STARTUP/SEED STAGE INVESTMENT BY VENTURE CAPITAL FUNDS (IN ISRAEL): ENTREPRENEURS IN RESIDENCY AND EXECUTIVE IN RESIDENCY PROGRAMS

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What constitutes venture capital and what constitutes angel financing is a natural question. In the time period after the bubble burst in 2000 it became easy to differentiate:

1. **Angel investors**: usually “high status” individuals, former successful technology entrepreneurs who use their financial wealth, which financed birth and initial growth of ventures.

2. **Venture capital (VC)**: independently managed, dedicated pools of capital that focus on equity-linked investments in privately held, high growth companies needing mid stage financing. Startup/seed financing were usually not acceptable VC funding phases, because of the greater risks involved.

The growth in “Startup/Seed Financing” by VCs (almost 100% in Israel during FY 2004 alone), shows that Israeli VCs contrary to their Silicon Valley counterparts are interested in participating earlier in the venture’s life.

In the post Google IPO era, since 2004, Israeli VC partnerships are eagerly pursuing “good” startup/seed ventures, by using a combination of new programs like the “Entrepreneur/Executive in Residency (EIR)” programs among others. No academic papers that analyze these phenomena or even describe it have been found. On the other hand, newspapers and VC magazines have mentioned and described the work of EIRs in the VC industry in Israel.

The purpose of this paper is to conceptualize the characteristics of and relationships between: “VC partners” and the “Entrepreneurs” who received financing in the startup/seed phases. This will allow comparison between many types of VC-entrepreneur relationships in startup/seed stage ventures and shed light on the nascent entrepreneurs and the EIR programs in particular. We believe that knowledge concerning this type of program will help VCs in other countries by either encouraging them to adopt this practice or to abandon it. The question of how VC equity financing will evolve over the next decade and how it will work with startup/seed ventures is a particularly critical one.
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INTRODUCTION

Venture capital has proven to be one of the most capital efficient mechanisms for building high-tech companies and job creation in Israel. Since 1995, the Israeli economy has experienced an inflow of $43 billion ($16 billion through VC investments, $20 billion in proceeds from these ventures and $7 billion from VC backed IPO’s) (IVA 2005 Yearbook).

A combination of regional advantages and historical accidents conspired to produce in Israel the second greatest (after Silicon Valley) "Science Park" in the world. In terms of recent patents per capita, Israel stands third after USA and Japan (Trajtenberg, 2001). During the last three decades, Israel has shown dramatic growth in technological startups and is one of the world’s largest recipients of venture capital financing. By virtue of Israel’s entrepreneurial culture and close ties to America, Israeli startups have a strong presence in the United States. Check any technological start-up in the USA, and odds are that one of its competitors is an Israeli company (Bednarz, 2005). More Israeli companies are listed on NASDAQ than those of any other country outside North America- 70 out of 340 foreign listings (Canada has 80). Israeli start-ups have raised more than $5.2 billion in initial public offerings on NASDAQ in the last 5 years. This continued growth is directly related to the number of serial entrepreneurs getting back in the industry (IVC Research Center Surveys). The size of the venture capital pool available for early-stage (both startup/seed and R&D stages) financing has grown in only two countries: USA has $3.65 billion and Israel has $.55 billion, while the rest of the world together has less than $.4 billion (Acs & Audretsch; 2003)

Venture money is not long-term money. The concept is to invest in an idea or new technology, create a company and as soon as it reaches a sufficient size and credibility sell it to a corporation or to the public-equity markets. Venture capitals’ niche exists because of the
structure and rules of capital markets (Zider, 1998). Banks will only finance a new business to the extent that there are hard assets against which to secure the debt. Most startup/seed ventures have few hard assets. Usury laws limit the interest banks can charge on loans and the risks inherent in startup/seed ventures justify higher rates than allowed by law. Usually, in return for financing one to five years of a company’s start-up, venture capitalists expect a ten-fold return of capital. Combined with the preferred position and stock options this is a very high cost on capital. This equity investment is like a loan with a 60%+ annual compound interest rate that cannot be prepaid (Zider, 1998).

Venture capital fills the void between personal sources of funds for innovation (usually provided by friends and family of the entrepreneur, government programs or corporate venture funds) or angel financing (former successful technology entrepreneurs that use their financial wealth) and later-stage traditional sources of merchant capital available to ongoing enterprises.

The VC industry has three “clients” it needs to satisfy in order to succeed. The fund is required to: 1) provide a sufficient return on capital in order to attract investment from individuals and private equity funds, 2) attractive returns for its own participants, 3) upside potential to the “right” entrepreneurs in order to attract “ideas that will generate high returns” (Zider, 1998). The challenge for a VC is to earn consistently a superior return on investment in inherently risky business ventures. Institutions and individuals invest in a VC fund based on its track record, confidence in the VC partners themselves and the entrepreneurs the VC finances.

Investment behavior by Israeli technological investors can be divided into five eras: Genesis (up to 1987), post-market crash (1987-1995), post-Netscape IPO (1995-2000), post-
bubble (2000-2004) and post-Google IPO (post 2004). In a short description of the VC behavior during these eras we have:

1. **GENESIS** (up to 1987): Investors usually invested in spillovers from corporations and in a few garage entrepreneurs with revolutionary ideas. In Silicon Valley we had Intel and Apple among others. In Israel, we had Scitex, Elscint, Elta and Elbit among others. The Israeli government interfered in 1985, by passing the law for the Encouragement of Industrial R&D Investments. Israel high-tech exports grew from a mere $422 million in 1969 (in 1987 dollars) to $3,316 million in 1987 (Toren, 1990).

