be separated, in the minds of the public, from investment banks, Schmidt suggested the term 'venture capital' (Gallese, 1990, 33). Whitney's original impulse to differentiate his fund's practices from investment bankers worked, at least for a period. Venture capital became synonymous with risky, potentially high return technological investments.

Beginning in the early '80's, those writing about venture capital as well as venture capitalists themselves began to differentiate between 'traditional' or 'classical' venture capital and venture capital as practiced 'today'. The industry was said to be "in the process of becoming more structured and rational, more mature and more efficient" (Brophy, 1981, 26). Traditional venture capital was still associated with speculation or risk taking with an emphasis on new ventures, often technological ones. It was 'private' money, professionally managed always growth oriented and always providing management assistance. While venture capitalists did not necessarily take voting control or provide equity, they were always interested in taking rewards through capital gains (Dauten, 1951, 278; Bylinsky, 1967, 104; Dorsey, 1977). However, a 'new breed' of venture capitalist was coming into the industry with the result that investments were being made in later stages of enterprise development (Dizzard, 1982, 117; Adler, 1984, 6; Kotkin, 1984,66).

One explanation for this shift in investment emphasis in the venture capital industry was that it had become a "victim of its own successes" (Kotkin, 1984, 66). Briefly, investors, seeing the high returns in the industry, wanted some of the action. Money flooded into the hands of venture capitalists who sought assistance in placing this capital under management. They turned to the business schools for apprentices. These new market entrants applied the principles learned in tertiary institutions to their investments, trading off higher returns for lower risks. In addition, the large sums of money under management required monitoring and, with few trained and experienced personnel to participate on the boards of young and struggling companies, investors found it easier to place larger tranches of funds in later stage investments. The transformation in venture capital investing was hurried by the expectations of the fiduciaries of investor groups such as pension funds. Large fund managers were not used to taking high risks and limited the sorts of investments that could be made with their capital (Bygrave and Timmons, 1992).

Research examining this shift in the focus of venture capital has provided explanations ranging from those already mentioned, such as higher levels of capital (Kotkin, 1984) and the influence of pension funds (Bygrave and Timmons, 1992) to economic cycles affecting venture capital exits through IPOs (Gompers, 1998). However, little research has targeted the changing venture capitalist. Early venture capitalists such as Whitney and Hillman came to venture capital with a variety of backgrounds. Hillman, for example, was on the board of PNC Financial, General Electric, Cummins Engines and Chemical New York (Slutsker, 1983). He had, at least at the board level, a broad exposure to industry. General Doriot, often considered the father of venture capital (Bygrave & Timmons, 1992), was typical of the first American venture capitalists in that he was not primarily a financier. Holding the rank of a brigadier general in the U.S. Army, he was a manager of people, not capital. At the Pentagon he was a planner and a director of research and development for the war department (Bylinsky, 1967). These are no longer the typical venture capitalists.

A quick glance through the current lists of venture capitalists in Asia, Europe, Australia, and even America shows a high number of individuals with business school training (68%, 70%, 68% and 64% respectively). Many have all their degrees in commerce. Even those with other first degrees usually have MBAs and many of these are from the same schools. One implication of this is that the theories taught in studies

of commerce, those which emphasise the control of risk through diversification, that teach how to hedge investments in order to reduce risk, which emphasise the rational nature of economic man over the psychological and social aspects, the assumption of efficient markets when determining price, and believing that all available information is reflected in stock prices, have changed the strategies employed in the venture capital industry. While not asserting that such training is solely responsible for the flattened returns now associated with the industry (Murray, 1998; Mason and Harrison, 2000), it is worth examining the changing profile of industry players.

In this paper the background of venture capitalists today and a generation ago are examined in order to determine whether a shift in the training and experience of industry players can be associated with a shift in the investment strategies employed by venture capital funds. While only a preliminary exploration of this relationship is undertaken, if such an association is confirmed it has implications for policy makers and national economic incentive programs around the world.

