

## **Venture Capital: A Potential Model of Musharakah**

SAMI AL-SUWAILEM

*Al Rajhi Banking and Investment Corp.  
Research Center, Riyadh*

ABSTRACT. Venture capital is a form of active investment through equity-based instruments. Venture capital financing is praised for its role in promoting growth while maintaining financial stability. From an Islamic point of view, such arrangements appear very close to the model of musharakah which Islamic banks are seeking, but many in reality failed to adopt. Venture capital is also well suited to Islamic countries because of its positive impact on growth and development.

### **1. Introduction**

Venture capital is a form of equity financing in which the investor actively participates in the venture being financed. The objective is to add value to the recipient company during the financing period, so that the venture capitalist can sell his share later on with positive returns. Although the concept as such is not new, a formal market for venture capital in the U.S. started only after World War II. Venture capital institutions currently manage over \$30 billion in the U.S. and another \$30 billion in Western Europe (Bygrave and Timmons, 1992, p. 23). On average, about 60% of high-technology companies going public in the U.S. are financed through venture capital (Al-Suwailem, 1995). The concept of venture capital is increasingly attracting researchers, and academic studies of venture capital now appear regularly in professional journals.

A venture capital firm manages funds provided by investors and directs it to the most promising ventures, mainly in the form of equity. The venture capitalist, who is responsible for managing investors' funds, provides financial and strategic assistance to the recipient company and actively participates in its management. The support continues until the venture materializes, at which stage an outside investor might be interested in owning the company, or it might be able to go public. Returns then are distributed back to the investors.

From an Islamic point of view, venture capital is based on equity financing (*sharikat*), and thus falls within the framework of Islamic finance. It therefore combines economic viability and Islamic preferability, which makes it a promising option for Islamic financial institutions. Although the details of practices of existing venture capital institutions may not be totally consistent with Islamic rules, these details can be easily modified without compromising the positive aspects of its principles.

The objective of this paper is to give Islamic economists and financiers an overview of the structure of venture capital financing, with emphasis on the economic role it could potentially play. The relevance of venture capital to developing countries has been emphasized by many researchers, and the World Bank has taken a lead in this regard, as will be explained later.

Section II starts with a description of the venture capital contract, then provides analysis of its economic significance. Sections III and IV review the performance of venture capital institutions and venture-backed companies, respectively. The conclusion is given in section VI<sup>(1)</sup>.

## 2. The Structure of Venture Capital

### 2.1 Definition

General partners are responsible for managing the funds and directing them to the most promising ventures. They are typically experienced in particular industries (*e.g.*, pharmaceuticals, semiconductors, etc.). Usually, they contribute a small percentage (1%) of committed capital. Their compensation is based on the total committed capital as well as on realized gains on the fund.

Once a venture capital fund has been established, the venture capitalist must identify investment opportunities, arrange deals with entrepreneurs, monitor the investments, and ultimately achieve some return on his capital. The venture capitalist usually invests in recipient companies in the form of convertible preferred stock; that is, preferred stock that can be converted into common stock. The financing process is done in stages, and the amount of capital given at each stage is sufficient only to reach the next stage. Venture capitalists take an active role in the recipient companies through membership on boards of directors. To avoid losses, venture capitalists form a portfolio by investing in several companies at one time.

The venture capitalist continues his financial, managerial and marketing support until the venture materializes. At this stage, an outside investor (*e.g.*, a large company) might be interested in owning the recipient company, or the recipient company might prepare to go public. Returns from selling the company are then distributed to the limited partners, and the venture capitalist starts raising a new venture capital fund. For further details, consult Sagari (1992) and Sahlman (1990).

---

(1) This paper is based on Chapter 3 of my Washington dissertation. I thank my committee chairman, Professor Steve and Bruce Petersen for valuable guidance. I also thank Professor Anas Zarqa for useful discussions and comments. I am solely responsible for any errors.

## 2.2 Analysis of Venture Capital Arrangements

In an environment of uncertainty and informational asymmetry, the venture capitalist faces the problem of identifying the most promising venture, where adverse selection is common at this stage. Even after a contract between the venture capitalist and the entrepreneur is signed, possible conflicts of interest between the two parties present serious difficulties for the venture to develop and mature; such problems are usually referred to as moral hazard problems. The following discussion will analyze how the venture capital industry developed its practices and arrangements to minimize these problems.

### 2.2.1 Sharing

Venture capital is structured around a basic theme - sharing. Investors are limited partners, the venture capitalist is a general partner, and the venture capital fund finances entrepreneurs through equity. All parties, therefore, have in essence the same objective. This structure dramatically reduces possible conflicts of interest and associated moral hazard (Milgrom and Roberts, 1992). In Sahlmans words:

Because venture capitalists are compensated based on the performance of the fund they manage, they have every incentive to increase value. This is precisely why their interests and those of the companies they back are aligned. Each side of the transaction benefits if and only if value is created (1994b, p. 36).

Sharing extends even to the employees of venture-backed companies. "Successful investors found that venture capital works best when all the companys employees are granted stock in the company, thereby giving them a stake in its success" (Kunze, 1990, p. 2).

Another form of sharing is syndicating investments by more than one venture capitalist. In addition to pooling more resources and capital, syndication helps spread the risk among the venture capitalists. It also brings together more expertise and support (Lerner, 1994b). Bygrave and Timmons (1992) note that syndication also helps to share information and thus reduce uncertainty. The authors examine a data set of firms receiving venture capital during 1967-1982, and found that there was more co-investing in high-tech than in low-tech companies. This is also true for early-stage compared to late-stage companies.

