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Working Party on Small and Medium-Sized Enterprises and Entrepreneurship

FINANCING INNOVATIVE SMEs IN A GLOBAL ECONOMY

THE OECD BOLOGNA PROCESS

2nd OECD Ministerial Conference on SMEs on "Promoting Entrepreneurship and Innovative SMEs in a Global Economy -- Towards a more Responsible and Inclusive Globalisation", ISTANBUL, Turkey, 3-5 June 2004

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FOREWORD

At the first OECD Conference of Ministers responsible for SMEs, hosted by the Italian government in Bologna, Italy, in June 2000, Ministers from nearly 50 member and non-member economies adopted the "Bologna Charter for SME Policies". They envisaged the Bologna Conference as the start of a policy dialogue among OECD Member countries and non-Member economies and that it would be followed up by a continuous monitoring of progress with the implementation of the Bologna Charter. This dialogue and monitoring have become known as the "OECD Bologna Process". The second OECD Conference of Ministers Responsible for SMEs, hosted by the Turkish Ministry for Industry and Trade, envisaged by Ministers at Bologna, provides an occasion to assess the impact on SMEs of new developments relating to globalisation.

This report is one of ten background reports prepared for the Istanbul Ministerial Conference, the theme of each of the ten reports being linked to a specific Workshop of the Ministerial Conference. Several earlier versions of the report were reviewed by the Working Party on SMEs and Entrepreneurship whose comments have been incorporated into the final version. Non member economies participating in the OECD Bologna Process have also had an opportunity to provide comments. This final report also sets out some policy messages and recommendations that have emerged from the preparatory work undertaken in the OECD Working Party for SMEs and Entrepreneurship. The wide variation in stages of economic development, institutional arrangements and political context across the economies participating in the Bologna Process, now more than 80, means that not all parts of specific policies and programmes are appropriate for all participants. The messages and recommendations outlined below provide material from which governments may choose to draw in promoting innovative SMEs in the global economy. In broad terms, these policy messages and recommendations elaborate on the themes developed in the Bologna Charter. Ministers will consider these and other recommendations in their deliberations at the Istanbul Conference.

This report was prepared by the OECD Secretariat (Frank Lee when he was a member of the Industry Division, in the Directorate for Science, Technology and Industry) in cooperation with external consultant, Dr. Luis Correia, OXERA, Oxford, United Kingdom. The preparation of the study was assisted by financial contributions from the governments of the following countries: Canada, Finland, Spain and the United States.

This report is issued on the responsibility of the Secretary-General of the OECD. Views expressed are those of the authors and do not necessarily reflect those of the Organisation or its member governments.

This and other background documents prepared for the 2nd OECD Conference of Ministers Responsible for SMEs may be downloaded free of charge from the following Web sites:

SME Unit website*:* http://www.oecd.org/sti/smes
Conference website: http://www.oecd-istanbul.sme2004.org

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EXECUTIVE SUMMARY

In June 2000, Ministers in the Bologna Charter stressed the importance of access to financing as one essential ingredient in facilitating the innovation process. In addition, OECD Ministers, at the 2001 meeting of the OECD Council at Ministerial level, stated "…We will work to ensure an environment favourable to business and risk-taking, and particularly for new firms and SMEs as set out in the Bologna Charter. We are committed to improving access to high-risk finance…"(OECD, 2001*c*). This paper reviews the issues involved and makes a number of policy recommendations in light of the study carried out.

Uncertainty and informational asymmetries that characterise SMEs are amplified for innovative SMEs making it more difficult for them to access financing. First, the returns to innovative activities are often skewed and highly uncertain. Second, entrepreneurs may possess more information about the nature and characteristics of their products and processes than potential financiers. Third, innovative activities are usually intangible thereby making the assessment of their monetary values difficult before they become commercially successful. Thus, financing innovative SMEs is very risky and uncertain, making it difficult to come up with a mutually agreeable financing contract. This has led to a proliferation of government programmes to close perceived financing gaps faced by innovative SMEs.

In order to be able to suggest practical policy recommendations, it is important to discuss what are the issues at the heart of difficulties in accessing capital by innovative SMEs. The two traditional distinctions that are drawn between the supply of finance on the one hand and the demand for finance from entrepreneurs on the other, and between debt and equity sources are both unhelpful and inappropriate. The question that is generally posed by investigators of whether there is a shortage of sources of finance or of entrepreneurs seeking finance may not be a very meaningful question. Furthermore, the distinction that is drawn between debt and equity sources of capital is blurred in much finance that is provided to SMEs, particularly innovative ones.

The way in which the issue about early stage finance is posed in much of the literature is that on the one side there is an entrepreneur seeking finance and on the other there is an investor seeking to employ capital profitably. The entrepreneur has ideas and human skills, and the investor has money. Will the investor invest and on what terms? The reason why this is not a very helpful way of thinking about the issue is that it presumes that the only decision that the investor takes is whether to invest and on what terms. But, as we know from studies of private equity, that is not an accurate description of the investment process. The investor does not simply sit back and wait for returns to appear, there is active involvement in the development of the firm.

Without that active involvement, investors perceive high risks and low returns from investment and entrepreneurs find themselves unable to raise capital. Entrepreneurs are therefore discouraged from applying for finance and costs of finance appear high. Therefore entrepreneurs and finance are apparently both in short supply.

Key policy recommendations

- **Concentrate policies for promoting availability of risk capital to innovative SMEs mainly on early stages of the financing of the firm.** Public sector funds could be used to leverage private sector financing in order to reduce the financing gap. Where countries believe that such support is warranted, they could draw on the experience of several countries with small business investment companies.
- **Recognise the need for proximity between suppliers of funds and those who require finance, particularly for small-scale investment.** Regional and local equity initiatives (*e.g.* regional funds) are therefore appropriate for such types of investment. Such equity programmes should be created in parallel to the development and support of regional and local business angel networks as well as business incubators.
- **Increase the managerial and technical expertise of intermediaries whose role is to evaluate and monitor companies.** This requires the development of a class of intermediaries who focus on reducing the asymmetry of information between entrepreneurs and providers of finance through *a)* assessing the quality of applicants; *(b)* undertaking due diligence; *(c)* exercising corporate governance and monitoring; and *d)* assisting SMEs as they use the funds.
- **Facilitate international transfer of institutional infrastructure and expertise.** Consideration should be given to ways in which countries with less well developed capital markets can draw on the expertise of countries with well developed stock markets. Access to liquid international stock markets and an investment community that has expertise in venture capital-backed IPOs avoids the need to create multiple new institutions.
- **Subject new regulations which could adversely affect the provision of risk finance to cost-benefit tests of their likely effect before implementation and monitor their impact subsequently.** Furthermore, current regulations that create restrictions on institutional investors to invest in risk capital or barriers to flows of foreign venture capital funds should be reviewed with a view to reducing, easing or eliminating them.
- **Encourage, in conjunction with business and accounting bodies, small business to recognize, measure, and report intangible assets** (ICT skills, organisation, software and networks, intellectual property rights) so that new and small firm assets can be managed more effectively and more reliably valued by capital markets and investors.