This paper is organised as follows. The next section covers the approach used to determine the changes that have occurred in venture capital and the training of venture capitalists from various parts of the world. There follows a description of the characteristics of venture capital and venture capitalists in the United States and Australia from two periods, 1987 and 2002. Venture capitalists from both Europe and Hong Kong are also assessed although the only data available on these industry players is from 2002. An analysis of the data collected, using descriptive statistics, and non-parametric tests of significance is undertaken to determine whether there are any significant differences between groups in countries or over time. Should differences in training exist in parallel with changes in industry focus, it may be inferred (although not proven) that there is a relationship between training and investment strategies. Finally, conclusions are drawn about the future of venture capital and, particularly, the role of policy makers in furthering a healthy industry.

METHODOLOGY

Information on strategies employed in venture capital both in the mid-1980's and today has been gathered from academic literature, government and media publications. The data is assessed as a longitudinal analysis of risk and venture capital investment strategies. The literature reviewed had suggested that changes in industry strategies were gradual, thus a year-by-year study was considered inappropriate. Instead, a minimal period that could yet demonstrate a new generation of industry players was estimated to be around 15 years. Because the study was begun in 2002, the 15 year generational analysis required an examination of annual reports that listed the qualifications and experience of the fund's major participants as far back as 1987. This information was available in only two of the four regions under examination. This data was then compiled and compared to current information made available by venture capital firms on the internet in all four regions, Australia, Asia (Hong Kong), the United States and Europe.

An analysis of industry players, using descriptive statistics, was undertaken using SPSS for windows. First simple frequencies were employed to determine the percentages of individuals falling into various categories. It was apparent that changes

had occurred; Chi-squared tests were then run to determine the significance, if any, of these changes.

Examining the data collected herein through the perspective of economic and institutional theory provides insights into the direction in which the industry is heading. It also allows us to identify changes that have occurred over time that parallel changes in managers' backgrounds. Because the evolution of institutions can lead to either "economic growth or to stagnation and economic decline" (Snooks, 1993,143), the understanding gained from this analysis is translated into suggestions for venture capital policies that support the former and avoid the latter.

A LONGITUDINAL ANALYSIS OF RISK AND VENTURE CAPITAL INDUSTRY STRATEGIES

Venture capitalists are and have always been as risk-averse as any rational investor (Wells, 1974, p.161). However, the strategies employed by venture capitalists to minimise risk have varied over time. Not only have venture capitalists congregated in particular regions, the northeast and west of the United States (Brophy 1984; Bygrave, Timmons and Fast 1984) or the major capital cities in Australia, there was also general agreement that the venture capital industry had become increasingly specialised (Robinson 1987; Gorman 1989; Swartz 1991). This specialisation, at least in the earlier period being studied herein, limited the extent to which risk could be avoided through diversification (Blair, 1985, p.5). Stage and technology preferences, as well as geographical preferences were also found in the research undertaken by Tyebjee and Bruno (1984), again indicating investment strategies influenced by factors other than risk, at least in the United States, at that time.

Venture capital investors, retired from successful business ventures, brought a repertoire of business skills and contacts as well as money to the endeavour. Entrepreneurs came to value these contributions as much if not more than the financial assistance provided (Sweeting, 1991, p.6; Miller, 1985, p.116). Venture capitalists used their specialised knowledge to inform their due diligence, and their expertise in particular areas to assist their portfolio companies, thus directly reducing the risk of their investments.

The efforts of venture capitalists to manage the risks of their portfolio companies, with their own expertise in business development, created phenomenal economic growth. Claims about returns in the industry varied, Robinson (1987), who reported the results of long-term investments based on capital gains achieved after tax, found a range of returns for various funds between 25-40%. Bygrave (1989) found that returns to venture capital funds averaged around 20% over the last forty years with a peak at 32% in 1980¹.