2. **POST-MARKET CRASH** (1987-1995): The VC industry in Silicon Valley shifted its investment focus away from startups/seed firms, in favor of mature ventures (that is, development finance) and leveraged buyouts and buyins. The Israeli Government, in 1991, decided to play a role in the development of Israeli venture capital markets in two ways:

   a. Funded several technological incubators where novice entrepreneurs would get a supportive framework (grants, infrastructure and guidance) in order to translate ideas into their own companies. 700 companies started in the incubators and in the year 2000: 200 were still there, 250 had closed, 200 got VC investment and 50 where on their own (Trajtenberg, 2001).

   b. The Israeli Government financed hybrid (public/private) venture capital funds to leverage private capital from foreign investors (Trajtenberg, 2001). Yozma Fund (as it was named) took equity stakes in 10 US style venture operations (the program included equity guarantees and tax breaks). When the program was declared successful (catalyzing the establishment of the VC industry), it was privatized and sold. (OECD, 2003).

The VC industry in Israel was ready for the new era.

3. **POST-NETSCAPE IPO** (1995-2000): The VC industry, in Silicon Valley as in Israel, now focused on ventures in the new ICT (communications/ software/internet) areas. In Silicon Valley, VC investment in startup/seed ventures grew from 0.64% of total investment in Q1/1995 to over 9.17% in Q3/1999 (Moneytree Survey). The VC industry in Israel matured. From the $3,092 million invested in Israeli High Tech Industries in 2000, over 40% was from Israeli VC firms (see figure 1). Startup/seed investment, in Israel, crossed the 17% of total investment in 2000 (Moneytree Survey).
4. **POST-BUBBLE (2000-2004):** During the post-bubble era, VCs needed success stories in order to gain back confidence from investors. This forced most technology VCs to avoid startup/seed ventures where technologies are uncertain and market needs are unknown. Also, the structure of VC partnerships used to be inappropriate for startup/seed investments. Investments (startup/seed stage more than others) are usually very time consuming to negotiate and monitor. The typical venture capitalist constrained by governance and regulatory considerations could typically be responsible for no more than a dozen investments. VCs consequentially were unwilling to invest in very young firms that only required small investments but the same amount of monitoring and involvement (Gompers & Lerner, 2003). The VC industry everywhere was hurting. Israeli VCs raised $3,711 million in 2000 and $-174 million in 2002 (reflecting $221 million refunded by the funds that year). Israeli VC investment in startup/seed ventures also plummeted in 2002 (figure 2) to 4% of total (IVC Research Center Annual Report). In Silicon Valley, startup/seed investment fell to 0.31% of total in 2Q2002 (Moneytree Survey). Most of the amount that VCs were willing to invest was channeled to more mature ventures. The Israeli government again interfered with several startup/seed programs in 2002.

   a. **TNUFA:** Grants for preparation of business plans and patent proposals.

   b. **HEZNEK:** The program invests in startup/seed ventures together with a VC fund (50% and up to $1.1 million) in exchange for non-voting rights shares. The investing VC has the option of buying-out the government’s share at any time within the first 7 years.
This program helped keep a minimum positive amount of startup/seed investment by reducing risk for the VC fund. See figure 2.

FIGURE 2
Capital Raised by Israeli Seed Companies (SM)

5. POST-GOOGLE IPO (after 2004): The VC industry understood that they are in a cyclical industry with cycles shorter than those of other merchant capital suppliers. Israeli VC funds also saw the importance of a portfolio with a significant amount of startup/seed ventures. In 2004, Israeli VCs invested 11% of the total in startup/seed ventures (IVC annual report 2005). In contrast, Silicon Valley VCs are shunning away from startup/seed ventures and they invested only 0.1% of total during 1h/2005 (Moneytree Survey).
Technology VCs were always looking for good technology-managers in particular industries (see figure 3) so that they can invest part of the fund in startup/seed stage ventures (Zider, 1998). Industry investment composition suggests that venture capitalists specialize in industries in which the monitoring and information evaluations are important and in which at least one of the partners has the required knowledge (Acs & Audretsch, 2003). VCs (post bubble) focused mainly on the middle part of the classic industry S-curve. They avoided both the startup/seeds, when technologies are uncertain and market needs are unknown, and the later stages, when competitive shakeouts and consolidations are inevitable and growth rates slow dramatically (Zider, 1998). In this research, we will only look at one of these industries: the Information and Communication Technology (ICT) industry (figure 3: IT & Enterprise
Software, Communication and Internet categories) and concentrate on what is happening in the post-Google IPO era.

To a venture capitalist of the 21st century, the crown jewels of a hot new tech venture are not the closely guarded software codes but the talented people who can quickly transform the technology into a revenue-generating product that leads the venture to a blockbuster IPO or a lucrative acquisition. These stars, dubbed simply “the talent” are not young and restless Gen Xers slaving away in garages: they are people who, in one way or another, have been around long enough to earn a few stripes (Warner, 1998). As Georges Doriot said in the 1940s –“Always consider investing in a grade A man with a grade B idea. Never invest in a grade B man with a grade A idea”- (quoted in Bruton, Fried & Hisrich, 1997: 41). It is clearly the “entrepreneurial team- VC partner” teams that will often separate the “winners” from the “losers” in startup/seed startups. The small number of good, experienced technology-managers in the ICT industry (who can deal with uncertainty, high growth and high risk) who also have a “new” idea for a venture means that the supply of startup/seed ventures, that would qualify for VC funds, are few and far between (Jacobius, 2004). VC emphasis on serial entrepreneurs does have some repercussions that are not necessarily positive (IVC 5/2005). It clearly does not give sufficient opportunities to first-time entrepreneurs who have a hard time finding a VC that believes in their ability to execute the business plan. The VC partners have come with the Entrepreneur/Executive in Residency (EIR) programs in order to enlist both (ideas and people) separately (asynchronously).

Many Israeli VCs have created these Entrepreneur/Executive in Residence (EIR) programs in order to optimize their own search for the next startup, which they hope may be a new company that the EIR forms or joins during their tenure at the VC.
“Entrepreneur/Executive in Residence (EIR)” is a position found mostly in Israeli VC partnerships interested in the ICT start-up industry. The EIR concept has been around for a while. Competition for talent has grown feverish, so most Israeli VC ventures are relying on it, more and more (IVC 5/2005).

