

John K. Thompson
Comments on
Engineering a Venture Capital Market: Lessons from the American Experience

by Ronald J. Gilson

Professor Gilson's article notes that venture capital has made a significant contribution to the growth and dynamism of the American economy. In order to appreciate this contribution fully, it is well to remember that over the past two decades many countries had become very pessimistic concerning their own economic prospects. Particularly in the 1990s, many commentators have postulated an incapability to generate employment and to gain strategic advantages in new and innovative industries -- areas where the American economy has excelled. One of the alleged reasons for this shortcoming was the inability of many financial systems to supply capital to small and medium sized enterprises (SMEs) which have been seen as a powerful engine of job creation. One subset of SMEs, Technology-Based Small Firms (TBSFs) are seen as critical in developing new technology and bringing it rapidly to the market.

Venture capital has devised distinctive ways through which entrepreneurs, innovators and venture capitalists work together in pursuit of their common interests. The argument in the article by Professor Gilson is that the specific techniques developed in the venture capital sector have enabled market participants, particularly passive investors and venture capitalists to overcome problems of uncertainty about future prospects of untried production processes, asymmetric information, and agency. These problems are particularly characteristic of small innovative firms, the classic high-risk high return undertakings that are best suited to venture capital.

This note expands on some points already in Professor Gilson's article and adds some observations based upon work at the OECD. The origin of OECD work is the perception by Member governments that levels of progress with respect to venture capital differ sharply among countries and that it is important for countries that are lagging behind to narrow the gap. For example, the venture capital sector in Europe is proportionally only one fourth or one fifth as large as in the United States. Thus far, work has encompassed a broad review of the state of venture capital in Member countries focussed on highlighting the most important issues. An initial report summarizing of the results of OECD work to date will be published in the forthcoming *Financial Market Trends*. Future work will aim at identifying policy actions that governments can take to stimulate the growth of venture capital in their own countries.

In Section I of the paper, Professor Gilson provides an overview of the venture capital sector in the US and in Section II he gives a thorough discussion of how the private sector has developed means to address agency and asymmetric information problems, including the staging of

investment, the exercise of monitoring and control by the venture capitalists, the structuring of compensation and the use of various exit mechanisms. The discussion emphasizes the methods used in venture capital whereby the entrepreneurs, the venture capitalists and the investors interact, using flexible contracts to align their interests. This section fully exposes the challenges of aligning the interests of all parties in the venture capital operation and the means used in the United States to achieve this aim.

Subsequently, the article sets the objective for the government to “engineer ” a market for venture capital by designing a legal framework for the establishment of certain kinds of financial intermediaries to engage in venture capital and by itself providing risk capital as an investor. The modalities by which the government enters investment partnerships with private investors should allow the venture capital process to go forth by dealing effectively with information asymmetry and agency problems. The final part of the article considers specific ways of forming government/private alliances and writing contracts that have been tried in Germany, Israel and Chile.

The approach of this note is to give a brief overview of the experience of OECD countries. In view of the wide differences observed among countries two questions become apparent: 1) Are there alternative paths to the successful development of venture capital? and 2) to what degree is the experience of the successful countries transferable to others?

There are a small number of OECD countries where great strides have already been made in building a venture capital sector. This can be seen in Figure 1, which compares venture capital as a share of GDP in OECD countries. (It should be pointed out that there is an ongoing problem of comparability concerning the data of OECD countries. In particular in Europe, venture capital is often not adequately distinguished from other forms of private equity.)

Countries with high venture capital/GDP ratios include Iceland, Canada, Korea and the Netherlands, as well as the United States. There are also a number of countries-- for example the United Kingdom-- where the venture capital sector has achieved significant size but still lags behind the most dynamic countries. At the other extreme, several countries (Austria and Japan for instance) stand out for the rather dormant state of their venture capital sectors.