Such returns are attractive. Money flooded into the hands of venture capitalists who sought assistance in placing this capital under management. They turned to the business schools for apprentices. By the early 1980's a shift had occurred in the levels of experience held by venture capital managers. Those with fifteen to twenty years of

¹ These returns then started to drop until, at the end of 1985, they were less than 10% (Bygrave *et al*, 1989).

experience were being superseded by those with only two to three years (Dizzard, 1982, p.106; Roberts, 1983; Brophy, 1984, p.6). The need to draw on a less experienced, albeit a well-trained, new generation of venture capitalists resulted in a gradual shift of emphasis in venture capital (Anon., 1984, p.28; Ham, 1984, p.22). One that appears to have continued to today. Thus a comparison is made, in this paper, between the focus of investment strategies 15 years ago and those prevalent today.

The majority of the new generation of venture capitalists were said, in the '80's to have a business school background (Dizzard, 1982, p.106; Bygrave, 1989, p.74). It would appear that in much of the world this is even more true today. A second comparison, made in this paper, is between the educational and experiential backgrounds of venture capitalists 15 years ago and today. Those with business school backgrounds, it is assumed will approach investments more conservatively due, at least in part, to their academic financial training. This training has re-enforced the disillusion with technology investments that resulted from new issue market failures in 1984 (Juilland, 1987, p.31) and has altered investment strategies and moved them away from early stage investments (Gompers, 1998).

Research undertaken into risks borne by those investing in smaller innovative growth businesses, hypothesises that the risk of loss on the investment decreases as the venture matures (Novotny and Searles, 1971; Hoban, 1976; Bancroft and Burgin, 1977; Dorsey, 1977; Thackray, 1981; Tobias, 1982; Torpey and Viscione, 1987; Marshman and Schlank, 1987; Bygrave, 1989). Given the need to decrease uncertainty, to practice techniques for controlling risk, and as a consequence of the diminished risks associated with later stage investments, the newer venture capitalists would be expected employ investment strategies that include a predominance of late stage companies in their portfolios.

REGIONAL DIFFERENCES IN VENTURE CAPITAL

The European and Australian venture capital industries were really only beginning development in the mid-1980's, while the Asian industry could not be said to have begun until the early 1990s. All began their practice by adopting the strategies that were being used by their counterparts in the United States. Asian venture capitalists, those trained in the American tradition, made some investments in early stage ventures but the majority of private equity was and continues to be invested in the high growth technology and life science sectors; management buyouts predominate² (Bushrod, 2001; Naqi, 2002). The European industry has never focused on early stage investments and had been primarily known for late stage and non-technological investments (Rausch, 1999). Australia began with a focus on early stage investments by setting up Management Investment Companies (MIC's) to cater to the requirements of businesses needing seed capital (Espie, 1983; BIE, 1987; *MICLB Annual Reports*, 1984-91). The scale of these MICs, with relatively low levels of capital under management³, meant that they could not directly finance projects

² The statistics given in Table 1, based on information from the *Asian Venture Capital Journal*, contradict this common assertion among researchers, at least for Hong Kong. An explanation for the disparity lies in the controlling interests of US funds in Hong Kong.

³ A \$20 million maximum of tax concessional capital could be raised by MICs in any given year (McKeon and Ryan, 1989, p 384). Only venture capital companies that were licensed by the MICLB

needing \$3-5 million dollars in the later stages (some of these funds had less than \$A5 million to invest (DITAC, 1988)). The need for an increased capital base was obvious and, indeed, led to a number of mergers among small Australian funds. By the time the MIC programme ended, in 1991, a new initiative focusing on later stage and larger investments was promulgated through another Government initiative, Pooled Development Funds (PDFs). The focus of PDFs was on later stage investments including but not limited to those in newly issued ordinary shares provided the total value of the company did not exceed \$A30 million. Additionally PDFs were only allowed to take minority positions in their portfolio companies (*PDF Act*, 1992). As with their Asian, European and American counterparts, most of the new players, and many of the experienced venture capitalists as well, found that risks were greatly reduced when investments were concentrated in the later stages of a portfolio company's development (Dizzard, 1982, p.108; Juilland, 1987, p.31).