Debt contracts, in contrast, suffer from inherent conflicts of interests between the borrower and the lender. Since the entrepreneur has to pay fixed payments regardless of the performance of the project, he will be better off choosing risky actions, exposing the lender to the risk of default, as Stiglitz and Weiss (1981) show. This leads to serious moral hazard problems and agency costs.

### 2.2.2 Monitoring and Assistance

Sharing has important consequences. One is that it creates incentives for the capital provider to monitor and assist his partner (Davis, 1992, p. 265). Given the

venture capitalist's stake in the venture, the better the quality of assistance he provides to the entrepreneur, the better the likelihood that the venture will succeed, and therefore, the higher the expected value of his stake. It is often remarked that the financial contribution that the venture capitalists make may be less valuable than the business expertise and contacts they contribute to small ventures (Sagari, 1992). One venture capitalist writes, "A venture capitalist is not merely a money manager for investors funds but also a full partner with the entrepreneur, sharing a mutual goal of creating a valuable company" (Kunze, 1990, p. 3).

Based on a survey obtained from a sample of venture capitalists, Gorman and Sahlman (1989) found that venture capitalists spend about half their time monitoring and assisting their portfolio investments. They also found that venture capitalists provide three critical services in addition to providing money: (1) building the investor group, (2) reviewing and helping to formulate business strategy, and (3) filling in the management team.

Sapienza (1992) analyzes 51 questionnaire responses from a sample of entrepreneurs/CEOs of venture-backed companies, matched by those of lead venture capitalists in these companies. The study found that the average value-added by venture capitalists, as perceived by both venture capitalists and entrepreneurs, is significantly positively related to the level of innovation pursued by these companies, but negatively related to their size. This shows that the assistance venture capitalists provide is particularly useful for small, highly innovative ventures. Sapienza concludes that "the provision of money alone appears to play a necessary but far-from-sufficient condition to promote economic growth and resilience; evidence is mounting that venture capitalists do add value" (p. 22).

Such a degree of involvement by venture capitalists would be inconceivable from traditional financiers. Combining harmony of interests with monitoring and assistance, we see how venture capital structure helps to overcome the high risk and informational asymmetries associated with typical ventures.

### **2.2.3 Selection Criteria**

Sharing also affects the selection criteria of ventures. The type of information and criteria that venture capitalists look after when selecting a company reflects their preferences as active investors and shareholders. As equity holders, venture capitalists would profit most from fast-growing companies, as this would translate into higher value of their equity. The bias of venture capitalists towards small and innovative companies, therefore, is not accidental. For example, venture capital funds directed an average of 60% of total annual disbursements to high-tech ventures during the period 1985-1993 (*Venture Capital Journal*). This preference can be compared to that of commercial bankers (Sagari, 1992, and Rosman and O'Neill, 1993). Since bankers invest mainly through lending, they usually target mature, well-established companies whose financial histories reflect their viability as good borrowers. This sharp difference

in preferences between venture capitalists and commercial bankers has a significant impact on market growth and development (see section II.3 below).

#### **2.2.4 Staging Capital Commitment**

Another essential feature of venture capital is staging the commitment of capital to portfolio ventures (Sahlman, 1988, 1990, 1994b). This feature is closely related to equity financing. In a sharing contract with asymmetric information (*i.e.* without monitoring), the entrepreneur always has an incentive to under-report profits (see Bolton and Scharfstein, 1990, for a formal model). This entails the investor receiving a smaller share of the profits, thus increasing his own. By staging capital, such incentive is inhibited, since the entrepreneur has to return to the venture capitalist to obtain capital for the next stage of the project. This mechanism, furthermore, encourages the entrepreneur to optimize his efforts to convince the venture capitalist to continue his support.

Staging the commitment of capital also helps reduce the uncertainty typically surrounding small ventures. As time passes, the venture capitalist is able to gather more information about the team, the market and the product, thus reducing major risks and uncertainties considerably (Sahlman, 1988). Moreover, by staging the commitment of capital the venture capitalist gains the option to abandon and to revalue the project as new information arrives (*ibid.*, p. 29). As Sahlman shows, this option in fact raises the value of the investment. This is the corner stone of the recent theory of investment under uncertainty, in which the irreversibility of investment creates value for the option of waiting for better information (Dixit and Pindyack, 1994). Gompers (1995) provides an empirical evidence on the importance of staging venture capital in gathering information on financed projects, where he found that high-tech companies, with less tangible assets and higher risks, are subject to more frequent monitoring by venture capitalists.

#### **2.2.5 Adverse Selection**

Several writers, *e.g.* Sahlman (1990), Amit *et al.* (1990a, 1990b) and Petersen (1992), expressed concerns about adverse selection in the venture capital market. The reason behind these concerns is the relatively high costs of obtaining venture capital. Such costs would greatly affect the type of entrepreneurs seeking venture capital. For the venture capital market to operate with minimum efficiency, benefits of venture capital must outweigh its costs. These are discussed in turn below.

#### **Costs of Venture**

Capital Prior to striking a deal, the venture capitalist must value the entrepreneurs project. Based on this valuation the venture capitalist would buy shares in the venture and hence provides capital to the entrepreneur. In the presence of asymmetric information, the venture capitalist cannot perfectly distinguish high-quality entrepreneurs and/or ventures from low-quality ones. This is especially true for early-stage ventures. Such ventures usually have no product revenues, a partial or emerging

management team, a less than fully demonstrated technology and undemonstrated market potential (Coopers and Lybrand, 1993). Uncertainty in such cases is tremendous and thus informational asymmetry could affect the venture capitalists valuation of the venture the most. This is usually translated in high discount rates, up to 70% for startup companies (Sahlman, 1990). High-quality entrepreneurs would view such valuation to be less than what they deserve and hence have an incentive to drop off the market, seeking capital from other sources.