One can make some additional observations about the range of country experience. Virtually all European countries have lower shares invested in early stage operations than the United States, Canada and Korea. Additionally, as Figure 2 shows, the United States has a very large share of venture capital investment in high technology sectors-- twice as high, in fact, as any other country. Most of this is due to the exceptionally high level of venture capital activity in the communications technology sector. In other sectors, IT and biotech for example, some countries have achieved proportions comparable to those in the United States. While the relative rankings of some countries change as a result of this comparison, once again a few countries stand out by their virtual absence of venture capital in high tech sectors.

Overall the picture of venture capital that emerges is one of a wide range of experience among countries. It is noteworthy that these differences persist despite efforts on the part of many governments over the past 10-20 years to spur growth of this sector. The wide variety of country experience enables us to draw some preliminary conclusions about what policies work best.

The assumption in this note is that because of the nature of venture capital, there are several places in which there may be “roadblocks” to the emergence of successful venture capital finance and that the government can be effective in removing any of these roadblocks.

The conceptual underpinning of this analysis is that venture capital is a transitional form of finance. It stands between completely informal finance and the public markets that are suitable for mature companies. For venture capital markets to operate well, there must be a constant flow of new companies, with appropriate characteristics, being formed at all times. From this flow, the venture capitalists select a small number of high risk, high potential companies that have the potential to realize value through exits, either through trade sales or IPOs. A general picture of this process is seen in Table 1, which shows the stages on the life of a new firm. In early stages, i.e. before formal venture capital is used, the company depends upon informal sources of finance. The main objective of policy at this stage should be to assure a generally high level of entrepreneurship, reflected in high levels of risk taking and firm foundation along with active markets in informal finance. Activity in this market segment assures a large flow of potential venture capital candidates. The second phase of formal venture capital is where it is essential to develop the necessary infrastructure for the venture capital sector. The existence of appropriate exit vehicles for established companies that have passed through the venture capital stage is also important for a thriving venture capital market.

From this conceptual framework, it follows that there are several places where obstacles may be found that require public action.

In Part III of Prof. Gilson’s paper the challenge of building or “engineering” a thriving venture capital sector is defined. The crux of the challenge is to find mechanisms through which 1) entrepreneurs, 2) intermediaries and 3) investors with demand for high-risk high return projects can be brought together. Moreover, a set of contractual arrangements must be devised that enable these parties to write contracts that are sufficiently flexible to permit them to react to changing circumstances, but that also align interests and allow firms to operate efficiently. This is a very useful formulation of the problem and the following sections will seek to shed some light on this task. In the following paragraphs, the questions of intermediaries, investors and entrepreneurs will be addressed in turn.

Concerning intermediaries, plainly a precondition for venture capital is the existence of legal and organizational structures that allow the venture capital process to proceed. The legal structures used to conduct venture capital business must be robust and flexible in order to address the problems of agency and asymmetric information discussed in section II of the article. The legal vehicle chosen should not be subjected to the full procedures established for public securities offerings, but should permit the general and limited partners to engage in active monitoring and to agree on compensation schemes. Finally, the structure should not expose the venture capitalists or the investors to excessive taxation. In the language of venture capital industry, the legal structure should be “tax transparent”, i.e. the same income should not be taxed more than once. Of course, the vehicle chosen must be in conformity with each country’s legal system.

In the United States, and the United Kingdom the limited partnership has proven to be a legal structure that brings together venture capitalists as general partners and investors (usually institutions) as limited partners. Other countries have devised different legal forms consistent

with their own legal systems and traditions. Unfortunately, some countries do not have any legal forms that are well adapted to the needs of the venture capital sector. Table 2 gives some idea of the range of legal structures that are found in European countries and indicates where a particular structure gives rise to a problem for investors.