People chosen for the EIR programs have usually been involved in a number of startups, and more often than not, have succeeded by taking their companies public or have been acquired. Whatever the case may be, they are looked upon as having “high status” in their particular field of knowledge. In other words, an EIR is a person who has an outstanding record of accomplishment as either an executive or technologist and who joins a VC partnership as an interim step to his next venture. The EIR program is designed to provide these entrepreneurs, seeking their next business venture, with the network, resources and tools to identify emerging market segments and business opportunities. The EIR program also gives the entrepreneur special and unique experience by participating and learning many venture capital activities.

“Entrepreneur/Executive in Residence (EIR)” programs have many functions within a VC. In some VCs, EIRs act as consultants who specialize in particular industries and can lend significant value in terms of screening entrepreneurs who pitch to VCs for startup/seed financing. In other cases, EIRs do more than consulting with the VC venture organizations. EIRs actually “incubate” an idea, while getting a salary and/or support of researchers for market studies (in order to validate a technological idea), from the VC. Eventually he/she will form their own company, or join a team which the VC will fund. Israeli VCs are eagerly pursuing “good” startup/seed ventures, where they can double or triple their startup valuation from one round of financing to the next. The question of how equity financing will evolve
over the next decade is a particularly critical one given the entrance of VC funds (with EIR programs) into very early, even pre-birth stage of ventures. This stage was populated previously only by “angel” investors.

This latter function, the start of new ventures by EIR programs is the subject of this study. I will study both types of EIRs (those that come up with the idea and those that join a team that came up with the idea). The EIR will get a small amount of funding (from the VC) categorized as “pre-seed” (this “pre-seed” financing could be an actual investment or it could be the funding of research) to create a commercially viable business in the ICT industry in Israel.

This study might, at a future point in time, also compare startup/seed investment programs by VCs in Israel with those in other places, especially Silicon Valley.

The venture’s success is based on many factors. One of these factors is the VC-Entrepreneur relationship. This relationship is based on the particular VC fund culture, the VC partner and the entrepreneur’s background and so will greatly influence the venture’s success.

What this research will be looking for is the relationships in a startup/seed venture between the VC partner and the entrepreneurial team. Sweat equity (non-financial investment) is an integral component in the relationship between VC partners and entrepreneurs. VCs assume that an EIR program will optimize the relationship and in doing so maximize profits. The VCs with EIR programs want to participate in the initial stage of a venture and supply funds for the innovation stage (startup/seed).

These Entrepreneur/Executive in Residence programs are based on the need of the VCs to predict through differences in individuals the how, why and where of their new
successful innovative venture. What VCs expect from their EIRs is the chance to invest in a company’s startup/seeds, when the stock is the cheapest and the potential for big returns the greatest. EIRs also allow the VC to enter the food chain at an earlier stage. Venture capital executives assert that the companies that come from an EIR program will sell for more (Jacobius, 2004) when it comes time for the venture capitalist to exit the deal (venture). No prior research has examined the effects of the post Google IPO reactions on VC investments and their decision on how or why to enter startup/seed stage ventures. No research has yet tracked results of companies that have come out of EIR programs or to explain what factors influence the degree of success of an EIR relationship (no academic papers that dealt in the subject were found, only references in the VC professional literature).

This research will look at the ICT “startup/seed” startups in Israel; look at results coming from “high status” entrepreneurs in the Entrepreneur/Executive in Residence (EIR) programs versus equally “high status” entrepreneurs that are not in EIR programs. VC partners and their ventures’ entrepreneurs plus some first time entrepreneurs (that received startup/seed investments, from VC funds), will be interviewed. Allowing comparisons between many types of VC-Entrepreneur relationships and the results of these varied relationships, can shed light on startup/seed investments and the EIR programs in particular. I believe that knowledge about this type of program will help VCs, by encouraging them to adopt this practice if it enhances the end result, or to abandon it if it makes no difference.

DISCOVERY, INNOVATION AND ENTREPRENEURSHIP

The literature on entrepreneurship can be classified into two schools of thought (Thornton, 1999). The supply side school, focuses on the availability of suitable individuals to occupy entrepreneurial roles and the “demand side” school, which focuses on the number
and nature of the entrepreneurial roles that need to be filled. The Entrepreneur/Executive in Residence programs basically requires us to look at both sides and in doing so find a model that combines both.

The literature on the demand side of entrepreneurship suggests a number of ways to examine where entrepreneurs are needed, relationships with VCs, the management theories that describe the organizations/ventures, and the context of organizational funding. From this perspective, demand side researchers have studied new ventures by organizational hierarchies (Freeman, 1986), activity of the professions (Wholley et al, 1993), policies of nation states (Doboin & Doud, 1997), development of markets (White, 1981; King & Levine, 1993) and advent of new technological change (Shane, 1996). These studies focus on the number and nature of the entrepreneurial roles that need to be filled.

Supply side research, which focuses on the availability of suitable individuals to occupy entrepreneurial roles tries to predict through differences in individuals the how, why and where of new ventures. Supply side approaches have examined attributes of culture (Weber, 1998; Shane, 1993), and social class and ethnic groups (Aldrich & Waldinger, 1990). The idea that psychological traits alone account for entrepreneurship has been largely abandoned (Thornton, 1999) but we still know that special types of individuals create opportunities and VCs need an adequate supply of them. Clearly, the founding of a venture may be dependent on the individual entrepreneur (as supply-side analysis suggests) (Shaver & Scott, 1991), but it is also clear that an individual cannot mobilize without an infrastructure (as demand-side analysis suggests).

In EIR programs, venture capitalists buy into the ability of the entrepreneur to discover opportunities from technological changes leading to new processes, products,
markets or ways of organizing them, while the entrepreneur buys into the VC’s ability to provide the capital and infrastructure he needs. This shows that a hybrid (supply/demand) theory is needed when explaining the EIR programs.