A study by Manigart *et al.* (2002) randomly sampled venture capitalists from four European countries and the United States. They felt that their results were "representative of the countries studied" (p.300) despite the data on investment stages being different from that put out by the European Venture Capital Association. The stage distribution of investments suggests that while 46% of United States investments are in early stage companies only 17% of the European countries sampled⁴ had investments in these stages. According to the *Asian Venture Capital Journal* (1999), 39% of venture capital is invested in seed and start-up financing in Hong Kong. At the other extreme, 50% of the European countries in the Mangart sample were involved in acquisitions, buyouts and other late stage investments, compared to 23% in the United States and only 14% in Hong Kong. Finally, the European and American samples had similar proportions of their investments in expansion and development capital (33% and 31% respectively) while Hong Kong had a very large proportion (47%) of its investments in portfolio companies at this stage of investment. Australia, according to the *Australian Venture Capital Journal* (2001, p.8), has had an upsurge in early stage investments of 28% at the seed level and 50.7% at the start-up level. This translates into 30.2% of invested capital being placed with early stage portfolio companies. Also providing a strong contrast to the European environment and appearing similar to its Asian neighbour, Australia claims only 17.4% of investments in the later, acquisition, buy-out and other category. The largest proportion of capital invested in Australia is said to be placed in expansion stage developments, 52.5%.

However, before assuming that Australia and Hong Kong are investing on a par with the United States, a reminder, definitions of stages change from country to country. In Australia "investment in small listed companies, [is considered] as expansion phase investment" (*PDF Report*, 1997-98, p.7). While no similar corrosion of terms has been identified in Hong Kong, the numbers⁵ involved would suggest that these definitions should be investigated more closely.

could raise tax concessional capital, and this only within prescribed amounts. Investors in MIC's received a 100 % tax concession on their investment with claw back provisions if the capital was withdrawn prior to 4 full years. Thus the maximum size of MICs was \$A40 million.

⁴ 17% in the UK, 12% in France, 21% in the Netherlands, 18% in Belgium (Manigart *et al.* 2002, p.299)

⁵ The average fund size in Hong Kong is USD100 million (Naqi, 2002). The average number of professionals per fund is 5.7 (Cornelius, 2002). Given 39% of investment dollars are said to be made

Table 1: Comparison of levels of investment within each stage

	Early Stage Investments (%)	Expansion Stage Investments (%)	Acquisition, Buy-out and Other Stages of Investment (%)
United States	46	31	23
Hong Kong	39	47	14
Australia	30.2	52.5	17.3
Europe	17	33	50

AN ECONOMIC AND INSTITUTIONAL PERSPECTIVE

Venture capital appears to follow market cycles fairly closely. Schumpeter suggested that an innovator, through his or her innovation, throws the economy into disequilibrium. Thus an exogenous economic cycle is begun that continues with a number of innovations arising from the original until a saturation point is reached. The economy then settles into a new period of equilibrium with fewer and fewer disruptive innovations occurring (McFarling, 2000).

From the venture capitalist's perspective, this cyclical behaviour would coincide with the existence of good entrepreneurial ventures in which to invest. However, given the economic law of supply and demand, a further cycle comes into play. As good investment opportunities arise in the beginning of a Schumpeterian economic disruption, profits for investors rise. As profits rise, more dollars flow into the hands of venture capitalists but, as the cycle continues and innovations start to diminish, there are more dollars than good ventures to absorb them. As a result, profits begin to fall and investors retreat. According to Whelan (2001), and following the arguments of Minsky, together Schumpeter and Keynes can be allied to explain the role of profit seeking in economic activity and the effect of this behaviour on institutions.

Keynes, in the General Theory, argued that socio-economic factors had a direct impact on the saving/consuming behavior of individuals (Tin, 2000). That is, the degree to which individuals could bear the uncertainty of future income (profit) versus current consumption depends, at least in part, on the investor's willingness to bear risk. The risk, in the case of venture capital, is not only the risk of a variable or uncertain future income stream but also the risk of placing that capital with an agent who then acts for the principal (investor) by placing that money with particular entrepreneurs.