The problem of finding appropriate structures becomes more complex when venture capital business is conducted internationally. In European countries, funds generally contain both investors and projects from more than one country. In such cases, the problems of conflicting forms is magnified. The investment vehicle may be treated differently by the tax authorities of various countries. Thus, foreign investors participating in the fund may be exposed to more taxes than those levied upon investors from the home country of the funds, particularly if the vehicle was selected to conform to domestic laws. Some countries have developed special tax advantaged vehicles to promote venture capital investment, but non-residents cannot enjoy the intended tax benefits. Many commentators argue that the lack of appropriate legal structures and the conflicting treatment of structures among European countries constitute impediments to the growth of venture capital. In some cases, the lack of appropriate structures means that all venture capital business has to be done through offshore vehicles.

The second necessary ingredient in venture capital consists of investors who commit their funds to the high risk/high return projects typically financed by venture capital. A noteworthy feature of the industry in the United States has been its success in tapping institutional savings. Venture capital has emerged as an important link between the entrepreneurs and the huge pool of institutional savings in the United States. In the early years of the venture capital industry, universities and charitable endowments were the biggest providers of funds. However, in 1979 the Labor Department authorized private pension funds to invest in venture capital, and pension funds became the major source of funding in the 1980s and 1990s. Now, pension funds (and to a lesser degree insurance companies) regularly allocate modest shares of their portfolios to “alternative asset classes,” including venture capital. A few other countries also rely heavily on the pension fund sector.

Figure 3 and Table 3 show that sources of funding for venture capital vary widely among OECD countries. However, in many OECD countries the absence of any class of suitable investors is an apparent obstacle to the emergence of strong venture capital sector. Overall, the argument is persuasive that the availability of institutional savings in appropriate form can be a serious roadblock to the expansion of venture capital. Most European countries rely on financial institutions such as banks and insurance companies as a source of finance. Such funds may have conflicts of interest between the objectives of the venture capital firm and its financial parent company, which may engage in venture capital business primarily to generate deal flow for investment banking opportunities or to identify acquisition target companies. Therefore, such firms may specialize in companies that are further advanced in the venture capital cycle and nearer to the stage of public offering. This may partly explain why European venture capital has tended to avoid early stage (i.e. seed and start-up) venture capital in particular.

Several OECD countries having reasonably large pools of institutional savings have had only low to moderate success in developing venture capital. For example, France and Germany have large amounts of institutional savings in the form of insurance, which tends to have relatively low shares of investment in equities of any kind.

Even some countries with well-developed funded pension schemes have had only limited success with venture capital. Many analysts attribute the shortfall to rigid pension fund regulation. Few countries with funded pension schemes have outright prohibitions on venture capital investment. Several countries have limits on all equity investments or in unlisted equity, but these limits were much higher than the extremely small amounts invested in venture capital.

Perhaps, the most intriguing case is the United Kingdom, where there are high institutional savings, including funded pensions, a rather liberal regulatory regime for institutions and a decade-long effort to promote the growth of the venture capital sector. In fact, British institutional investors have built a very large private equity industry, but investments are concentrated in buyouts and to a lesser degree in late stage venture capital. While investment in venture capital is somewhat higher than the European average, it is well below those of the dynamic countries (e.g. US, Canada or Korea.) As a result, in recent years, a governmental commission (the Myners Commission) was organized partly to investigate why British institutions invested relatively little in this sector.

One of the tentative explanations for this shortfall was the Minimum Funding Requirement (MFR) imposed on pension funds. This requirement may have an even more lasting impact on portfolio allocations outside the United Kingdom. Most OECD countries have funding rules in place for defined benefit (DB) plans. These rules can affect the asset allocation of pension funds by encouraging regular matching of pension assets and liabilities. Since DB liabilities in OECD countries are dominated by benefits paid to current retirees, which are fixed in value (or indexed to the price level), there is a bias in favor of investment in fixed income instruments or in listed equity. Since many insurance companies are subject to similar funding rules, this could be an explanation of why countries where insurance accounts for a large share of institutional savings also have not been active venture capital investors. Japan apparently has rules that effectively prevent pension funds from investing in venture capital. Ireland by contrast has considered instituting guidelines under which pension funds would be expected to invest in venture capital.