**Entrepreneurship and Economic Theories**

EIR programs are about discovery of entrepreneurial opportunities. Unfortunately, most research on entrepreneurship investigates the entrepreneurial process after opportunities have been discovered (Shane, 2000). In order to explain EIR we need to look at theories of opportunities based on market theories from the various schools of economics.

Neoclassical economics assumes that markets are composed of maximizing agents whose decisions about prices clear markets. Researchers in this field ignore the existence of entrepreneurs, stating that people will discover the same opportunities in any given technological change (Khilstrom & Laffont, 1979). This makes it not relevant for the EIR trend research.

Psychological theories define entrepreneurship as a function of “stable’ characteristics possessed by some people and not others: need for achievement (McClelland, 1961), willingness to bear risk (Brockhaus & Horowitz, 1986), self efficacy (Chen, et. al.1998) and internal locus of control, tolerance and ambiguity (Begley & Boyd, 1987). In other words, they assume that attributes of people rather than information about opportunities determine who becomes an entrepreneur. This process depends on people’s ability and willingness to take action. Research by this school focusing on the discovery process finds that discovery depends on relative differences between people and in their willingness to search for and identify opportunity (Shane & Venkataraman, 2000), also in the superior information processing ability, search techniques or scanning behavior that makes some
people more able or willing to discover opportunity (Shaver & Scott, 1991). Most modern researchers are skeptical of born “DNA-based” high tech entrepreneur theories. Israeli VC funds do not use psychological testing techniques in order to find EIRs but they do talk about “born” entrepreneurs.

The Austrians, on the other hand, assert that markets are composed of people that possess different information (Hayek, 1945) and that the discovery of opportunity cannot be understood through mechanical computation because any given individual cannot identify all possible opportunities (Kirzner, 1973). Differences in information lead people to see different value in a given good or service and offer different prices to obtain or sell it. In other words, by buying or selling goods or services in response to the discovery of price misalignments, an individual can earn entrepreneurial profits or incur entrepreneurial losses. The most important part of Austrian economics (Kirzner, 1985), needed in order to explain the EIR programs, is that possession of information (based on career choices and experience) that is appropriate to a particular opportunity leads to opportunity discovery. Nobody is more likely than anyone else (at birth) to become an entrepreneur. Individual differences and experiences in an individual’s life path affect the way people exploit opportunities, while ignoring attributes of the opportunities themselves. Different people will discover different opportunities in a given technological change because they possess different prior knowledge (Venkataraman, 1997).

Newer research shows that some inventors failed to recognize the commercial value of their own inventions. A small amount of technological change might generate a large amount of economic output because entrepreneurs can discover a large number of
opportunities in which to exploit the technology (or vice versa: large amount of technology change can produce small amounts of output) (Shane, 2000).

The EIR programs are based on the assumption that entrepreneurs discover opportunities, not because they were born with special attributes (e.g., unusual perceptive ability) that makes them able to recognize opportunities, but because career experiences and the prior knowledge gained makes people better able to discover certain opportunities than others (Shane, 2000). Another assumption is that entrepreneurship cannot be explained solely by reference to factors external to individuals, like competition or the entrepreneur’s prior founding experience (Singh & Lumsden, 1990), although prior founding experience is considered important in the EIR programs.

Sources of prior knowledge that lead to opportunity discovery are idiosyncratic, resulting from work experience, personal events and university education (Venkataraman, 1997). EIRs will be able to discover opportunities in sectors that they know well rather than in sectors that are hot (Shane, 2000). We hope to research if when evaluating opportunities, entrepreneurs use only the ones they identify themselves or EIRs can use information about new opportunities by also evaluating and understanding proposals from other entrepreneurs, that reach the aligned VC firm.

We will research the factors (if any) of the long term effects of military training (social and technological) in the EIR and VC partner relationship. We will suggest that social skills and willingness to take risks by some Israeli youth during their military service (elite combat and/or technological units) will influence their post-military careers as civilian entrepreneurs. The early age (usually 20) when Israelis receive managerial responsibilities
(officer rank) and the continued reserve duty (in some cases up to age 60) determine social capital and trust between members of the same background.

Research on the relationship between the EIR, the VC partner and the firm is contradictory. On one hand it states that entrepreneurial differences may imprint the development of new organizations even before they are founded (Shane, 2000); on the other hand, research shows that organizations are programmed only during venture infancy, not before birth (Stinchcombe, 1965). We suggest that the VC partner-EIR relationship influence and define the venture even before the “idea” for the venture is established.

THE CONCEPTUAL MODEL

The ability to predict venture performance based on observable initial factors is an art and the following model does not try to climb such a high mountain. However, the central argument of the EIR program and the following model (figure 4) is that the ability of a venture to get funding, its survival and its success are fundamentally shaped by the pre-entry experiences of their founders (Klepper, 2001; 2002; Carrol et al, 1996) and by features and trust of the VC-entrepreneurial team relationship.

Startup/seed investments in Israel are becoming very attractive, and VC funds are investing double the amount they invested in previous years. VCs are now constantly looking at the startup/seed investment market. This study will try to model (see Fig: 4) the relationships between different types of entrepreneurs and the VC partners in those startup/seed ventures. The model will also try to explain if “Entrepreneur/Executive in Residence (EIR)” programs, which many VCs are using today, affect the marginal funding and survival probability, as well as the likelihood for a high performance venture.
Empirically defining venture success is problematic (Solymossy, 2000). This study uses a multidimensional framework for defining success for the entrepreneur, the venture and the VC partner. In the EIR program, the VC partner and the EIR commit to each other at the beginning of the relationship and align their goals at that point.

There is an ongoing discussion about suitable indicators of new venture performance (Brush & Vanderwerf, 1992; Wiklund, 1998). Measures have ranged from subjective self-assessment to quantified and reasonably objective measures of economic performance (Sexton, et al., 1997). Usually, broad measures reflecting multiple aspects of both growth and
economic performance are preferable (Wiklund, 1998). The venture capital-backed firm has a very limited financial history during the elapsed time between birth and next step financing.