Another potential source of adverse selection is dilution of ownership. By involving a venture capitalist, the entrepreneur loses some, frequently substantial, control rights over the venture. For some, the motivation for being an entrepreneur is actually "to control their destiny" (Kunze, 1990, p. 44). Dilution of ownership therefore can be viewed as a non-pecuniary cost that the entrepreneur has to pay to obtain venture capital. Further, entrepreneurs who have strong confidence in their quality/project might generally prefer to have full control over the venture, since in this case they will enjoy all returns if the project is successful. However, if the entrepreneur expects the project to fail, he will be better off involving a venture capitalist. These costs might cause the mix of applicants seeking venture capital to deteriorate. Venture capitalists, in anticipation of such results, would expect every applicant to be of low quality; at the extreme, the venture capital market might break down.

### **Benefits of Venture Capital**

The venture capital market exists, however, and there must be reasons for that. Factors that help reduce adverse selection can be classified into two categories. One category includes factors that create incentives for high-quality entrepreneurs to remain in the market in spite of the costs involved. The other includes those that create incentives for venture capitalists to back entrepreneurs of unknown quality or believed to be of the low-quality type.

On the entrepreneurs side, we find many high-quality entrepreneurs that do not have sufficient resources to run their ventures on their own. Traditional sources of capital, *e.g.* banks, are usually reluctant to provide capital to such ventures because of the high risks involved. Hence such entrepreneurs have no choice but to look for venture capital, either through formal venture capital funds or informal angels, as a source for external capital. Further, if the entrepreneur is risk-averse, he would involve the venture capitalist because of the risk-sharing property of equity financing. Amit *et al.* (1990a, 1990b) show that sufficiently high incentives for risk sharing would induce some high-quality entrepreneurs to accept the average bid by the venture capitalist.

Many high-quality entrepreneurs, although innovative and productive, lack the required experience in management, marketing, and financial planning. In this case the entrepreneur might be willing to accept venture capital in compensation for the experience and contacts of the venture capitalist. Warne (1988) shows that, if assistance cannot be acquired separately through a competitive market and in presence

of asymmetric information, entrepreneurs would be willing to pay more for venture capital than for a loan without assistance (p. 81).

A related factor is the reputation that the entrepreneur would get by obtaining venture capital. Such reputation helps the entrepreneur to obtain further capital in the future at a lower cost than otherwise. For example, venture-backed initial public offerings (IPOs) are generally better valued than non-venture-backed IPOs, as will be explained later. Banks might be willing to lend a venture-backed entrepreneur more than a non-venture-backed one. Hence an entrepreneur might forego the initial high costs in return for relatively low-cost capital from other sources of capital.

Finally, staging capital commitments might induce high-quality entrepreneurs to apply for venture capital but deter those of low quality. The point is similar to Flannery's (1986) explanation of a firm's choice to issue short-term debt. Flannery argues that, when issuing debt is costly, high-quality firms can sometimes effectively signal their true quality to the market by issuing short-term debt, while low-quality firms will issue only long-term debt. It is also similar to Hermalin's (1986) argument that more-able workers will sign short-term contracts to signal their ability. A similar argument can be presented for the venture capital market. Bolton and Scharfstein (1990) make this analogy stating: "Entrepreneurs who have confidence in the venture accept contracts of this form [*i.e.* with capital provided in stages] because they know that when they return for more funding it will be at favorable terms" (p. 98).

On the venture capitalists side, we noted earlier that venture capitalists add value to their portfolio ventures. This added value might compensate for the entrepreneurs' low ability. Further, the venture capitalist usually has enough control over the venture to replace the management or, if necessary, assume the responsibilities of the CEO himself (Kunze, 1990).

Staging capital also allows the venture capitalist to back an entrepreneur even though the quality of the latter is not fully known prior to the engagement of the former. Barry (1994) notes that the venture capitalists "make a relatively small commitment initially and only commit additional funds after the entrepreneurs have been able to demonstrate in deed rather than words the promises made to attract funds" (p. 11). Hence, the venture capitalist, if necessary, can use the option to abandon to deny funding an entrepreneur found to be of poor quality.

## Conclusion

These factors, combined, show how venture capital arrangements address agency problems and thus attenuate, though not eliminate, their implications for investment decisions. They also point to the costs and benefits of obtaining venture capital. Venture capital is not without costs, and one can see when venture capital would have net benefits and when it would have net costs. For example, for a risk-neutral entrepreneur with high net worth and a low-risk project, costs of venture capital might be prohibitive. On the other extreme, a risk-averse entrepreneur with limited resources

and a relatively high-risk project might find venture capital as the only source of capital. Between these extremes it is difficult to draw a line, and it is very likely that cases for which venture capital is a net benefit will not be constant over time.

### 2.3 Growth and Development

Venture capital arrangements are information-intensive. The venture capitalist must be an expert in both management and finance, and in the specific industry to which the venture belongs. In addition, he must be involved in the detailed operations of the recipient company. Theoretically, such arrangements can be most rewarded in environments where uncertainty and asymmetry of information most prevail. It is precisely such environments that traditional methods of financing, *e.g.* bank loans or public capital markets, fail to accommodate well.