Investors do not place their trust in venture capitalists blindly. Venture fund performance is likely to differ due, theoretically, to their heterogeneity (Naqi, 2002). Thus, as rational market players, information will be sought about the quality of agents (venture capitalists) who will be acting for the investors. Asymmetrical

in early stage funds, each professional is managing over USD16 million in such investments. Early stage investments generally absorb less than USD1 million in the first round. Time factors alone would indicate that each professional in Hong Kong could not be managing this load and later stage investments as well.

information, however, appears to be an historic cause of venture capital market inefficiency (Cooper and Carlton, 1979; Chan, 1983; Lustig and Leinbach, 1983). Therefore, competition for the investor's dollar forces venture capitalists to demonstrate their future proficiency in the portfolio company selection process.

Investors, because they cannot assume that past performance will be indicative of future performance, have come to rely on various institutional norms that provide industry players with legitimacy (Wells, 2001). Those who most successfully convince the investing public of their leadership and reputation receive the greatest proportion of the resources (capital) available. Institutional theory explains how this eventually leads to homogeneity in the organizational culture.

DiMaggio and Powell (1983, p.152) describe the process by which organizations conform. Newcomers, those with the least experience in the field, mimic those who have been operating for a longer period. That copying or "mimetic isomorphism" is greatest where there is the greatest uncertainty. Thus, by copying existing funds, new funds increase their chances for survival (DiMaggio and Powell, 1983, 155). Norms are then created within the industry that confer professional status on those adopting appropriate behaviours (Wells, 2001).

A "profession" has been defined by Fogarty (2001) as:

a complex configuration of work experiences that generates a systematic yet abstract body of knowledge to solve complex and dynamic problems that cannot be addressed by routinized actions.

He goes on to point out that the professionalisation of the institution (industry) has dual benefits. First is the confirmation that employees possess the skills that are being sought (thus the role of universities in the conferral of professional degrees, eg the MBA) and second is the signal to outsiders (investors) that this organization meets their needs through highly trained personnel. This 'like' training leads to standardization or 'normative isomorphism'.

Finally, coercive isomorphism comes into play with government regulatory bodies imposing constraints upon institutional players (Boons, 2001). Thus, institutions evolve over time, changing as the individuals who comprise the institution respond to their environment and each other in an iterative process. The changing investment trends of venture capital firms over the 15-year period, looked at from an institutional perspective can be said to be a response to the endogenous maturation or institutionalisation in the industry combined with a response to exogenous factors in the economic cycle.

DATA COLLECTION AND ANALYSIS

A longitudinal study of the training and experience of venture capitalists is warranted, given the hypothesis that training (normative and mimetic isomorphism) impacts upon the investment strategies of industry players through institutionalisation.

A total of 86 separate venture capital funds from four regions, Australia, Asia (Hong Kong), the United States and Europe and involving 521 (Australia, 192; Hong Kong,

69; US, 178; Europe, 82) industry specialists made up the database. The European and Asian numbers are lower due to the fact that only data from 2002 was collected.

Spreadsheets providing information on the company, its officers and their qualifications as well as their background experience were put together in separate matrices depending upon the year and origin of the company. No significant differences in the backgrounds and qualifications of venture capitalists were observed between larger and smaller funds. Qualifications obtained were first classified as undergraduate or postgraduate with information upon the type of degree also collected. It was apparent that a difference occurred over time in the number of industry participants who were certified or chartered public accountants, thus this information was also included in the matrices used for comparative purposes.

Experience as a category, required a large degree of subjective judgement based upon information provided. For example, information on the background of a venture capitalist could range from a list of directorships to specific named companies founded by the individual. All publicly provided information on venture capitalists' experience was divided into one of five categories. These categories included money management and consulting; industry experience; business law; government employment and 'other'. Thus a research physicist would be categorised as having 'other' experience as would a trial judge or medical doctor. The first category, 'money management and consulting' was combined as experience in these areas was believed, by the authors, to have less to do with creating wealth than with controlling it. 'Industry experience' was also a broad category, including as it did everything from managing a restaurant to being a managing director of a major listed company. Those employed in industry to manage the finances of a firm were categorised as having industry experience. The latter category, industry experience, appears to be vital to a venture capitalist if he or she was to add value to their portfolio company. That is, they would be able to draw from actual, not theoretical, knowledge to aid in the development of their portfolio companies. Those in the areas of business law or government employment were less difficult to categorise as people either were or were not employed in these areas.