There are several options that the research can follow during the qualitative phase of this study:

1. Following Cooper, et al., (1994), new venture performance can be classified into three mutually exclusive and collectively exhaustive categories: failure, marginal survival and high performance.


3. Subjective self-assessment of difference at two points: at venture birth (how easy it was to get funding) or ability to get next phase investment.

The dependent variable in this model preferably will always be, if available, the increase in valuation of the venture. The key argument is that "high status” entrepreneurs in EIR programs facilitated by a good and extensive relationship with the VC partner can produce better returns in a venture than other entrepreneurs of equal “high status” standing.

**Independent Variables**

Entrepreneurial research shows increasingly that the individual “high status” entrepreneur is at the cornerstone of the development of new opportunities and the founding process (Busenitz & Barney, 1997; Shane & Venkataraman, 2000). Even the VC literature is drawing attention to the centrality of this “high status” entrepreneur and the founding team (Bygrave & Timmons, 1992) and the quality of the founding entrepreneur in the funding decision (Zacharis, Meyer & Castro, 1999). In this study entrepreneurs can attain “High Status” by any of three ways:

1. Technological Prior Knowledge (TPK),
2. Managerial Prior Knowledge (MPK)

3. Served the IDF (Israel Defense Forces) in the Computer Units or as a Combat Officer.

In contrast, using other research on technological entrepreneurship we can show that it involves agency on the part of many actors, well beyond just the “high status” entrepreneurs themselves, it is path dependent and embedded in the technological system developed (Garaud & Karnoe, 2003). In other words, the relationships and backgrounds of both the VC partner and the entrepreneur in what we can call “Israeli Start-up Scene”.

**The Israeli Start-up Scene**

In this study, the scene of the “Israeli Start-up Valley” will be investigated by comparing backgrounds of both VC partners and entrepreneurs plus their relationships, in other words their social capital. The Information and Communication Technology (ICT) entrepreneur, in Israel, is the modern-day “pioneer”, roaming new technology frontiers much the same as earlier Israelis (late nineteen century) dried swamps and built roads and kibbutzim. As modern-day pioneers, they are especially responsive to risky ventures that have the potential for great rewards. Israeli society acknowledges the successful entrepreneurs who have taken aggressive professional and technical risks (the garage tinkerers who created successful companies) as heroes and attaches little, if any, stigma to trying and failing in a new venture. Leaving a venture to work for another and eventually returning even to the same venture is rewarded (Ariav & Goodman, 1994).

Research suggests that government promotion of ICT, high levels of private sector R&D investment and an education system that produces ICT-literate graduates are the most important factors in ICT industry success (Watson & Myers, 2001). Many people have
attributed the success of Israel’s ICT industries primarily to the influence of institutions of higher education (Technion and Weitzman Institute) and the high technological environments (weapon systems developed in Israel or in partnership with American contractors) in the defense forces (Cummings, 2005). From previous research, we know that universities can influence the rate at which ventures are founded by making equity investments and giving professor-inventors a share of royalties (Digregorio & Shane, 2003).

The technological prowess of the Israeli military is a catalyst for entrepreneurship. A disproportionate number of Israeli veterans begin their own businesses often in highly competitive technical fields. A lack of resources means soldiers have to be precise, outwit their enemies with greater skill and regard themselves, as team members of a smaller force, more personally accountable for their actions – all elements inherent in making a business thrive (Cummings, 2005). The roles of government (military research) and the natural environment (no natural resources) of Israel cannot be underestimated. The relocation of efforts from military research (mid 1990s) into civilian research brought defense R&D technologies/management knowledge into the private market.

The members of this technological society (entrepreneurs and VC partners) are a strongly homogeneous group: male, alumni of the IDF (Israeli Defense Forces) computer units (or officers in elite combat units) and engineers/computer scientists by education. Although they may have gone to US universities for graduate degrees or later worked in Silicon Valley, they return in order to create their next venture in Israel (Cummings, 2005).

Israeli ICT ventures and VC funds collaborate with one another in formal and informal ways, developing alliances, contracting for services, or simply sharing information. Employees of different ventures mix frequently in reserve duty (military), local business and
social gatherings. Along with sharing the same type of risks, the entrepreneurs also share a camaraderie unsurpassed almost anywhere else in the ICT industry (except maybe for Silicon Valley). Even engineers and scientists who work at competing ventures during the workday remain close friends off the job. The young engineers and programmers meet at popular social establishments or in reserve military duty to share high-tech "war stories." These discussions enable the individuals to share industry gossip as well as facilitate employment searches in other ventures (Cummings, 2005).

Some structural analysts have found that social networks have similar properties in different countries. This type of social capital was first identified in Silicon Valley (Saxenian, 1994) where in forums based on relationships that are easily formed and maintained, technical and market information is exchanged, business contacts are established and new enterprises are conceived. Entrepreneurial capital like this also promotes the diffusion of intangible technological capabilities and understandings (Saxenian, 1994).

EIR role in the VC prior to start of the venture. Not all entrepreneurs have a previously well-defined concept to the point where it is ripe for investment. Some do not have a concept at all. EIRs will be at different points in their future ventures. The conditions of the EIR in the VC premises and his other obligations with the partners will no doubt influence the concept, the relationship and the attention given by the partners (not just in the business environment but on other important issues). The only other research study found about VC and Entrepreneur having a commitment of employment for the latter (Hoffman & Blakey, 1987) showed how it affected positively in the earlier stages of the relationship.

Entrepreneur’s “previous knowledge”. The identification of opportunities has been recognized as one of the most important abilities of successful entrepreneurs (Ardichvili,
Cardozo & Ray, 2003). Opportunity identification may be related to, among other factors, entrepreneurial alertness (Kirzner, 1973), prior knowledge (Shane, 2000), social networks (Singh, Hills, Hybels, & Lumpkin, 1999), entrepreneurial cognition (Baron, 1998) and potential financial reward (Schumpeter, 1976).