The structure of venture capital is well suited to addressing problems of informational asymmetry and agency costs that are most pronounced in high-risk environments with high potential of growth, such as high-tech industries and small businesses, as well as emerging markets and developmental projects.

According to Schumpeter (1942), a driving force for growth is innovation. Venture capitalists are able to explore territories and break barriers that traditional financiers, because of the lack of information and high risks, are unable to explore. And here is where major technological advances most likely lie. According to Florida and Kenney (1988, p. 128):

Due to the intensive flows of information at their disposal, venture capitalists are well positioned to spot the opportunities that arise as critical barriers are breached. It is at these junctures that they perform a gatekeeping function, intervening to help create new companies and actualize important breakthroughs, while capturing the economic rents that come from being first across such boundaries.

Florida and Kenney continue:

Although only a small subset of all venture investments ultimately pays off, the most important choices or technological bets made by venture capitalists in fields such as semiconductors, personal computers and biotechnology have disrupted existing sociotechnical trajectories and opened up whole new frontiers for technological progress, setting the stage for clusters of imitative activity and swarms of improvement innovations.

The authors argue that venture-capital-financed innovation represents a new model of innovation that goes beyond both classical entrepreneurship and corporate-based innovation.

Scherer (1984, ch. 11) finds that it is small companies, rather than large ones, that are more able to create innovations. Normally, such firms “have little or not enough cash flow to support debt obligations; high quality information on their activities and



prospects may be impossible or very costly to obtain externally, and their level of capitalization is very low” (Sagari, 1992, p. 1). These factors create serious moral hazard and adverse selection problems that cannot adequately be dealt with through debt contracts. Sagari, a researcher at the International Finance Corporation (IFC), criticizes World Bank operations which attempt to provide financial support for development mostly through long-term loans. This model of financing development “has provided in practice a fertile ground for the flourishing of moral hazard problems which jointly with inadequate follow-up have led to a poor performance from both a developmental and a financial perspective” (ibid.). Sagari then suggests the model of venture capital to those who in practice attempt to solve some of the financial problems of the developing world (ibid., p. 2). Bond and Carter (1994) point out that commercial banks are not suited to financing infrastructure projects in developing countries. Banks cannot lend large volumes of long-term debt simply because they are constrained by the time profile of their deposits. Other institutions with long-term deposits, *e.g.* pension funds and life assurance companies, provide a better match of maturity but are highly risk-averse. Bond and Carter, also with the IFC, note that “IFCs experience indicates that it is the combination of risk finance and performance-linked contracts that determines the success of private infrastructure projects” (p. 25).

Other writers have also suggested the venture capital model for development, including Klein (1991), Gibson and Blake (1992) and Lenzi (1992). It is worth noting, however, that establishing venture capital institutions in less developed countries is not a trivial task. A successful venture capital market requires well defined property rights, an effective legal system, positive social attitudes towards sharing, as well as entrepreneurial activities, and an efficient mechanism for venture capitalists to cash out their investments, such as a functioning market for public securities and/or mergers and acquisitions. Usually one or more of these elements is not established in most LDCs. Further research is needed in this direction, and how LDC governments can help circumvent these obstacles and promote the venture capital market.

## **2.4 Financial Stability**

Since equity is considered as an alternative to debt financing, one cannot ignore its link to financial stability. The reason is that the “financial instability” hypothesis, advanced by Hyman Minsky (1975, 1982), is built on the widespread use of debt in current capitalist economies. The financial fragility hypothesis, however, is not confined to advanced capitalist economies. The world debt crisis is a practical example of how financial instability affects developing countries as well (Felix, 1994). Although Minsky provides a compelling theory of aggregate economic performance, he apparently provides no remedy for financial instability. Capitalism is inherently unstable. Minskians advocate discretionary economic policy as a way of mitigating the influence of financial shocks, but realize that the “lender of last resort” policy only deepens the long-term trend towards fragility (Dymski and Pollin, 1992). This is what some researchers call “the Minsky paradox” (Pollin and Dymski, 1994).

To resolve this paradox, and to reverse the thrust towards fragility, one should seek market-oriented remedies. Such policies should be directed towards ways that “stimulate use of equity finance more generally, so as to render the economy more robust” (Davis, 1992, p. 265). Equity enjoys “superiority to debt in terms of risk-sharing,” and therefore, “a greater proportion of equity in a balance sheet reduces risks of financial fragility, bank runs, and systemic risk” (ibid.). Klein (1991) evaluates the world debt crisis and how high indebtedness exposed borrowing countries to severe economic hardship. “Had they elected an equity route of financing instead of a debt route, they would not have incurred such an inflexible burden” (p. 374).

Venture capital thus is a compelling option to financing investment and development which inhibits the “thrust towards fragility” emphasized by Minsky. Financial instability, therefore, need not be inherent in market economies.

### **3. Performance of Venture Capital Funds**

#### **3.1 History**

According to Bygrave and Timmons (1992), the first formal venture capital firm, American Research & Development (ARD), was established in 1946. The concept of venture capital, however, did not attract wide attention until 1960, after Digital Equipment Corporation (DEC), which was backed by ARD, became a success story. Recessionary pressures and significant tax increases by late 1969 “spelled catastrophe for the venture capital industry, and its death was reported in leading business publications” (ibid., p. 22). The 1974-1975 recession even worsened the situation. In 1978 Congress approved the 1978 Revenue Act, which reduced the personal capital gains tax from 49.5% to 28%. Many believe that this reduction played a major role in stimulating equity investments in venture capital funds (Warne, 1988). Another important factor was the revision in 1979 of the Employee Retirement Income Security Act (ERISA) to allow pension funds to make high-risk investments, including venture capital arrangements. These two factors significantly affected the venture capital market: during 1979-1985 total committed capital for venture funds was \$12.2 billion, while during 1970-1977 it has been only \$.47 billion (Warne, 1988). Other acts approved during 1980-1981 also helped improve the legal structure and risk exposure of venture capitalists (Bygrave and Timmon, 1992). The institutional environment was then ready to incubate venture capital firms of the venture capital industry.