Looking forward, the trend in funded pensions appears to be toward defined contribution (DC) plans as opposed to the traditional DB. DC plans, which are under the control of the beneficiary, are less likely to be willing or able to invest in venture capital than DB plans.

One form of institutional savings that is largely absent from the venture capital sector is the collective investment (CIS) sector (i.e. mutual funds, unit trusts etc), the fastest growing component of institutional savings. The rules by which CIS operate, including internationally agreed standards for CIS supervision, are generally keyed to investment in publicly traded securities than to illiquid venture capital investments. The rules of open-ended CIS require diversification of portfolios, valuation based on market prices and the possibility for investors to redeem shares at rather frequent intervals. In the United States a few closed end funds achieved limited success in the later 1990s, but most have lost liquidity after 2000. A number of European countries have devised special tax-advantaged closed end collective investment instruments designed to encourage broad equity investment in innovative companies. In order to qualify for favorable tax treatment these funds are required to invest specific portions of their assets in the shares of unquoted companies. In some cases, partial exemption is made for shares listed on “growth exchanges.”

The corporate sector is a significant supplier of funds. Many non-financial companies have created venture capital subsidiaries that seek projects, usually in sectors related to the business of the parent company. In addition to acting as a source of income in itself, the subsidiary is seen as a means for the parent company to gain exposure to new deals in its field of competence, and to identify acquisition targets. Several high tech companies have used this as an expansion strategy. In Japan and Korea, the corporate sector is the largest source of funding for the venture capital sector, accounting for about half of all funds. However, this does not reveal very much about whether corporate venturing is an effective means to promote the growth of venture capital. In Korea the venture capital sector is very dynamic while in Japan it has failed to gain any traction.

In countries that have no domestic pools of savings available for venture capital investment, foreign venture capital firms undertake most investment. This is the case in most southern European countries and Central and East European transition economies. However, the venture capital industry in these countries is rather small.

When one examines the few countries that have actually developed advanced venture capital industries one tends to conclude that the US model with its reliance on institutional savings, especially pension funds, is likely to be the most readily transferable to other countries. The United Kingdom would appear to be another case in point but its concentration in buy-outs and relative lack of progress in early stage venture capital is rather troubling. On the other hand other successful countries have had somewhat different experience. In Canada, labor-sponsored funds supported by tax incentives for investments in new and high technology companies were a major source of funding for the venture capital market. In Korea, official funds and corporate venturing have been the largest providers,

A key recommendation in Prof. Gilson's paper is that government should attempt to foster the growth of the venture capital sector by becoming a provider of capital and should work in partnership with private investors. Further, the conditions whereby funds are provided should be structured so as to avoid the agency and control problems discussed in Parts I and II of the paper. Reflecting its different set of assumptions, this note would reformulate that recommendation somewhat. Specifically, if it is decided that the direct provision of finance by the authorities is an effective policy tool, then government participation should be structured so as to avoid the pitfalls discussed in the paper. However, in constructing an overall policy to develop risk capital, direct provision of capital should be measured against other possible support measures. Put somewhat differently, one can assume that governments have a notional sum budgeted for support of venture capital. The decision must be made as to how much of that sum should be allocated through direct investment versus other possible expenditures. For example, it may be more efficient to use a given budgeted sum of resources to provide tax incentives to encourage retail investors to place funds in venture capital investment funds or on the support of entrepreneurial research, in building incubators or business parks or in providing infrastructure support to informal investment (i.e. "business angel") networks.

Although it would not be prudent to make government affiliated funds the single element in engineering a venture capital market, many OECD countries, and some sub-national entities, have programs to provide equity finance to venture-backed firms. Government participation can come either directly in the form of an equity participation or government participation in a joint equity venture with a private party, a so-called "hybrid" fund. While some countries still have serious

problems in securing proper incentives, several countries appear increasingly designing their programs in line with the suggestions in Professor Gilson's paper. Selection of projects is generally left to the private innovators. The private investors must put some of their own capital at risk, but most of the "upside" of the investment belongs to the private investors. Private investors often have the option of acquiring the government's investment at a favorable rate. Other approaches are possible. Recently, Finland Australia and New Zealand opted for an official "fund of funds" that commits resources to a variety of private venture capital funds. Other countries where public or public affiliated funds are significant include Belgium, Canada, Korea, Sweden, the United Kingdom and the United States.