Prior knowledge, which refers to an individual’s distinctive information about a particular subject matter, may be the result of work experience (Evans & Leighton, 1989; Cooper, Gimeno & Wo, 1994), university education (Gimeno, Folta, Cooper & Wo, 1997) or other means (Shane, 2000). It may be accumulated through experimental learning and/or through second-hand experience. As individuals become knowledgeable at a particular task through experience, they become increasingly efficient; they learn to focus attention primarily on the key dimensions; the ones that contribute most variance to the outcome of decisions (Choo & Trotman, 1991). Individuals with more knowledge appear to think in a more intuitive way in similar situations.

In conclusion, research in this area shows that higher levels of prior knowledge are associated with the identification of a greater number of innovative opportunities. The study will quantify the entrepreneur’s “previous knowledge” in each of the following areas: technology knowledge, network development, software development, hardware development, educational achievements, market knowledge, customers’ needs and problems, industry trends, management experience, VC relations, prior founding, management education, top management, project management, financial management and general management.

Sources of “high status” of the entrepreneur. Starting a new venture is fraught with difficulties that are particularly severe for inexperienced entrepreneurs. Founding
propensity is a factor that varies over an individual’s life course. Unlike psychological traits, careers are dynamic. Careers are a series of choices that individuals make based on the opportunities available to them (Shane & Khurana, 2001). Which opportunities are available to each individual is a function of where they are in the social structure and how they got there (Shane & Khurana, 2001).

The biggest opportunity that an entrepreneur can get is becoming a member of the EIR program in a first tier VC partnership: the VCs transfer legitimacy to the entrepreneur in their portfolio (Fried & Hisrich, 1995). Entrepreneurs who possess greater legitimacy can more easily obtain necessary resources than those who do not exhibit certain legitimating characteristics (Hannan & Freeman, 1989).

Entrepreneurs require information, capital, skills and labor to get funding for a venture. While they hold some of these resources themselves, they often complement their resources by accessing their contacts (Aldrich & Waldinger, 1990; Hansen, 1995; Cooper, Folta & Woo, 1995). The contacts that lead to successful outcomes are part of their social capital and a key component of entrepreneurial networks (Burt, 1992). Social capital is the set of tangible or virtual resources that accrue to entrepreneurs through the social structure, facilitating the attainment of their goals (Lin, 1998; Portes, 1998). By this, they include contacts that help them get things done. When the entrepreneur’s contacts contribute to their entrepreneurial goals, these social contacts are their social capital (Burt, 1992). These relations extend across professional networks, reaching friends and colleagues from earlier jobs.

“High status” entrepreneurs’ networks span relations to organizations, clusters of firms, as well as to other people that help them set up the venture (Hansen, 1995). Linking
“high status” entrepreneur’s career experience to the startup founding success is important for the EIR model in this study. An entrepreneur’s career experiences show that they influence venture founding by mitigating the liability of newness (Stinchcombe, 1965), they confer status (Blau & Duncan, 1967), they affect capabilities and skills of individuals (Becker, 1975) and finally they shape the resource networks of the entrepreneur (Burt, 1992; Granovetter, 1974).

“High status” entrepreneurs’ prior founding experience will provide external constituents with positive evidence that the entrepreneur has successfully completed the difficult process of adapting to the role of venture founder and has developed the skills necessary to found and manage an organization (Shane & Khurana, 2001). Their prior experience in gathering resources enhances the strength of those relationships as well (Aldrich & Waldinger 1990).

An entrepreneur in Israel achieves “high status” by a combination of many different factors. The first, a must, has to be previous entrepreneurial activity that includes previous venture founding. Second, he could have worked in the market as a customer (in the IDF computer units) or supplier (in software development), possessing information not publicly available about the ICT technology in question. Alternatively - a third factor – he could have served as an officer in an extremely prestigious combat unit (fighter pilot, commando and other elite forces) where his managerial skills shined while working in teams.

High status entrepreneurs will be more likely to found firms than entrepreneurs of low status because their status will generate the necessary legitimacy to motivate potential investors, employees and other stakeholders to reallocate resources to the new venture. Their status gives the stakeholders more confidence in the ideas they are proposing and makes
them more likely to attribute high value to those ideas (Shane & Khurana, 2001). In the case of an invention, evaluators will rely on the status of the inventor in making decisions about the opportunity (Merton, 1973).

**Mediating Variables**

Some VC funds will target startup projects because the returns from successful startup/seed investments can be several times higher than later-stage investments. Even though the potential for higher returns is generally recognized, no more than a low percentage of venture capital funds portfolio focuses primarily on such investments, mostly because successfully managing the risks of startup/seed investments demand more from the investment team than the traditional monitoring approach used for later stage investments (Roberts & Tempest, 1998). When the new venture obtains financing from the VCs to aid in its development (Mason & Harrison, 1996) it requires greater care and investment discipline, and implementation of programs, like the EIR, that create an opportunity in this newly-served investment segment.

Once an investment is made, the investment is illiquid, and its success is highly dependent on a small group of managers/entrepreneurs in the venture (Fried & Hisrich, 1994). It is in the interests of both entrepreneurs and VC fund partners to do everything possible to ensure that their operating venture succeeds; they effectively become active collaborators.

**Post investment activities.** Involvement can take place across the whole spectrum of managerial activity, from strategic planning to operational matters. VCs can be vigorous and influential board members and play a significant part in shaping operating strategies (Rosenstein, et al., 1993). Mainly because of time constraints, VCs tend not to become over-
involved in day-to-day operations unless major problems arise; assistance most frequently
given includes help in raising additional funds, strategic planning and management
recruitment (Gorman & Sahlman, 1989). Paradoxically, a more intense level of involvement
by VCs does not necessarily mean that ventures will necessarily operate any better than
where there is only a limited involvement (Macmillan et al., 1989).