Furthermore, one of the ways in which investors become actively involved is through financing instruments that allow them to exercise considerable control. Not only do they take seats on the boards of firms but finance is staged and made conditional on performance in previous periods. Mixed equity and debt contracts, such as preferred equity and convertible debt, are used that allow investors to take control in the event of corporate performance being poor. The financing of early stage investments therefore has features of both debt and equity. It is therefore misleading to see the problem as being a demand for or supply of finance problem or an equity as against a debt one. To the extent that there is a problem it is one of fusing entrepreneurship and finance.

This has important policy implications. Firstly, it means that throwing capital at innovative SMEs is unlikely to be successful. There will be a high element of waste, returns will appear low and entrepreneurs will continue to complain that they cannot raise finance. Secondly, the features that are commonly associated with well- developed financial markets, namely efficient stock markets and banking systems, may not be adequate. Thirdly, the traditional tools of government policy, such as taxation, subsidies, regulation and the creation of government institutions are unlikely to be appropriate. Finally, what is critical is the availability of entrepreneurial, technical, managerial expertise to the providers of finance.

Financing Innovative SMEs in a Global Economy

I. INNOVATIVE SMES, LIFECYCLES AND FINANCING GROWTH

Importance of Innovative SMEs in a Global Economy

Innovation is recognised as an essential component of the economic growth process, where it can be broadly defined as the development, deployment and economic utilisation of new products, processes and services (OECD, 2001*b*). As world economies become more integrated and interdependent, the ability of entrepreneurs and firms to seize upon global business opportunities by commercialising new products and processes faster than their competitors is critical in raising the economic wealth of a nation.

SMEs are a very heterogeneous group which includes a wide variation of firms such as grocery stores, restaurants, small machine shops and computer software firms. A subset of SMEs is dynamic, innovative, and growth-oriented. On the basis of firms having introduced at least one new or improved product or process on the market, about 30-60% of SMEs in the manufacturing sector in the OECD can be characterised as innovative (**Figure 1**). In some OECD countries such as in Belgium, Ireland, Italy, Portugal and the United Kingdom, small manufacturing firms are almost as innovative as large firms. Similarly in services, small firms in some OECD countries, for example in Portugal, Switzerland and the United Kingdom, are equally innovative as large firms (OECD, 2002*c*).

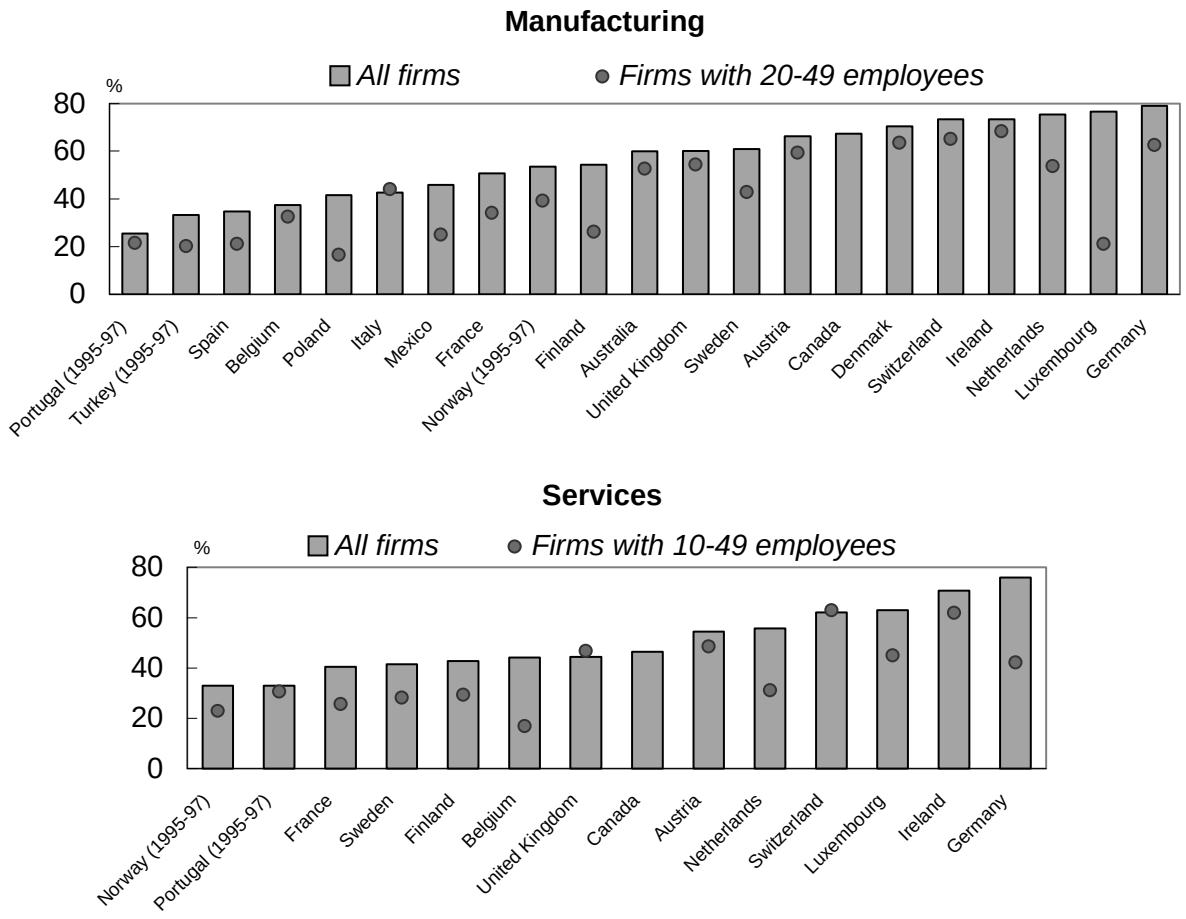
Additionally, SMEs also conduct a growing share of R&D, albeit still lagging behind large firms in most OECD countries (**Figure 2**). They account for the bulk of business R&D in Iceland, Portugal, Poland and Norway while their share is about 20% in the United States and the European Union. They also act as an interface between university research and industrial innovation. New technology-based firms (NTBFs), most of which are innovative SMEs, play a crucial role in radical innovation and the commercialisation of R&D done in research laboratories.