The period 1978-1987 is considered as the golden age for the venture capital industry. Several success enterprises, like Apple Computers, Lotus, Intel, Federal Express, Microsoft, Sun Microsystems, Compaq, and Genetech, made the venture capital industry an attractive option for investing. Each of these companies received venture capital early in its development, and later went public, and the payoff for each was substantially high. For example, some venture capital funds invested around \$3.5 millions in Apple during 1978-1979. When Apple went public in late 1980, the approximate value of the venture capitalists investment was \$271 millions (Sahlman, 1990). The strong performance of the industry, however, was not consistent in later years. The late eighties witnessed a decline in rate of return and number of venture-

backed initial public offerings. However, recent data indicate that the industry is regaining its performance. Sahlman (1994a) considers these patterns to be merely cyclical. Further details are found in Camp and Sexton (1992), Bygrave and Timmons (1992) and Beltz (1994).

### 3.2 Size of the Venture Capital Market

Many writers consider the size of the institutional venture capital market to be modest. For example, few hundreds of new firms receive venture capital (Table 1), while the number of new business incorporations in the U.S. runs in the hundreds of thousands. Further, average total capital under management of venture capital funds in 1990-1993, for example, was \$33.3 billion, while in the same period outstanding commercial and industrial loans by U.S. banks were \$462.4 billion. These numbers show that the venture capital market is rather small. If venture capital suffers less agency costs than other forms of financing, one would expect it to enjoy a larger share in the economy.

Careful examination of the data, however, reveals that venture capital occupies a significant share of the capital market. As the data in Sahlman (1990) show, on average, 30% of non-farm, non-financial companies going public in the U.S. during 1980-1988 were backed by venture capital firms; the ratio is similar for the years 1991-1993 (see Al-Suwailem, 1995, ch. five). Among high-tech companies going public in 1991-1993, about 60% were backed by venture capital. Further, total capital raised through IPO during 1980-1988 was \$36.1 billion, while total venture capital disbursements during the same period was \$22.7 billion (*Venture Capital Journal*).

Table 1: Flow Measures of Venture Capital (Dollar amounts are in millions)

Year	Raised Capital, \$	Disbursement, \$		No. of Funded Firms	
		New	Follow on	New	Follow on
1993	2,545	1,095	1,976	276	693
1992	2,548	671	1,871	317	770
1991	1,271	277	1,082	173	647
1990	1,847	686	1,615	259	759

Source: *Venture Capital Journal*, various issues.

Comparing venture capital with public sources of capital might not be particularly informative. Venture capital is a form of information-intensive, long-term financing, and thus should be compared only with similar forms of financing. The most comparable form is long-term commercial and industrial bank loans. Bank loans require screening and monitoring of borrowers and, hence, have approximately comparable costs of collecting information as venture capital financing. However, venture capital financing requires, in addition, specialized experience in certain industries, as well as active involvement in the management of the recipient company. This makes venture capital financing more costly than lending and might therefore have smaller size. According to the Federal Reserves Bulletin (June, 1994, p. 488), loans with more than five years of maturity represent 11-12% of loans made by commercial banks in any year during 1990-1993. Based on this ratio, the average of

long-term loans during 1990-1993 is \$53.9 billion (Table 2). On the other hand, average venture capital under management in the same period is \$32.4 billion. This means that formal venture capital is about 60% of total long-term commercial and industrial loans held by all U.S. commercial banks.

Table 2: Venture Capital Pool vs. Commercial & Industrial Loans. (Billions of Dollars)

Year	Venture Capital	Long-term C&I Loans*	Total C& I Loans	%**
1993	34.8	50.9	434.7	68.4
1992	31.1	51.3	438.7	60.3
1991	32.9	53.8	463.4	61.2
1990	35.9	59.5	512.7	60.6

\* Outstanding commercial and industrial loans by U.S. domestic banking institutions, all size, with maturity of more than five years.

\*\* Venture capital vs. Long-term C&I loans.

Source: *Venture Capital Journal* and *Federal Reserve Bulletin*; various issues.

### Informal Venture Capital Market

Note that the numbers mentioned above are only for formal or professional venture capital firms; it does not include informal venture capital or “business angels,” wealthy investors experienced in certain industries who are willing to invest actively in start-ups and small enterprises. The informal risk capital market is probably less structured and efficient, but it plays an important role in providing seed capital for entrepreneurs. Wetzel (1983) argues that angels may represent the largest source of venture capital in the U.S., and that “they finance perhaps five times as many ventures as the public equity markets and professional venture capitalists combined” (p. 32).

Wetzel (1992) estimates that angels invest around \$30 billion annually, which is at least ten times the amount invested by institutional venture funds (ibid, p. 52). According to Wetzel, angels do not include friends or relatives. Risk capital provided by family or relatives is documented (Poza, 1989), but accurate estimates of its size are not available, although there are strong indicators that family business is not a small segment in the economy.

### Global Venture Capital

Although formal venture capital originated in the U.S., it is by no means an American phenomena. According to Bygrave and Timmon (1992), global venture capital market in 1990 exceeded \$80 billions, more than half of it is outside the U.S.