The perceptions of the relationship (non-financial involvement sweat equity).
Significant information asymmetries allow entrepreneurs to engage in opportunistic behavior
after an investment is made (Sahlman, 1998), making it all the more important that the initial
decision to invest be one based on trust and “influenced by the VC partner and entrepreneur
forecasted relationship”.

The dynamic ownership and working arrangements surrounding the VC-E
relationship inherent in new ventures always influence the outcome (Arthurs & Busenitz,
2003). VC contribution to the VC-E relationship is not solely financial (Busenitz, 1999). In
addition to providing risk capital, in exchange for partial ownership of the venture, Israeli
VCs are typically active investors. They seek to add value through their interaction with and
advice for the managers of the entrepreneurial venture (Macmillian, Kulow & Khoylian,
1989; Bygrave & Timmons, 1992), as well as through their monitoring and reorganizing of
the companies in which they participate (Sapienza & Gupta, 1994). Efforts to explain this
intriguing VC-E relationship have relied on agency theory (Sahlman, 1990; Sapienza and
Gupta, 1994; Barney et al., 1989) and stewardship theory (Fox & Hamilton, 1994; Davis, et
al., 1997; Arthurs & Busenitz, 2003).

Agency theory prescribes actions that focus on the protection of the investment of the
principal (VC) against the “harmful” behaviors of the agent (entrepreneur) (Jensen &
Meckling, 1976). This principal-agent relationship arises when the entrepreneur engages the VC for funding of a new venture (Amit et al., 1990; Sahlman, 1990). This theory assumes that both the agent and principal are self-interested and bounded rational (Eisenhard, 1989), forcing the enactment of proper incentives and controls to align their goals. Bounded rationality gives rise to information asymmetry between the parties (Amit et al., 1990; MacIntosh, 1994; Amit et al., 1998; Bohren, 1998).

For example:

1. The entrepreneur may attempt to “oversell” the merits and viability of the venture (Levy & Lazarovich-Porat, 1995) in order to get more favorable financing terms (Amit et al., 1998).
2. May claim to have more knowledge about a particular technology than is true (Arthurs & Busenitz, 2003).
3. The entrepreneur may use VC funds to purchase excessive perquisites (Arthurs & Busenitz, 2003).

It appears that the agency theory is most applicable, in explaining behavior, immediately prior to the initial investment. Especially if the investment VCs make in a new venture is with an entrepreneur unknown to the VC’s partners. When there is goal incongruence between the two, agency theory is useful. Recent research has not studied the relevance of agency theory in explaining the type of relationship that EIR programs represent (Kelly & Hay, 2001; Landstrom, 1992; Van Osnabrugge, 2000). At issue is the idea of goal congruence between VC and entrepreneur that should exist in EIR relationships. When there is congruence between the VC and the entrepreneur (Arthurs & Busenitz, 2003), like in the EIR program (by design), agency theory could be silent or at least not very important.

Agency theory does not account for the trust developed by the EIR program and the VC involvement as a form of collaboration to grow the venture. Trust plays a key role in the
willingness of the VC partner and the EIR entrepreneur to share knowledge and work together. In the EIR program the idea is to obtain better goal alignment between principal and agent through choosing the right “high status” entrepreneur and then offer compensation initiatives and partial ownership schemes (Bohren, 1998). Trust is a process where the actors regularly test each other’s integrity, moving from small, discrete exchanges of limited risk to more open-ended investment deals that subject the parties to substantial risk (Lazerson & Lorenzoni, 1999). This process should take place during the first part of the EIR program. My qualitative research will show if in investments done with EIR programs “trust” is implicit in the relationship and if agency theory is relevant.

Stewardship theory, on the other hand, characterizes human beings as having higher-order needs for self-esteem, self-actualization, growth, achievement and affiliation (Arthurs & Busenitz, 2003). It is concerned with identifying the situations in which the interests of the principal (VC) and the steward (entrepreneur) are aligned (Arthurs & Busenitz, 2003). The EIR program fits this theory perfectly. The principal and the steward commit to each other at the beginning and align their goals at that point where many potential points for latent conflict are solved, before they arise. In an EIR program venture the VC’s business advice and counseling will be taken in a fair manner based on mutual stewardship trust and not wrongly received as in other VC-E relationships (Busenitz et al., 1999; Korsgaard et al., 1995).

Perceptions of the “trust” relationship between VC partner and entrepreneur.

Lewiki & Bunker (1995, 1996) propose a typology of trust in professional relationships based on the notion of trust as residing within the individuals and being an iterative process as knowledge of the other person grows. The three trust types are briefly defined as follows:
1. **Calculus-based Trust:** is the trust that exists between individuals in the early stages of a relationship. Basically the economic calculation of the value of maintaining the relationship relative to the costs of severing it.

2. **Knowledge-based Trust:** is the trust that exists between two individuals that know each other well enough for the parties to have a history of interaction that allows each to make predictions about the other.

3. **Identification-based Trust:** is the trust that exists because the parties effectively understand and appreciate the other’s wants to such an extend that each can effectively act for the other.

During the empirical part of the study the idea is to prove that EIR programs help bring the VC/entrepreneur relationship toward the identification-based trust phase (and at least having the knowledge-based trust phase).

**Non-financial (sweat) investments.** A non-trivial difference between EIR program ventures and others is the fact that the non-financial investments of time, energy and sweat equity that entrepreneurs make usually before the VCs arrive, are done simultaneously by both the VC and the entrepreneur in the EIR program. The more psychological ownership both sides have in the venture, the more likely it is that both will offer larger amounts of sweat equity to the venture. This is in contrast to valuing pre-seed ventures less due to the VC-E agency costs (Jensen & Mecklig, 1976).