SMEs, however, are reported to face a number of impediments to their growth and survival including limited access to financing. In fact, access to financing has been identified in many business surveys as one of the most significant obstacles to the survival and growth of SMEs including innovative ones (EC, 2002*a*). Moreover, limited market power, the lack of management skills, high share of intangible assets, the absence of adequate accounting track records and insufficient assets, all tend to increase the risk profile of SMEs. Consequently, traditional commercial banks and investors have been reluctant to provide financing services to SMEs. In contrast, larger enterprises with better business plans, more reliable financial information and larger assets have easier time to obtain finance through traditional means.

Uncertainty and informational asymmetries that characterise SMEs are amplified for innovative SMEs making it more difficult for them to access finance through traditional means. First, the returns to innovative activities are often skewed and highly uncertain. Innovation may involve the continuous development of new products and use of new processes in untested markets. It therefore becomes difficult for financial institutions and investors to assess risk characteristics and default probabilities. Second, entrepreneurs may possess more information about the nature and characteristics of their products and processes than potential financiers. The likely existence of substantial informational asymmetries between innovative SMEs and investors make it difficult to come up with a mutually agreeable financing contract. Third, innovative activities are usually intangible thereby making the assessment of their monetary values difficult before they become commercially successful. Moreover, innovation has little salvage value in the

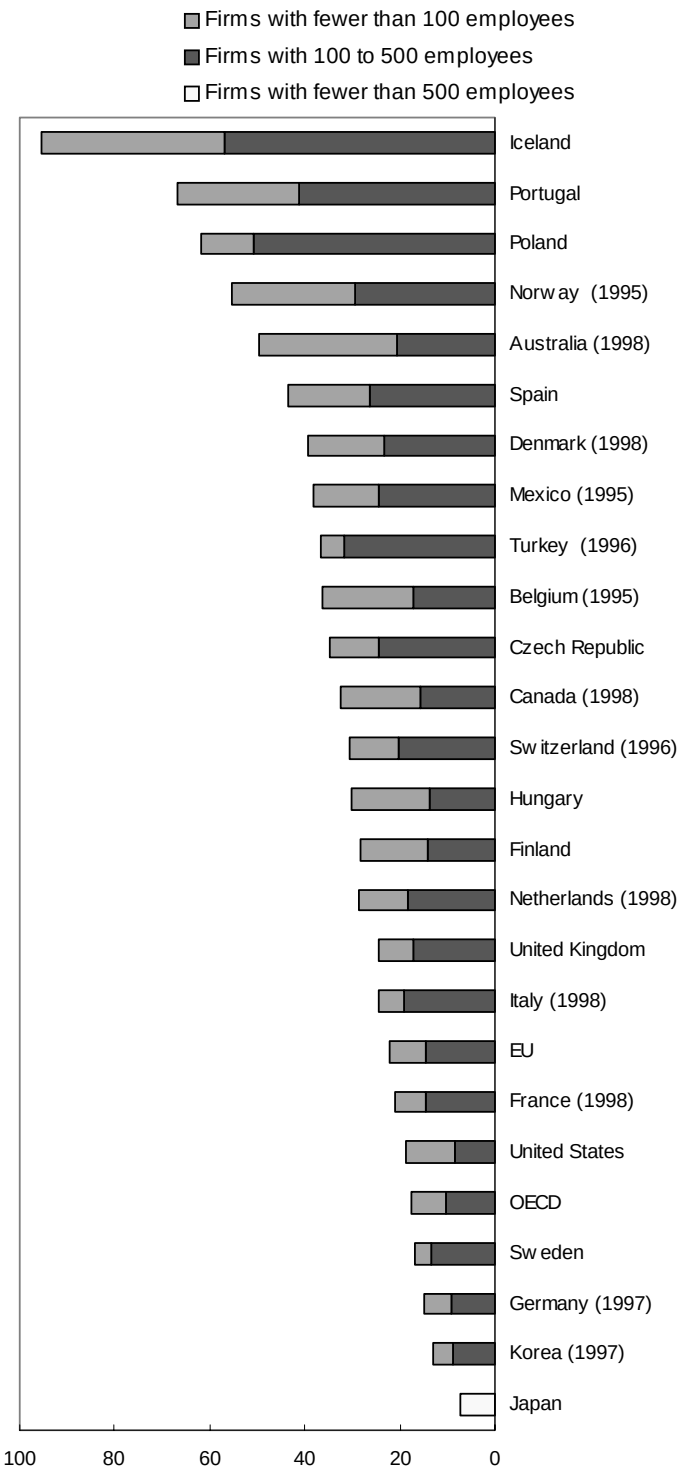
event of a commercial failure. Therefore, innovation activity has limited collateral value in obtaining a loan or equity. In addition, the innovation cycle is a complex process often involving a non-linear path. It often begins with an idea of a product. It then goes through prototype development and testing. Initial production with further refinements along with a market testing is followed by final product sales. The financing of this cycle needs a series of capital injections, and failure to finance adequately and part of the cycle may cause the firm to fail. This in itself also tends to increase the risks to any single investor (Bank of England, 2001*a*). In a nutshell, financing innovative SMEs are risky and uncertain. Therefore, innovative SMEs appear to suffer from imperfections/inefficiencies in their use of, and access to, various sources of finance. This has led to a proliferation of government programmes to close perceived financing gaps faced by innovative SMEs.

Figure 1. Share of firms introducing new technologically improved products or processes on the market, 1994-1996



Source: Eurostat and OECD (2001a).