Until 1980, formal venture capital was virtually limited to the U.S. market. During 1986-1990, venture capital in Europe grew from \$9 to \$29 billions; that is, more than three folds. Similarly, in the same period, the venture capital market in Japan grew from \$3 to \$10 billions; in Canada from \$1.3 to \$3 billions; in Korea from \$450 millions to \$1 billion. In 1990, the size of venture capital in Australia was around \$800 millions, and in Hong Kong around \$1 billion.

Venture capital is not limited to industrial countries. The World Bank, through International Finance Corporations, helped establishing venture capital funds in Kenya, Brazil and Philippine, with total assets of \$350 millions as of 1988 (ibid). During 1993-1994, the IFC helped also establishing funds in Latin America, Eastern Europe and Asia to finance private energy projects. Total assets of these funds reaches \$700 millions (Bonds and Carter, 1994). Furthermore, the IFC is planning to establish an international energy fund, with capital of \$2.5 billions (ibid).

Together, these figures reveal that the venture capital market is not as small as it might appear. In fact, given its small age compared with commercial banks, the size of the market is rather significant.

#### **4. Performance of Venture-Backed Companies**

In general, there is enough evidence to believe that venture-backed companies perform superiorly compared to similar non-venture-backed ones. This is consistent with the premise that venture capital addresses agency problems better than traditional finance.

Mull (1990) examines a set of 340 venture-backed companies matched pair-wise by a set of 340 non-venture-backed companies. These companies went public during the period 1983-1987. The author finds that (1) Venture-backed firms have a higher variance of earnings per share than non-venture-backed firms. This indicates that the former are in general riskier than the latter. (2) Venture-backed firms use lower levels of debt than non-venture-backed firms. As Mull explains, this is so since venture-backed projects tend to be riskier than their counterparts, and venture capitalists tend to use convertible preferred stock as a replacement for debt. (3) Venture-backed firms have higher R&D spending levels than non-venture-backed firms. (4) Venture-backed firms achieve higher growth rates in revenues and total assets than their counterparts. Similar results were found by McNaughton (1990) for Canadian firms.

Al-Suwailem (1995) compares 236 small, high-tech companies backed by venture capital with 138 companies of the same size and in the same industries not backed by venture capital, both prior to their public offering. Several hypotheses are developed to test the accessibility of each group to the capital market as well as the sensitivity of their investment spending to internal funds. The results show that venture-backed firms (1) raise more external finance, (2) pay lower interest rates, and (3) face lower shadow costs of capital than non-venture-backed companies. Further, investment spending of venture-backed companies is found to be less sensitive to cash flow and balance sheet conditions. These results support the argument that venture capital arrangements effectively reduce informational asymmetry and agency costs problems.

Other studies (Barry *et al.*, 1990; Lim and Saunders, 1990, and Megginson and Weiss, 1991) found that venture-backed public offerings use higher-quality underwriters than non-venture-backed issues. This reflects the confidence of such underwriters in the profitability and performance of venture-backed companies.

## 5. Conclusion

This paper summarizes the main theoretical and empirical aspects of venture capital. Venture capital, as an active equity form of financing, enjoys merits well suited to minimize agency costs and to promote growth and development. In addition, venture capital contracts attempt to avoid failures usually associated with publicly traded equity. Venture-backed companies tend to consistently outperform non-venture-backed companies. In principle, the venture capital contract is much similar to the *inān* type of *musharakah*, which makes it a potential avenue for Islamic financial institutions to invest their funds. But these observations by no means imply that venture capital arrangements are devoid of failures or illegal practices; yet it presents a compelling alternative for financing investment, especially in Islamic countries.

## References

- Admati, A. and Pfleiderer P.**, 1994, "Robust Financial Contracting and the Role of Venture capitalists", *Journal of Finance*, Vol. **49**, pp. 371-402.
- Al-Suwailem, S.**, 1995, *Does Venture Capital Financing Make a Difference?*, Doctoral Dissertation, Washington University, St. Louis, Missouri.
- Amit, R., Glosten, L. and Muller, E.**, 1990a, "Does Venture Capital Foster the Most Promising Entrepreneurial Firms?", *California Management Review*, Vol. **32**, pp. 102-111.
- Amit, R., Glosten, L. and Muller, E.**, 1990b, "Entrepreneurial Ability, Venture Investments, and Risk Sharing", *Management Science*, Vol. **36**, pp. 1232-1245.
- Barry, C.**, 1994, "New Directions in Research on Venture Capital Finance", *Financial Management*, Vol. **23**, pp. 3-15.
- Barry, C., Muscarella, C., Peavy, J. and Vetsuypens, M.**, 1990, "The Role of Venture Capital in the Creation of Public Companies", *Journal of Financial Economics*, Vol. **27**, pp. 447-471.
- Beltz, Cynthia**, ed., 1994, *Financing Entrepreneurs*, AEI Press.
- Bolton, P. and Scharfstein, D.** 1990, "A Theory of Predation Based on Agency Problems in Financial Contracting", *American Economic Review*, Vol. **80**, pp. 93-106.
- Bond, G. and Carter, L.** 1994, "Financing Infrastructure Projects, Emerging Trends from IFCs Experience", International Financial Corporation (IFC), *Discussion Paper* no. 23.
- Bowden, R.**, 1994, "Bargaining, Size and Return in Venture Capital Funds", *Journal of Business Venturing*, Vol. **9**, pp. 307-330.
- Bygrave, W. and Timmon, J.**, 1992, *Venture Capital at the Cross Roads*, Harvard Business School Press.
- Camp, S. M. and Sexton, D.**, 1992, "Trends in Venture Capital Investment: Implications for High-Technology Firms", *Journal of Small Business Management*, July, pp. 11-19.
- Carter, R. and Van Auken H.**, 1994, "Venture Capital Firms Preferences for Projects in Particular Stages of Development", *Journal of Small Business Management*, Vol. **32**, pp. 60-73.
- Chan, Y.**, 1983, "On the Positive Role of Financial Intermediation in Allocation of Venture Capital in a Market with Imperfect Information", *Journal of Finance*, Vol. **38**, pp. 1543-1568.
- Chan, Y., Siegel, D. and Thakor, A.**, 1990, "Learning, Corporate Control and Performance Requirements in Venture Capital Contracts", *International Economic Review*, Vol. **31**, pp. 365-381.