A VC partner plays a number of roles in the VC-E relationship, they find money, operating services, networking, image, moral support, general business knowledge and discipline (Vance & Hisrich, 1995). VCs are sometimes called consultants, with financial interests, because of their individual expertise, experience and willingness to give advice. They are usually in contact with the top management of the venture in order to formulate and adhere to their business strategy. VCs provide networking in order to locate service providers, law firms, marketing consultants, other outsiders (especially those with financial
interests) like other investors or banks and sometimes even customers. VCs’ image usually transfers to their portfolio companies, enhancing their standing with customers and future employees (Vance & Hisrich, 1995).

VCs used to provide their entrepreneurs with the minimum of cash required (Gorman & Sahlman, 1989) in order to get the venture going. This unwillingness of the VCs to invest in growth strategies affected the startup/seed ventures in that some of them yielded returns that were adequate (living dead) but not stunning (Bygrave & Timmons, 1991). The research will see if this behavior changes when the VCs use the EIR program and trust more the entrepreneurs.

Sweat equity (non-financial investment) is an integral component in the relationship between the VC partners and the entrepreneurs. The average time a lead VC spends with a venture averages about thirteen (13) hours a month and a non-lead VC spends less than five (5) hours average (Vance & Hisrich, 1995). Another study (Cable & Shane, 1997) shows VCs visiting their portfolio ventures an average of nineteen (19) times per year and spending one hundred (100) hours (direct contact or phone) with each venture. VC partners are usually responsible for nine (9) ventures and sit on at least five (5) other boards. Thus, each non-financial investment made in one venture cannot be made in others. VC partners sometimes refrain from providing the best non-financial investment in one firm; they diversify risks by diffusing time and tacit knowledge between multiple ventures (Sahlman, 1990). Again, the empirical research will find how this differs with EIR program ventures.

**Moderating Variables**

I will use three moderating variables:

1. existence of angel investors,
2. type of technology and date

3. gender.

**Angel investors.** There is little systematic research on the amount of angel investment in ICT industries in Israel. How has the entry of venture capital into startup/seed investment (in mass) during the last 5 years influenced the decisions of the wealthy entrepreneurs it created (will they return to the market as VC partners, EIRs, entrepreneurs or angel investors?). This variable will moderate for the existence of private angel investors in the investment syndicate of the venture.

**Technological system developed by the venture.** During *specific dates*, certain ICT submarkets were more successful than other submarkets. The model will be controlled with variables on technology (submarkets of the ICT industry) and the dates of the venture. In some eras, ICT markets have been in a rollercoaster. The market context at start-up is likely to affect the subsequent performance of the venture. Different technologies gather higher valuations in certain years, sometimes disconnected from the real value of the technologies involved. Valuations are based on the “mind-share” of the markets, because of the limited financial history of the new ventures. Adding variables about ICT market results will control the dependent variable

**Gender of the VC partner and gender of the entrepreneur.** The members of the Israeli entrepreneurial relationship (entrepreneurs and VC partners) are a strongly homogenous group. Bygrave & Timmons (1992) suggested that entrepreneurs’ pre-existing personal relations with venture capitalists enhanced the development and sustaining of cooperative relationships. Roberts (1991) found that networking with people who had prior relationships with venture capitalists, enhanced the development of cooperative venture
capital relationships. Preliminary work along these lines has found that social capital does not operate in the same ways for women and minorities as it does for white men (Burt, 1998; Burt, 2000). Extending this line of work on the inequality among groups of potential entrepreneurs is warranted in order to check access to VC financing and other resources.

An explanation for gender differences, in career development, through different societal expectations for men and women is that it leads to divergence in work preferences (Harriman, 1985). These experiences are seen as constricting career choices, compromising career potential (Gottfredson, 1981) and influencing women’s beliefs, attitudes and self-conceptions that ultimately affect their work interests and choices (Farmer, 1997). Some studies of choices involving the start-up of a venture support this perspective (Brush, 1992; Buttner and Moore, 1997; Carter, 1997), but others provide evidence that the entrepreneurial career choice is gender blind (Fagerson, 1993). Adding this variable, to the model, will test to see which point is more plausible.

**RESEARCH QUESTIONS**

**Research Aim**

To answer the question of how equity financing will evolve over the next decade given the entrance of VC (venture capital) funds (with EIR [entrepreneur in residency] programs) into very early, even pre-birth stage of ventures (investment stage previously reserved for “angel” investors).

**Research Goals**

This study will try to shed light on factors that are changing the equity financing markets by having VC firms enter early in a venture’s life. Who should be the dominant figure in new pre-seed ventures (VC firms or angel investors)? What happened to the angel
Research Questions

1. To what extend are VC funds “crowding out” the angel investor?

2. Is the percentage of VC funds that go to pre-seed and seed investments growing?

3. How many included angel investors as well?

4. What types of entrepreneurs get pre-seed money from the VCs?

5. What types of entrepreneurs get seed money from the VCs?

6. How many VC partnerships have/had EIR programs?

7. How do VCs choose entrepreneurs for the EIR programs?

8. Would the late “angel investor” be the EIR of today?

9. What is a High Status Entrepreneur in Israel (2005)?

10. Differences in how “trust” played a role in the investments where the entrepreneur is of High Status or EIR?

11. Does trust play a role for equity invested by the VC partner?

12. Will entrepreneurs that have “high marks” in previous knowledge characteristics require higher VC sweat equity than those with “low marks”?

13. Do “High Status” entrepreneurs do better than “first time” entrepreneurs?

14. Do “EIR” entrepreneurs do better than other “High Status” entrepreneurs?

15. Are there differences in the results of angel/pre-seed capital investments according to EIR, High Status or First Time entrepreneurs?

Research Methods

In order to answer these questions, up to 20 VC partners and the entrepreneurs (EIR entrepreneurs, other “High Status” entrepreneurs and “first time” entrepreneurs) who have
received startup/seed investments (equity investment at the beginning of a venture’s life) will be interviewed. Ventures that include angel investors will also be included. This mix will allow comparisons between many types of VC-Entrepreneur relationships and can shed light on pre-seed investments and the EIR programs in particular.
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