Returning to Table 3, it can be seen that in OECD countries the government is generally not a major supplier of funds, particularly in cases where the venture capital sector has gained some size. (The main exception is Korea where the public sector accounts for some 10 per cent of total funds.)

The venture capital industry has mixed views of government programs. Direct government funding is generally not favored because it drives returns down to levels that venture capitalist cannot match. Programs in which government and private funds capital are used jointly are preferred.

A final point that deserves some elaboration is the relationship between the venture capital sector and entrepreneurship. The paper sees entrepreneurship as the result of the ability of the venture capital sector to provide financing: if venture capital intermediaries with proper incentives are formed and if capital is raised, the entrepreneurs will spontaneously appear to take advantage of the funding. (If you build it, he will come.) By contrast most work in the OECD tends to see entrepreneurship as a crucial independent factor that often determines whether innovation is ever undertaken and thus has a decisive impact on venture capital.

Figure 4 shows variations in two measures of entrepreneurial activity among OECD countries, i.e. the percentage of adults involved in creating new business and the percentage of adults owning or managing new businesses. The experience spans a very wide range of countries, with the same three countries (the US, Canada, and Korea) near the top of the list. At the other extreme lies Japan. The proportion of persons engaged in new business in the United States and Korea is roughly 10 times higher than in Japan. While the position of countries at the extremes is roughly the same as in other comparative tables, there are significant changes in the relative positions of some countries. Thus a few countries such as Australia, New Zealand and Norway, which exhibit strong entrepreneurial behavior, do not have advanced venture capital sectors. On the other hand, some countries such as France, Belgium, Sweden and Finland, appear to be deficient regarding overall entrepreneurship, but have venture capital industries that are proportionally as large as the European average.

To synthesize these findings, one can tentatively conclude that a strong underlying entrepreneurial culture is a strong stimulant to venture capital. At the same time, an entrepreneurial environment does not in itself guarantee a vibrant venture capital sector. Entrepreneurship must be present in sectors that are suitable for venture capital finance.

Many of the high growth companies are found in technology related fields. If research aimed at practical application is not undertaken and the proper links between the research community and

the business community are not forged, there will not be a flow of suitable venture capital deals, even if the country exhibits many other entrepreneurial traits. Conversely, well-focused policies of support for research and for infrastructure may result in a respectable level of venture capital activity even in the absence of a broader entrepreneurial culture. However, to obtain the best results it is advisable both to develop robust incentives for entrepreneurship, close linkages between research and commerce and an appropriate framework for venture capital.

The OECD has been examining the policy framework required to encourage entrepreneurship for several years. In particular, the Entrepreneurship Study of 1998 summarised a considerable amount of earlier work and produced recommendations for policy measures through which governments can foster entrepreneurial activity.¹ Moreover, during 1999-2001 the New Economy Study sought to determine the degree to which the differing rates of productivity advance in Member countries could be explained by relative progress in high-technology sectors. The latter study shared certain concerns with earlier analyses of entrepreneurship but its objective was to identify policies that could assist in the development of technology based companies. The final Report concluded that progress in applying technology in concrete economic problems, particularly by TBSFs, was indeed a significant determinant of performance and made recommendations generally in line with those of the earlier OECD reports.²

Work at the OECD tends to conclude that entrepreneurial behavior arises in reaction to an array of social forces, market incentives and government policies. The framework in which entrepreneurs operate includes the regulatory system, the educational and training system, corporate and bankruptcy law, the structure of financial markets, taxation policy and the system of social protection. Other things being equal the general business environment that rewards risk taking and not place obstacle in the way of enterprise formation should result in a general environment in which many new firms are founded and where large numbers of people are employed in smaller and newer enterprises. A fair balance has to be struck between social protection and the encouragement of risk taking.