Figure 2. Funding of business R&D by firm size, 1999



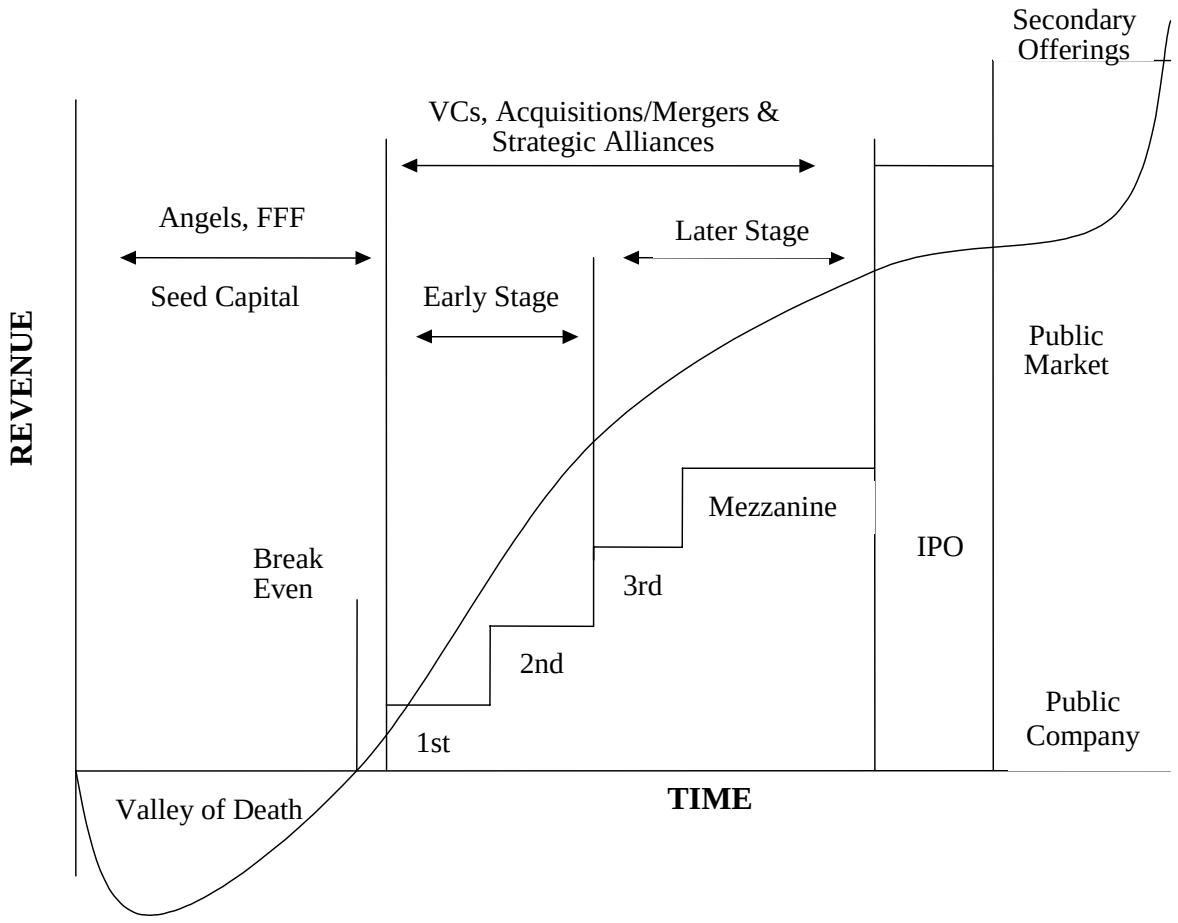
Source: OECD (2002a).

Financing Challenges for Innovative SMEs

Financing life cycle of a firm

As alluded to earlier, innovative SMEs find it difficult to obtain access to various sources of financing. However, each growth phase has different financing requirements (**Figure 3**). These requirements can be met by various sources. For innovative start-ups, the personal savings of entrepreneurs, family and friends are often the most important source of finance. These firms tend to be highly risky with intangible assets and the prospect of years of negative earnings. These features make it extremely difficult to secure a loan from banks. Recognising a higher risk associated with financing innovative start-ups, some countries have government guarantee schemes to fill possible financing gaps. In the second phase of survival, as personal funds become depleted, an external source becomes more important. At this stage, investment is still highly risky with high failure rates, requiring potentially high rates of return. Generally speaking, enterprises at this juncture are not large enough to attract the attention of venture capitalists. Business angels who are generally wealthy individuals fill the gap between personal funds and institutional venture capital funds (VCFs). In addition to providing financing, business angels contribute their expertise, knowledge and contacts both formally and informally to the business they invest in (Thompson and Choi, 2002).

Figure 3. Financing lifecycle



Source: Cardullo (1999).

After the firm has passed through the early stage, it requires a further injection of capital to fund the growth of its manufacturing and distribution capacity as well as to fund further R&D. However, its reliance on intangible assets with uncertain cash flows still make it less than an ideal candidates for debt financing. In addition, the difficulty of obtaining loans is compounded by the limited number of in-house innovation/technology experts in traditional banks, who could properly assess the future growth prospects of innovative projects. Moreover, a low profitability and short track record make it unsuitable to raise equity through public listing. On the other side of the coin, young expanding SMEs faced with uncertain earning prospects may prefer to avoid debt financing which require regular payments to principal and interests for reasons of flexibility.

Venture capitalists alleviate uncertainty and informational asymmetries associated with young firms by actively scrutinising firms intensively before providing capital and monitoring them afterwards. Examples include spreading out financing in stages over time, forming alliances or syndicates with other venture capitalists, becoming a member of the board of directors, and arranging compensation schemes including stock options (Gompers and Lerner, 2001). Generally speaking, venture capitalists raise capital from a number of investors and in turn invest into a fund most likely structured as a "limited partnership". This limits the liability of investors by the amount of the investment (Christofidis and Debande, 2001). For instance, Japan implemented the Limited Partnership Act in 1998 to encourage investment by partnership by limiting the liability of investment (JSBRI, 2001). It should, however, be noted that the management style of venture capital differs across countries. For instance, German and Japanese venture capitalists have not traditionally held board representation and have not engaged in day-to-day management of a firm they invested in (Jeng and Wells, 2000).

The primary objective of venture capitalists is to maximise rates of return on their investments. A viable exit mechanism where venture capitalists can turn illiquid stakes in private firms into realised return is extremely important for the development of the venture capital industry. Essentially, there are two common exit mechanisms available: an initial public offering (IPO) where the young company issues shares to the public; and a trade sale where the young company is sold to a larger one. Whatever the exit mechanism, a successful exit mechanism is critical to the existence of a vibrant venture capital market. Exit serves two key functions. First, financial and non-financial services provided to young companies lose their efficiency as companies mature. Thus, recycling venture capitalists' financial and non-financial assets through an exit and reinvestment is mutually beneficial to capital providers and investee companies. Second, the exit price serves as a monitoring devise for capital providers to determine the ability of venture capitalists. That is, the exit and reinvestment cycle allows capital providers to weed out less successful venture capital managers whose industry-specific expertise may not match the needs of young firms (Black and Gilson, 1998).

IPOs also enable firms to obtain finance more cheaply from banks. A reduction in the cost of bank credit may partly be related to improved financial information associated with stock exchange listing, or from the stronger bargaining position of the company vis-à-vis banks or the greater availability of tangible business assets from receivables and inventories (Pagano *et al.*, 1998). In any case, as firms become larger, they increasingly rely on institutional investors and banks as their primary source of finance. The financing of Amazon.com illustrates the financing lifecycle of an innovative firm (**Box 1**).

Box 1. Financing of Amazon.com (1994-99)

Time line	Price/share	Sources of funds
1994: July to Nov.	$0.001	Founder*:* Jeff Bezos starts with $10 000, borrows $44 000.
1995: Feb to July	$0.17	Family: Founder's father and mother invest $245 000.
1995: Aug to Dec.	$0.13-0.33	Business Angels: 2 angels invest $54 408.
1995/6: Dec to May	$0.33	Business Angels: 20 angels invest $937 000.
1996: May	$0.33	Family: Founder's siblings invest $20 000.
1996: June	$2.34	Venture capitalists: 2 venture capital funds invest $8 million.
1997: May	$18.00	IPO: 3 million shares issued raising $49.1 million.
1997/8: Dec to May	$52.11	Bond issue: $326 million bond issue.