An analysis of these industry players, using descriptive statistics, was undertaken using SPSS for windows. First simple frequencies were employed to determine the percentages of individuals falling into various categories. It is interesting to note the close experiential similarity between venture capitalists from the European Union and those from Hong Kong. Both reflect the characteristics of venture capitalists from the United States in 1987.

Table 2: Sampled venture capitalist experience/backgrounds

	US 1987	US 2002	Australia 1987	Australia 2002	Hong Kong 2002	Europe 2002
Money Market	54%	40%	32%	64%	55%	56%
Industry	36%	54%	49%	23%	34%	31%
Other	10%	6%	19%	13%	11%	13%

The educational qualifications of venture capitalists were also summarised. Both MBAs and specified business degrees were counted together in the category of 'business degrees' while MBAs were also considered independently of other qualifications. The other broad areas that were often listed in annual reports and on internet sites included legal training and engineering (including but not limited to IT areas). Information about accountancy certification, at times provided without information about educational training, was included in a separate category. Other qualifications were so broadly spread that they were not specifically included in the summary tables or the analysis. However, the number of postgraduate qualifications in any discipline, apart from MBAs, has also been included in the summary tables below.

Table 3: Qualifications of sampled venture capitalists

	US 1987	US 2002	Australia 1987	Australia 2002	Hong Kong 2002	Europe 2002
MBAs	41%	48.5%	18%	37%	32%	33%
Business	64%	64%	48.5%	68%	68%	69.5%
Accountancy	8%	4%	16%	29%	20%	30%
Law	9.5%	6%	7.5%	16%	½%	2%
Engineering	16%	30%	12%	9%	15%	17%
Higher Degrees	33%	23%	16%	8%	25%	34%

Again, on a surface appraisal, venture capitalists from Hong Kong and Europe bear a striking resemblance to each other. Their resemblance to venture capitalists in the US, however, have faded.

Chi square tests were run to determine whether there were significant as well as apparent differences in variables over time and between regions. The calculated p value, in all cases, was extraordinarily small indicating that the changes in the experience levels were invariably significant. First, the two countries where information was available on venture capital funds from both 1987 and 2002 were compared. It was expected that there would be a significant difference between the experience and training of venture capitalists from one period to the next. Less anticipated but also significant was the difference in the background experience of venture capitalists from one region to the next.

Table 4: Changes in venture capital experience/background over time

1987 / 2002		Value	df	Asym.Sig. (2-sided)
USA	Pearson χ^2	12.26	2	.002
Australia	Pearson χ^2	44.053	2	.000

Table 5: Changes in venture capital experience/background over regions

		Value	df	Asym.Sig. (2-sided)
USA & Australia in 1987	Pearson χ^2	17.088	2	.000
All regions in 2002	Pearson χ^2	52.838	4	.000

Variations in educational levels were also examined using Chi square tests. These were run based on the number of people in each time period/region that had particular

qualifications. Again, the Chi-square tables represent a bivariate analysis of the same 15 year spread in both the United States and Australia. The test was run first to determine any significant variation over time in the numbers of MBAs, business degrees and higher degrees and, secondly, on these degrees plus qualifications in accountancy, law and engineering.

Table 6: Qualifications

1987 / 2002		Value	df	Asym.Sig. (2-sided)
USA 3 degrees	Pearson χ^2	25.896	2	.000
USA 6 degrees	Pearson χ^2	32.353	5	.000
Australia 3 degrees	Pearson χ^2	45.216	2	.000
Australia 6 degrees	Pearson χ^2	10.992	5	.052*

* This latter is significant at 5% only.

THE PLAYERS

Simply in terms of frequency, there are far more individuals in the current crop of venture capitalists with business degrees than there were 15 years ago. Examining the differences country by country first, Australian venture capitalists today are more likely to have an MBA and less likely to have an engineering or science degree than they were in 1987. It is also apparent that there are far more certified or chartered accountants operating in the industry than there were in the past. Along with this latter qualification, there has been a significant increase in the number of venture capitalists who list their experience as money management or consulting rather than providing evidence of specific industry experience. In fact, the level of industry experience mentioned has been more than halved in the Australian sample.