High levels of entrepreneurship go hand in hand with high levels of informal investment. In this connection, one special category of informal investors are the “business angels”, former entrepreneurs who invest their own funds in new companies and also act as “mentors” to the companies in which they invest. This category of investor is important in the pre-venture stages. In brief high rates of company formation and risk taking, particularly in high growth sectors, is likely to create a flow of suitable deals for the venture capital industry. Overall, informal finance may be another area where public policy can assist in “engineering” the necessary environment for venture capital.

There are a number of ways in which the actions of government can act as barriers to entrepreneurship. Thus in Figure 5 an attempt is made to measure government-imposed barriers to entrepreneurial activity, in the form of barriers to competition, administrative opacity and burdens on start-ups. Once again the table reveals a wide dispersion of practices among OECD countries. In one noteworthy development, Italy appears to have one of the most burdensome regulatory regimes, but nonetheless has a high rate of entrepreneurial activity.

1 . “Fostering Entrepreneurship” OECD Jobs Study (1998.)

² “The New Economy: Beyond the Hype.” Final report on the OECD Growth Project 2001.

While obstacles to entrepreneurship may arise from deeply rooted cultural values or social choices, and may be only partly amenable to policy changes, there probably is a tendency to over-emphasize the role of culture in inhibiting risk taking. Thus, the culture of Korea is often decried as “Confucian” in where the most revered individuals are scholar-civil servants and respect for hierarchy is particularly strong. Nevertheless, Korea has high levels of entrepreneurship by any measure and one of the most vibrant venture capital markets in the world. When one considers the full range of policies that governments can pursue, it is clear that governmental policy can construct environments that vary widely with respect to the incentives faced by potential entrepreneurs. Thus, it is important for governments to review their overall market infrastructure to determine whether policy unduly discourages risk taking.

A closing observation on the prospects for the venture capital industry concerns the last stage of the venture capital cycle, namely exit via trade sales or IPOs. Throughout the past two decades, many countries have seen the lack of exit vehicles, especially “growth stock markets” as a major obstacle to the emergence of domestic venture capital sectors. The role model for such markets was NASDAQ. In the 1980s, many countries tried to emulate NASDAQ by launching “second tier markets”, not only for venture capital exits but more generally to enlarge access of SMEs to equity finance. Most of these markets fell sharply in the post-1987 correction and did not recover in the post-1990 rebound.

After 1995, a second generation of “growth stock exchanges,” more specifically geared to fast growing companies appeared. Disclosure requirements were less rigorous than on the main boards. Closely held ownership structures were tolerated, and some dealers agreed to act as sponsors or market makers. The post-1995 exchanges included the Alternative Investment Market (AIM) in the United Kingdom, the Neuer Markt in Germany and the Nouveau Marché in France as well as markets in Spain, Italy and Switzerland. EASDAQ (later acquired by NASDAQ) was established in Belgium, but conceived as a pan-European exchange.

Trends are diverse in Asia. KOSDAQ the Korean growth exchange expanded rapidly through 2000, while the Growth Enterprise Market (GEM) of Hong Kong has achieved some credibility as a growth exchange. On the other hand, no growth market in Japan has ever shown vitality.

These exchanges were at the center of the IT bubble that burst in early 2000. Valuations swelled to the loftiest heights in early 2000, followed by a puncturing of the bubble leaving many stocks illiquid and the reputation of the exchanges tarnished. The volume of IPOs has shrunk considerably. Assuming that venture capital investment resumes, some revival seems probable in growth exchanges, but the exact pattern of growth is uncertain. By all odds, NASDAQ should have the capability to survive. In Europe, however, it is uncertain whether the pattern of the last expansion will be repeated, with each country building a national growth exchange and more than 20 growth exchanges established in Europe. Some consolidation and realignment seems inevitable. In brief, there is great uncertainty about how these markets will evolve once the current phase of sharp contraction is completed.

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