Source: Smith and Smith (2000).

Financial structure of large firms versus SMEs

The institutional factors, financial practices and overall economic systems of the country in which the enterprise operates are important determinants of the financial structure of the enterprise. Nonetheless, there are several principal financial characteristics associated with small enterprises. First, small enterprises retain a larger share of earnings than large enterprises (Keasey and McGuinness, 1990). Second, small enterprises generally have easier access to private equity and debt markets than public markets. Moreover, the principal source of external finance accessed by small enterprises remains short-term loans and overdraft loans (**Table 1**). Equity financing is not employed extensively by small enterprises (Hughes and Storey, 1994; Hughes, 1997). These are consistent with the Pecking Order Hypothesis of financing sources in funding. That is, entrepreneurs generally prefer to fund projects with an order that minimises external control and ownership dilution by relying first on internal resources and then debt, with outside equity is being the last resort (Myers and Majluf, 1984). This view suggests that the financial structure of SMEs not only reflect financial market imperfections, but may also reflect the financial preferences of entrepreneurs (Baldwin *et al*., 2002; Hughes, 1997).

Financing structure of traditional SMEs versus innovative SMEs

At the seed stage, innovative SMEs rely on internal funds like other SMEs with negative cash flows. As innovative SMEs launch and develop new and/or improved products/services to grow and survive, their financial requirements often exceed internal funds, requiring them to seek external sources. However, uncertainty and asymmetric information associated with innovative SMEs suggest that they are generally unsuitable for debt financing. At the same time, innovative SMEs may prefer to avoid financial inflexibility that comes with servicing loans (regular payments on principal and interest) at the time of business expansion. Their access to public equity markets is also usually limited because of significant fixed costs associated with raising public equity, including underwriting, registration and advisory fees. In addition to these initial expenses, there are regular yearly expenses related to auditing, certification, and

dissemination of accounting information as well as stock exchange fees making uneconomical for SMEs to raise small amounts of public equity capital. In this case, the ability of entrepreneurs to secure equity financing from private investors is critical to the growth and survival of innovative SMEs. At the same time, private investors are attracted to innovative SMEs for their high potential for growth and profits. Asymmetric information that lies at the root of the problem for debt financing is reduced for private equity financing when private equity investors are actively engaged in the governance of the firm. This apparent reversal of the Pecking Order Hypothesis thus reflects risky and uncertain features of innovative SMEs. As innovative SMEs mature, their financing needs become more similar to other SMEs and debt financing becomes a more important source of external finance.

Table 1. External source of funding for SMEs in European Union countries (%)[1], 2001

	DEBT FINANCING				EQUITY	SUBSIDIES
	Overdrafts	**Bank loans**	**Leasing**	**Factoring**	**External investors**	
Belgium	37	*56*	25	4	12	14
Denmark	73	24	25	7	13	7
Germany	47	66	43	2	5	7
Greece	23	68	15	8	10	12
Spain	8	58	48	15	15	10
France	36	63	47	32	7	11
Ireland	70	39	48	14	19	10
Italy	78	17	41	17	7	10
Luxembourg	22	*44*	33	11	15	*15*
Netherlands	17	50	31	3	11	9
Austria	42	65	39	6	1	8
Portugal	16	48	47	10	7	6
Finland	46	64	27	14	15	11
Sweden	70	37	29	3	10	6
United-Kingdom	59	34	42	7	11	10
Total EU	**50**	**46**	**39**	**11**	**9**	**9**

Note: 1. The percentage of SMEs using the particular source of funding. SMEs in this survey are defined as companies with more than 10 or less than 250 employees.
Source: EC (2001a).

Financing Gaps for Innovative SMEs

Definition of a financing gap

The concept of a financing gap generally refers to a shortage in the supply of capital to meet the demand. This concept, however, does not distinguish between actual gaps and perceptions of gaps. Responses based on business surveys indicate that innovative SMEs face financial constraints. The observation that some firms cannot obtain capital is not itself evidence of a gap. In a competitive market, some firms will be, and should be denied financing if their risk profile far exceeds the willingness of investors to supply funds at a given rate. Specifically, a financing gap is said to exist if firms that merit financing cannot obtain it in financial markets due to the existence of market imperfections (Industry Canada, 2001*b*).

Financing gaps can reflect either demand-side or supply-side constraints or both. The supply side constraints predominate if appropriate sources of finance are not available on terms and conditions suitable for innovative SMEs (EC, 2001*a*). The demand side constraints exist if entrepreneurs do not make use of existing financing opportunities, because of a shortage of good projects or lack of persuasive business plans. There is no conclusive evidence as to whether supply side or demand side predominates in the financing of innovative SMEs (Bank of England, 2001*a*). Moreover, the type of financing available to innovative SMEs in a country is also influenced by economic growth, progress with reform of the financial sector, access to international capital markets, monetary and fiscal policies (Pissarides, 1999). Nonetheless, there appears to be a consensus that equity financing is more appropriate than debt financing for innovative SMEs at an early phase of their development (OECD, 2003*d*).