- Clark, A.**, 1994, "Technology Policy and Venture Capital", in **Beltz, C.**, (ed.), *Financing Entrepreneurs*, The AEI Press.
- Coopers & Lybrand**, 1993, *Venture Capital: The Price of Growth*. A report prepared by Coopers & Lybrand group.
- Davis, E.**, 1992, *Debt, Financial Fragility, and Systemic Risk*, Oxford University Press.
- Dixit, A. and Pindyack, R.**, 1994, *Investment under Uncertainty*, Princeton University Press.
- Dymski, G. and Pollin, R.**, 1992, "Hyman Minsky as Hedgehog: The Power of the Wall Street Paradigm", in **Fazzari, S. and D. Papadimitriou**, (eds.), *Financial Conditions and Macroeconomic Performance, Essays in Honor of Hyman P. Minsky*, M.E. Sharpe, pp. 27-61.
- Felix, D.**, 1994, "Debt Crisis Adjustment in Latin America: Have the Hardships Been Necessary?", in **Dymski, G. and R. Pollin**, (eds.), *New Perspectives in Monetary Macroeconomics, Explorations in the Tradition of Hyman P. Minsky*, The University of Michigan Press, pp. 169-197.
- Flannery, M.**, 1986, "Asymmetric Information and Risky Debt Maturity Choice", *Journal of Finance*, Vol. **41**, pp. 19-37.
- Florida, R. and M. Kenney**, 1988, "Venture Capital-Financed Innovation and Technological Change in the USA", *Research Policy*, Vol. **17**, pp. 119-137.
- Freear, J., Jeffrey, S., and Wetzel, W.**, 1994, "Angels and non-Angels: Are there Differences?", *Journal of Business Venturing*, Vol. **9**, pp. 109-123.
- Gibson, L. and Blake, S.**, 1992, "Venture capital and Economic Development", *Economic Development Review*, Vol. **10**, pp. 41-46.
- Gompers, P.**, 1995, "Optimal Investment, Monitoring, and the Staging of Venture Capital", *Journal of Finance*, Vol. **50**, no. 5.
- Gorman, M. and Sahlman, W.**, 1989, "What Do Venture Capitalists Do?", *Journal of Business Venturing*, Vol. **4**, pp. 231-248.
- Harsanyi, J.**, 1967, "Games with Incomplete Information Played by Bayesian Players, Part I. The Basic Model", *Management Science*, Vol. **14**, pp. 159-182.
- Harsanyi, J.**, 1995, "Games with Incomplete Information", *American Economic Review*, Vol. **85**, pp. 291-303.
- Hermalin, B.**, 1986, "Adverse Selection and Contract Length", memo, MIT.
- Klein, L.**, 1991, "Financial Options for Economic Development", *The Pakistan Development Review*, Vol. **30**, pp. 369-393.
- Kunze, R.**, 1990, *Nothing Ventured*, Harper Collins Publishers.
- Leland, H. and Pyle, D.**, 1977, "Informational Asymmetries, Financial Structure and Financial Intermediation", *Journal of Finance*, Vol. **32**, pp. 123-137.
- Lenzi, R.**, 1992, "Nontraditional Sources of Economic Development", *Economic Development Review*, Vol. **10**, pp. 11-19.
- Lerner, J.**, 1994a, "Venture Capitalists and the Decision to Go Public", *Journal of Financial Economics*, Vol. **35**, pp. 293-316.
- Lerner, J.**, 1994b, "The Syndication of Venture Capital Investments", *Financial Management*, Vol. **23**, pp. 16-27.
- Lim, J. and Saunders, A.**, 1990, *Initial Public Offerings: The Role of Venture Capitalists*, The Research Foundation of the Institute of Chartered Financial Analysts, USA.
- Mattesini, F.**, 1993, *Financial Markets, Asymmetric Information and Macroeconomic Equilibrium*, Dartmouth Publishing Co.
- McNaughton, R.**, 1990, "The Performance of Venture-Backed Canadian Firms, 1980-1987", *Regional Studies*, Vol. **24**, pp. 109-121.
- Meggison, W. and Weiss, K.**, 1991, "Venture Capitalists Certification in Initial Public Offerings", *Journal of Finance*, Vol. **46**, pp. 879-903.