Another interesting phenomenon is the Australian venture capital industry's reliance on solicitors. In 2002, 75% of the funds in Australia had an in-house, legally trained member of the venture team whilst in the United States only 25% of funds had lawyers in-house. These intermediaries, often referred to as 'gatekeepers' in the venture capital industry, have a less consultative role in the United States (Gompers & Lerner, 1999, p.20).

The sample from the United States, randomly selected from Silver's guide to practitioners published in 1987, suggested some contrasts with the data from the same period in Australia. There were, for example, fewer first qualifications in commerce⁶ but a similar number of MBAs. What stood out, however, was the disproportionately smaller proportion of qualified accountants with careers in venture capital. Given the assumed conservatism that is associated with this degree, some support for the hypothesis is already evident.

The change that has occurred in the sample of venture capitalists from the United States is the reverse from that in Australia. Where Australia appears to be moving away from industry experience and qualifications other than business ones, the United

⁶ This may be a result of the way degrees are listed. That is, a Bachelor of Arts or Science in the USA may represent a Bachelor of Economics or Accountancy but, it isn't specified as such. The number of commerce undergraduate degrees may be under-represented in the data.

States is moving toward greater levels of experience in industry and a higher proportion of degrees outside of business, particularly in engineering. This is clearly due, at least in part, to the greater American emphasis on investments in IT. It may also be a move back toward the skills, qualifications and experience of venture capitalists as they were originally configured.

The inclusion of cross sectional data on Hong Kong and Europe demonstrates that, at least in terms of their educational training in commerce, the Asians and Europeans in the sample are very similar to Australians in the current period. Venture capitalists in Hong Kong, while having fewer accounting degrees than either Europeans or Australians, have, like their European and Australian colleagues, emphasised this qualification more than have any generation of American practitioners. The Europeans and Asians are also similar in having a higher proportion of individuals with engineering qualifications and/or higher degrees in other areas than have the Australians despite the fact that Australians have a greater focus on technological investments. Hong Kong, contrasted to the rest of Asia, has de-emphasised technological investment concentrating instead on investments in consumer related products (Naqi, 2002).

PATTERNS OF INVESTMENT

The Australian industry, by the figures available in this analysis of industry players, would appear to be placing a greater emphasis on the ability to understand and manage money than on being able to confront particular industry problems through either technical training or experience. The United States, by contrast, appears to be favoring hands-on experience in industry as well as technical qualifications for competency in venture capital. Whether this difference is due to culture (normative isomorphism), training (mimetic isomorphism) or government initiatives (coercive isomorphism) is open to question. It is probable that each group is supplying the qualifications most recognised as necessary by fund subscribers.

In 1978, nearly one-third of the money in the United States industry was supplied by private individuals and wealthy families; in 1989, only 6% of American venture capital funds were supplied by this group (Sexton & Kasarda, 1992, p.404). Still in the United States, by 1987 pension funds were the major investors in new rounds of venture capital financing, providing some 39% of the total funds invested (BIE, 1993). Australian venture capital, while never supplied solely by wealthy individuals, has undergone a similar metamorphosis in the past 15 years. When the industry was first kicked off by the development of Management Investment Companies, the Government's tax incentives insured a wide dissemination of shares, in listed venture capital firms, across the investing public. For a number of reasons, not least the nature of fiduciary regulations, superannuation funds were not participants in the industry. However, publicity and Government pressure as well as the changing profile of the local industry has resulted in an increased rate of institutional participation with the concomitant demands for 'responsible' investment strategies.

Since institutional economics is evolutionary (Keaney, 2001, p.97), it helps explain the change in the investment trends of venture capital firms over the 15-year period under study. Tertiary business training and experience in managing funds is reflected in the altered investment patterns perceived in the venture capital industry. Thorstein

Veblen said “the situation of today shapes the institutions of tomorrow by altering or fortifying a point of view or a mental attitude handed down from the past” (Keaney, 2001, p.104). Hence the change in venture capital trends that started in the early 1980s has continued to date. That trend has been towards lower technology investments in an increasing variety of industries (Sexton & Kasarda, 1992), that is, a move toward diversification.