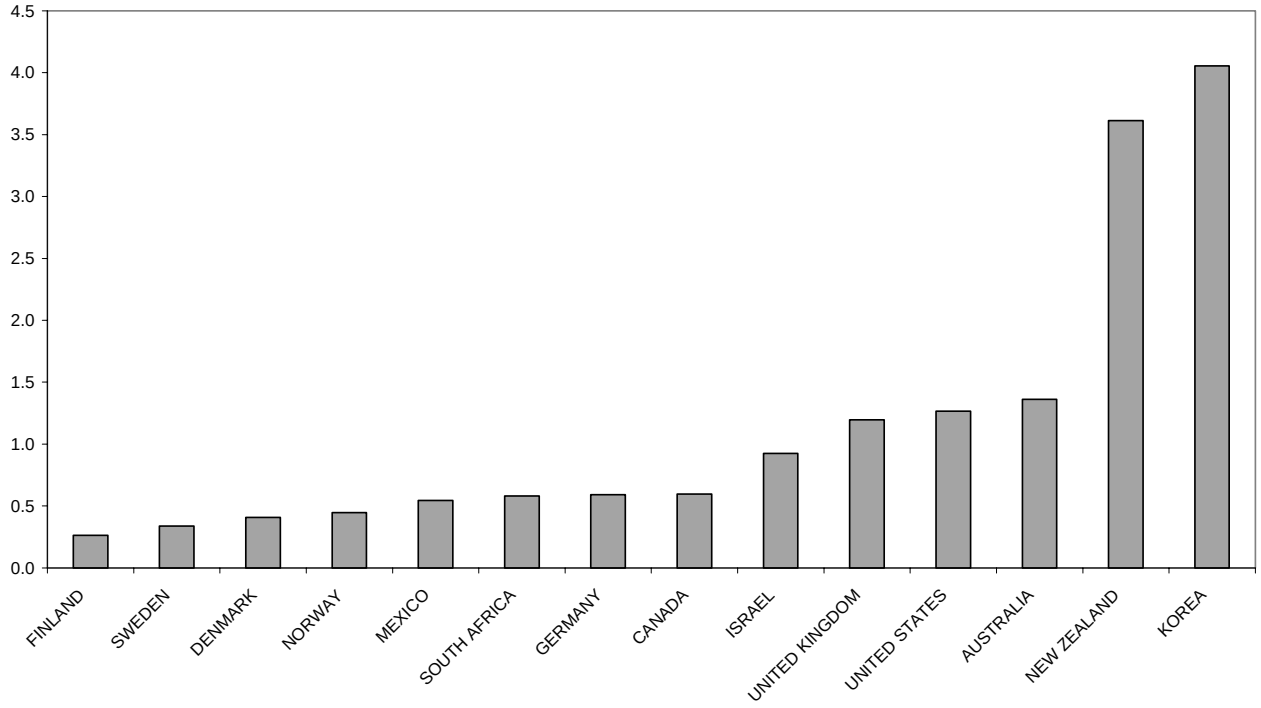
Access to seed financing

Innovative start-ups and micro-enterprises are more likely to face tight external financing constraints as information asymmetries tend to be more significant. Consequently, they rely more heavily on insider finance and start-up funds provided by relatives, friends and private investors (Figure 4). Once a firm's growth potential is reflected by cash flows, external financing sources including bank loans and venture capital become available.

Japan has a framework for issuing bonds to family and friends to mitigate financing constraints faced by micro-enterprises and start-ups. The issuance of privately-placed bonds for a small number of investors such as friends, acquaintances and relatives does not require the completion of procedures such as the submission of security registration statements. This simplified procedure makes it easier for micro-enterprises and start-ups to raise funds from family members and friends. Recognising their potential in easing financial constraints faced by start-ups and micro-enterprises, some local governments in Japan are beginning to provide support for enterprises issuing privately-placed bonds for a small number of investors. The Bunkyo ward of Tokyo, for example, will launch an interest subsidy program for privately-placed bonds for a small number of investors issued by SMEs in fiscal 2003 (JSBRI, 2002).

Another innovative method to encourage commercial banks to provide loans to micro-enterprises can be found in Chile. The Chilean Social Investment Fund (CSIF), created in 1993, uses a market-based subsidy to induce banks to provide microfinance. Two auctions are held in each year where commercial banks are asked to bid on a per loan subsidy. The winning bidders are those that offer the largest number of loans for the least amount of subsidy (Hardy *et al*., 2002).

Figure 4. Informal investment as a proportion of GDP, 2001



Source: Reynolds et al. (2001); IMF (2002).

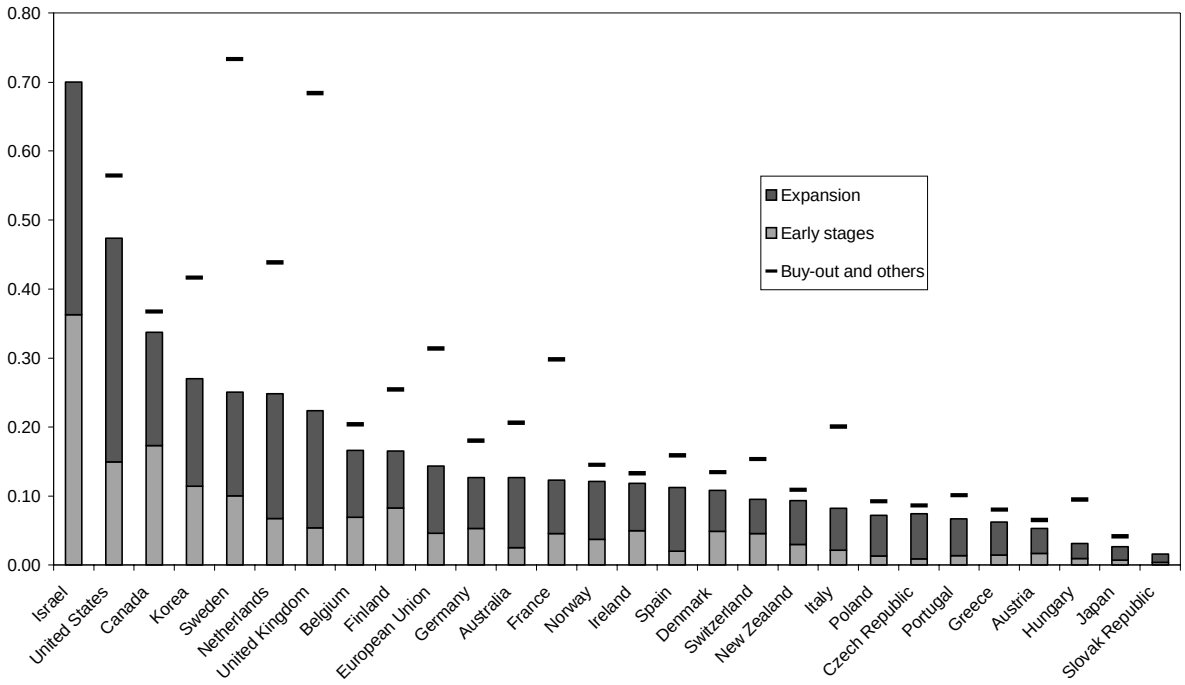
Access to equity capital

After the firm has passed through the early stage, it becomes a potential candidate for investments by venture capitalists. Venture capitalists minimise informational gaps by employing the following mechanisms. First, venture capitalists carefully examine and evaluate submitted business plans for their potential commercial success. They evaluate the promise of the firm's technology as well as consider the experience and flexibility of management and potential market size. They often demand preferred stock with numerous restrictive covenants and representation on the board of directors as a condition for their investments. Moreover, investments are made in stages to closely monitor potential profitability of funded projects over time. In addition, venture capitalists maintain close contacts with managers to continuously scrutinise every aspect of the firm over the investment period. Despite a number of cautionary steps taken by venture capitalists, the most likely outcome of a venture capital backed firm is a failure, with only the best surviving, reflecting high risk, high return activities of small innovative firms (Lerner, 2002).