- Milgrom, P. and Roberts, J.**, 1992, *Economics, Organization & Management*, Prentice Hall.
- Minsky, H.**, 1975, *John Maynard Keynes*, Columbia University Press.
- Minsky, H.**, 1982, *Can it Happen Again? Essays on Stability and Finance*, M.E. Sharpe.
- Mull, F.**, 1990, *Towards a Positive Theory of Venture Capital*, Doctoral Dissertation, University of Georgia.
- Myers, S. and Majluf, N.**, 1984, "Corporate Financing and Investment Decisions when Firms have Information that Investors Do not have", *Journal of Financial Economics*, Vol. **13**, pp. 187-221.
- Petersen, B.**, 1992, "Roundtable on U.S. Risk Capital and Innovation", *Journal of Applied Corporate Finance*, Vol. **4**, pp. 48-78.
- Pollin, R. and Dymski, G.**, 1994, "The Costs and Benefits of Financial Instability: Big Government Capitalism and the Minsky Paradox", in **Dymski, G. and R. Pollin**, (eds.), *New Perspectives in Monetary Macroeconomics, Explorations in the Tradition of Hyman P. Minsky*, The University of Michigan Press, pp. 369-401.
- Poza, E.**, 1989, *Smart Growth*, Jossey-Bass Publishers.
- Rosman, A. and O'Neill, H.**, 1993, "Comparing the Information Acquisition Strategies of Venture capital and Commercial Lenders", *Journal of Business Venturing*, Vol. **8**, pp. 443-460.
- Rothschild, M. and Stiglitz, J.**, 1970, "Increasing Risk: I, A Definition", *Journal of Economic Theory*, Vol. **2**, pp. 225-243.
- Sagari, S.**, 1992, "Venture Capital: Lessons from the Developed World for the Developing Markets", International Financial Corporation (IFC), *Discussion Paper* no. 13.
- Sahlman, W.**, 1988, "Aspects of Financial Contracting in Venture Capital", *Journal of Applied Corporate Finance*, Vol. **1**, pp. 23-36.
- Sahlman, W.**, 1990, "The Structure and Governance of Venture-Capital Organizations", *Journal of Financial Economics*, Vol. **27**, pp. 473-521.
- Sahlman, W.**, 1994a, "Dont Fix What is not Broken", in **Beltz, C.**, (ed.), *Financing Entrepreneurs*, The AEI Press.
- Sahlman, W.**, 1994b, "Insights from the Venture Capital Model of Project Governance", *Business Economics*, July, pp. 35-37.
- Sapienza, H. J.**, 1992, "When Do Venture Capitalists Add Value?", *Journal of Business Venturing*, Vol. **7**, pp. 9-27.
- Scherer, F.**, 1984, *Innovation and Growth: Schumpeterian Perspectives*, MIT Press.
- Schumpeter, J.**, 1942, *Capitalism, Socialism and Democracy*, Harper and Row Publishing Co.
- Stiglitz, J. and Weiss, A.**, 1981, "Credit Rationing with Imperfect Information", *American Economic Review*, Vol. **71**, pp. 393-410.
- Stiglitz, J. and Weiss, A.**, 1983, "Incentive Effects of Termination: Applications to the Credit and Labor Markets", *American Economic Review*, Vol. **73**, pp. 393-410.
- Stiglitz, J. and Weiss, A.**, 1987, "Credit Rationing with Many Borrowers", *American Economic Review*, Vol. **77**, pp. 228-231.
- Stiglitz, J. and Weiss, A.**, 1992, "Asymmetric Information in Credit Markets and its Implications for Macro-Economics", *Oxford Economic Papers*, Vol. **44**, pp. 694-724.
- Thompson, R.**, 1993, *The Influence of Venture Capital Funding on Firm Performance and Time to Initial Public Offering*, Doctoral Dissertation, University of Colorado at Boulder.
- Townsend, R.**, 1979, "Optimal Contracts and Competitive Markets with Costly State Verification", *Journal of Economic Theory*, Vol. **21**, pp. 265-293.
- Tyebjee, T. and Bruno, A.**, 1984, "A Model of Venture Capitalist Investment Activity", *Journal of Business Venturing*, Vol. **30**, pp. 1051-1066.
- Vincenti, L.**, 1994, "Fund Raising Swells to Record-Breaking High", *Venture Capital Journal*, July, pp. 39-42.



- Warne, K.**, 1988, *Essays on the Venture Capital Market*, Doctoral Dissertation, Yale University.
- Weinberg, J.**, 1994, "Firm Size, Finance, and Investment", *Economic Quarterly*, Federal Reserve Bank of Richmond, Vol. **81**, pp. 19-40.
- Wetzel, W.**, 1983, "Angels and Informal Risk Capital", *Sloan Management Review*, Vol. **24**, pp. 23-34.
- Wetzel, W.**, 1992, "Roundtable on U.S. Risk Capital and Innovation", *Journal of Applied Corporate Finance*, Vol. **4**, pp. 48-78.
- Williamson, S.**, 1986, "Costly Monitoring, Financial Intermediation, and Equilibrium Credit Rationing", *Journal of Monetary Economics*, Vol. **18**, pp. 156-179.

## رأس المال المخاطر: نموذج محتمل للمشاركة

سامي إبراهيم السويلم

مركز البحوث - شركة الراجحي المصرفية للاستثمار

الرياض - المملكة العربية السعودية

**المستخلص:** "رأس المال المخاطر" هو صورة لاستثمار نشط مبني على أدوات المشاركة في حقوق الملكية. ومما يذكر من مزاياه تشجيعه النمو مع حفظ الاستقرار المالي. ويبدو من وجهة إسلامية أنه قريب جداً من نموذج المشاركة الذي تتوق إليه البنوك الإسلامية وإن لم يفلح أكثرها في تبنيه. و"رأس المال المخاطر" ملائم جداً للبلاد الإسلامية لأثره الإيجابي على التنمية.