The industry now appears, worldwide, to be governed by qualified MBAs who make relatively (compared to the past) conservative investments in diverse industries. Apart from the United States, the emphasis has not been on technological investments. Where the Europeans have placed their greatest faith in buy-outs, turn-arounds and other late stage investments, venture capitalists in Hong Kong have focused on consumer durables and Australians have, ostensibly, concentrated on expansion stage developments. However, ‘expansion stage’ as defined in this country includes many of the later stage investments preferred in Europe.

CONCLUSIONS AND IMPLICATIONS

Significant changes have occurred in the venture capital industry over the past 15 years. New entrants have become established players in both Europe and Australia. The fledgling industry in Asia has, despite the economic tribulations in the region, established a profile very similar to that of the Europeans. The profile of established venture funds in the United States has changed, again significantly. Investment strategies have, largely, turned away from early stage entrepreneurial and technological ventures toward later stage expanding or reforming enterprises. As venture capitalists resist investment in the early stages of portfolio company development and direct the flow of funds away from this sector, the finance gap, identified over the years by numerous researchers, reasserts its primacy.

The basis for venture capital decision-making is profit maximisation, or, from the perspective of the financial theorist, wealth maximisation. The approach to that end will vary, depending upon the skills and training, the background of practitioners. The population of investors is, to varying degrees, risk averse as are the venture capitalists acting for them. The human tendency to invest in areas of familiarity, especially when having the fiduciary responsibility for capital from pension funds and other institutional investors only heightens the influence of normative and mimetic isomorphic institutional factors. Venture capitalists want to maintain their reputation and do so through standardised choices. They depend upon their ‘reputational capital’ for their very survival. Hence a venture capitalist’s intellectual training and other structural changes in the industry have influenced attitudes towards risk taking in investment, explaining why venture capitalists don’t venture anymore.

In conventional economic terms, if markets are to be made to work, then there must be a matching of demand and supply around a ‘market clearing’ price. However, the ‘economic drivers’ amongst venture capital suppliers are not the same as those that drive the interests of small business start-ups. It is possible and defensible, though, for governments (whose economic and social status are affected by these flows of capital) to intervene given that individual “preferences are not fixed and stable, but will generally be shaped and changed” by institutional factors (Greenaway, Bleaney & Stewart, 1991, p.799) including coercive isomorphism.

If venture capitalists are to 'reap the legendary returns of the late 1970s and early 1980s' (Sexton & Kasarda, 1992, p.423) there should be a re-evaluation of what it means to be a venture capitalist. If government's are to promote economic development through venture capital initiatives, there should be a reconsideration of which players should be supported. It has been shown that the training of venture capitalists has changed over the past 15 years. At the same time, it can be demonstrated that the strategies employed by venture capitalists have also changed in parallel with their training. Government efforts to promote the industry need to change. Rather than focusing on initiatives that increase the capital available to all players in the industry, there should be some consideration given to the types of players most likely to adopt strategies that will begin to close the finance gap.

FURTHER RESEARCH

The institutional approach, used in this research to explain the historical changes in venture capitalist's activities, would be strengthened if the examination took in earlier generations of industry players. Additionally, an analysis of the training undertaken, at what schools and with what emphasis, as well as an indication of where venture capitalists were apprenticed, would better test the mimetic and normative isomorphic institutional assertions than the generalised degree and experience data collected for this paper has done.

It is likely that funds managed by venture capitalists entering this industry at a later stage in their careers are better able to leverage their investments with management support. This proposition has not been tested as data on the age of venture capitalists and specific data on other work experience was not available when the research began.

While no difference in the training of venture capitalists from funds of different sizes was apparent in the data, size, as measured by capital under management, and the number of employees per fund, has an impact on investment strategies and should be examined in more detail from the institutional perspective.

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