Nonetheless, venture capital provides an important link between innovation and finance, providing capital market access to small innovative firms. Venture capital was estimated to accounted for about 8 percent of US industrial innovations and a dollar of venture capital was about three times as likely to lead to a patent than was a dollar of R&D (Kortum and Lerner, 2000). Despite its importance, the size of venture capital market varies considerably across countries (**Figure 5**). Note that the period in the figure covers the "dot-com" boom period, and investments in VC funds have declined substantially after the "dot-com" crash particularly in North America.

The proportion of venture capital investments targeted too early and expansion stages vary considerably across countries. For example, the United States and Canada have been successful in channelling investments to early and expansion stages. On the other hand, in country such as Italy, Sweden and the United Kingdom, venture capital investments have been predominantly targeted to later stages. These differences in financing profile partly reflect differences in industrial structure as well as capital markets. For instance, countries where buyouts offer easier and faster opportunities to achieve higher returns would attract the later stages of funding.

Figure 5. Venture capital investment by stages a percentage of GDP, 1999-2002



Note: 1998-2001 for Australia, Japan, Korea and New Zealand. The definition of private equity/venture capital tends to vary by country.
Source: OECD venture capital database, 2003.

The availability of a proper exit mechanism through an IPO is extremely important for the size and strength of venture capital markets. It is often asserted that the availability of deep and liquid public equity markets tailored to small high-tech growth companies such as *NASDAQ* in the United States is partly responsible for the strength of venture capital industry in the United States (**Table 2**). The second-tier markets in Sweden also played a major role in financing growth-oriented companies. Sweden's market capitalisation on Sweden's O-lists surpassed that of the US in 2002, partly attributable to Sweden's tax reforms related to taxation on the ownership of unlisted stocks. For example, a partial corporate tax exemption was introduced for all equity listed on the O-lists (OECD, 2003*a*). The UK system has a well-developed capital market, but it still lacks public equity markets that are sufficiently oriented towards small growing innovative firms. The recent launch of *techMARK*, a new index designed to include both existing technology businesses and new ones, as well as the announced listing requirements by the London Stock exchange, may be regarded as an attempt to strengthen the venture capital industry (Bank of England, 2001*a*).

Table 2. Second-tier stock markets in OECD countries

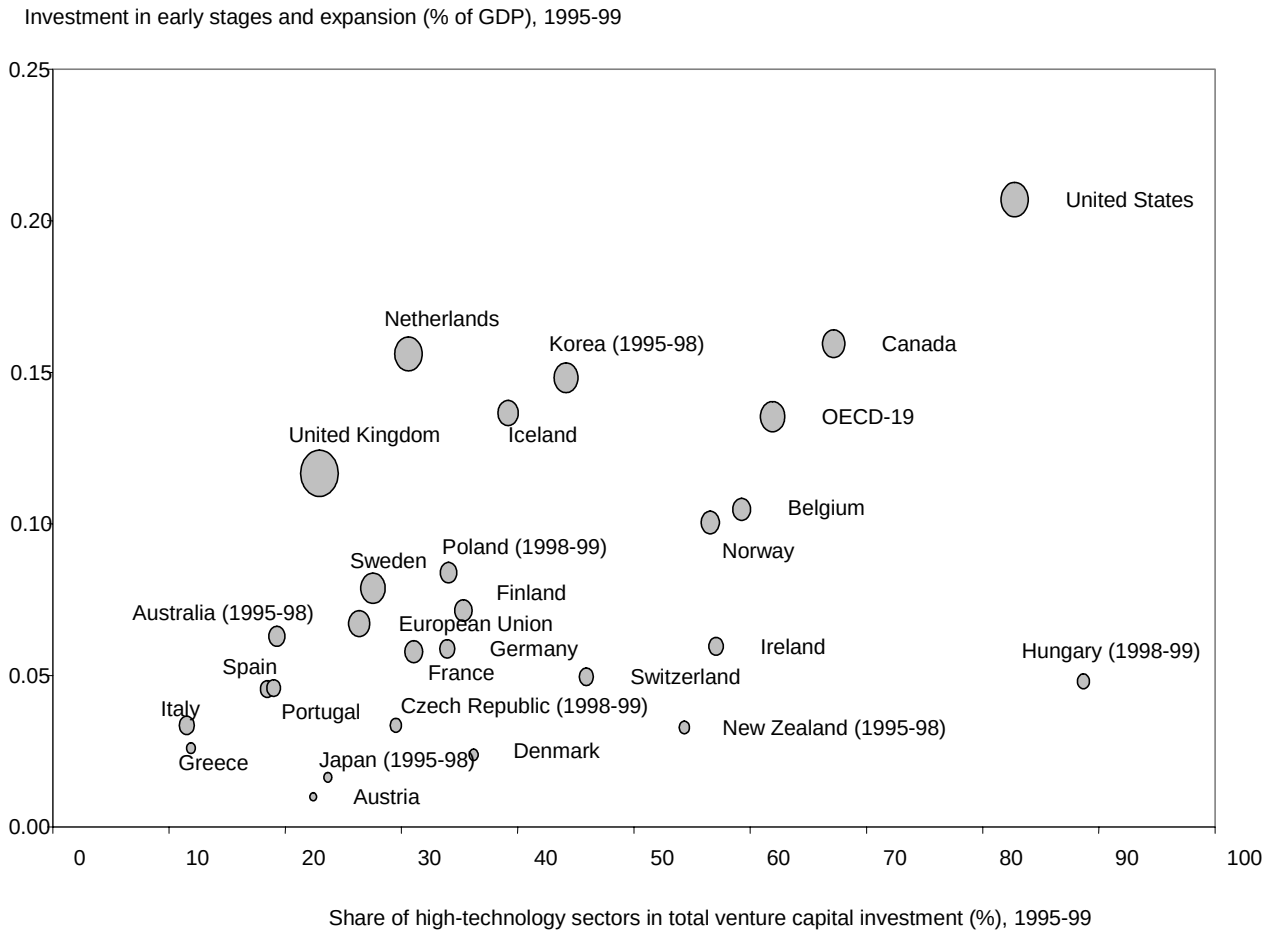
Country (stock market)	Year of creation	Number of initial public offers (IPOs)				Number of quoted companies				Market capitalisation (% GDP)			
		1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
Sweden (O-List)	1993	..	..	24	9	150	228	240	235	28.3	24.0	23.3	18.5
United States (NASDAQ)	1971	485	397	63	35(1)	4 829	4 734	4 109	3 765(1)	56.5	36.9	28.9	16.5
Canada (Canadian Venture Exchange)(2)	1999	2 425	403	330	122	2 358	2 598	2 688	2 504	1.7	10.2	12.7	9.7
Korea (KOSDAQ)	1996	160	250	181	176	453	604	721	843	22.0	5.6	9.5	5.0
United Kingdom (AIM)	1995	102	277	177	160	347	524	629	704	1.5	1.6	1.2	1.0
Ireland (ITEQ)	2000	---	..	..	...	---	7	8	8	---	3.6	1.7	0.7
Italy (Nuovo Mercato)	1999	6	32	5	0	6	40	45	45	0.6	2.2	1.2	0.6
Germany (Neuer Markt)(3)	1997	132	132	11	1	201	338	326	240	5.7	6.0	2.4	0.5
France (Nouveau marché)	1996	32	52	9	2	111	158	164	154	1.1	1.7	1.0	0.5
Switzerland (SWX New Market)	1999	6	11	1	0	6	17	15	9	..	3.0	0.9	0.2
Finland (NM List)	1999	..	..	..	..	..	17	16	15	..	0.7	0.3	0.2
Denmark (Dansk AMP)	2000	3	0	1	3	3	3	4	7	0.1	0.1	0.1	0.1
Spain (Nuevo Mercado)	2000	---	..	..	..	---	12	..	14	---	3.4	..	..
Japan (Mothers in Tokyo)	1999	2	27	7	1(4)	2	29	..	..	0.2	0.1	..	..
Japan (Hercules in Osaka)(5)	2000	---	..	43	..	---	..	32	..	..	..	0.3	..
Netherlands (EURO.NM Amsterdam)(6)	1997	1	2	---	---	13	15	---	---	0.3	0.2	---	---
Belgium (EURO.NM Belgium)(6)	1997	6	3	---	---	13	16	---	---	0.2	0.2	---	---
NASDAQ Europe	2001	---	---	..	..	---	---	49	43	---	---	---	---
Austria (Austrian Growth Market)(7)	1999	..	..	---	---	2	2	---	---	0.01	0.01	---	---
Europe (EASDAQ)(6)	1996	..	..	---	---	56	62	---	---	---	---	---	---

Notes:
(1) End of September.
(2) Data includes both high-growth firms' shares and shares of investment funds.
(3) The Neuer Markt segment will be discontinued after a transition period at the end of 2003.
(4) End of June.
(5) Previously NASDAQ Japan.
(6) In 2001, EURO.NM (EURO.NM Belgium and EURO.NM Netherlands) and EASDAQ merged and became NASDAQ Europe.
(7) On April 2001, the two stocks in the AGM segment were transferred to the Specialist Segment of Wiener Börse.
Source: Compilation by OECD Secretariat from national sources.

Differences in the availability of IPOs also reflect international differences in capital markets. In Anglo-Saxon countries, the stock market plays a central role in financing investment, monitoring companies and reallocating corporate control. In these countries, notably in the United States, VCFs tend to be invested in early-stage ventures and high-tech industries (**Figure 6**). On the other hand, banks in most Continental European countries and Japan play a much more significant role in these financial functions (Black and Gilson, 1998). In countries with bank-oriented capital markets, for example, Germany and Japan, venture capital provides primarily later stage financing to low-tech industries. Moreover, most VCFs in Japan are affiliated with banks and security companies. Most employees in these funds are seconded from parent companies who often lack industry expertise to assess risk profile of innovative SMEs (Tsuru, 2000).

In fact, countries with under-developed equity markets offer limited potential for the growth of technology based small firms (Carpenter and Petersen, 2002). Both the size of stock market, as indicated by market capitalisation as a proportion of GDP, and market liquidity, as indicated by total value traded, illustrate the overall development of stock market and the easiness of exit (**Figure 7**). However, the development of securities markets also reflect differences in economic structure. Finland has one of the largest market capitalisation relative to GDP mainly due to one company, *Nokia*. Sweden's comparatively large stock market is attributable a few very large, export-oriented companies.

Figure 6. Venture capital investment in early-stage/expansion and high-technology sectors, 1995-1999

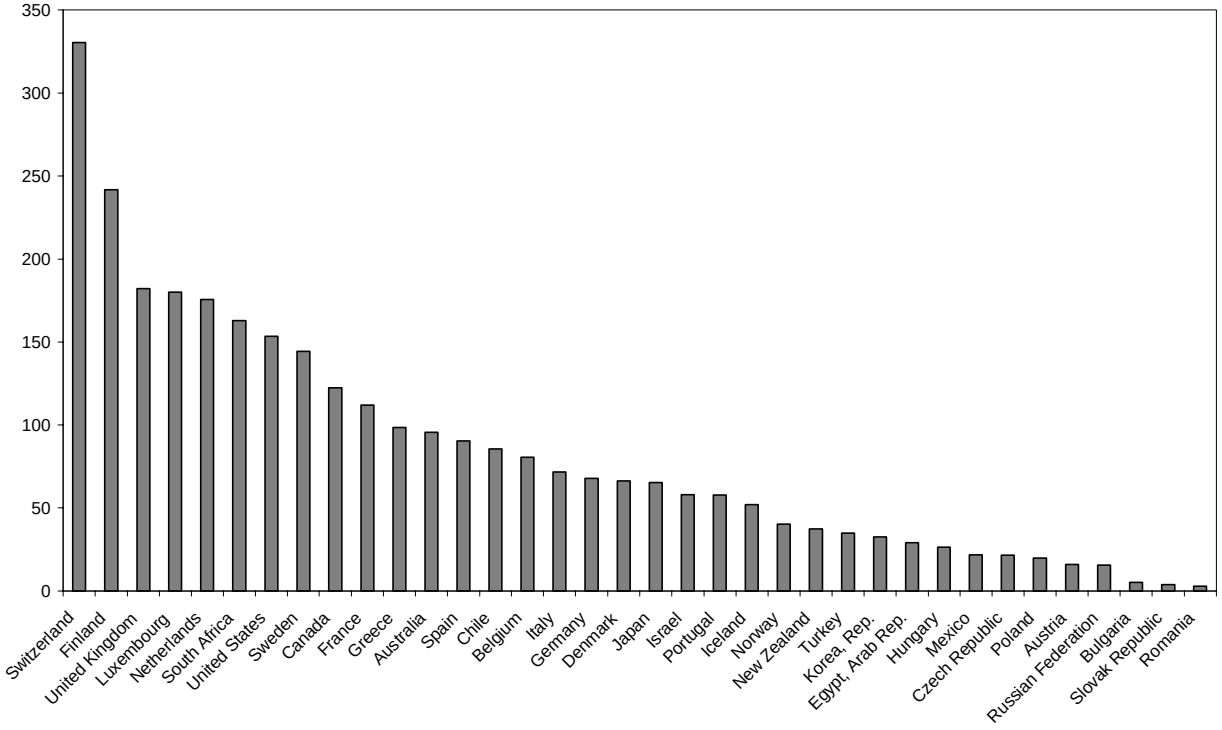


Note: The area of the bubble corresponds to the percentage of total private equity/venture capital investments in GDP.
Source: OECD (2001a).

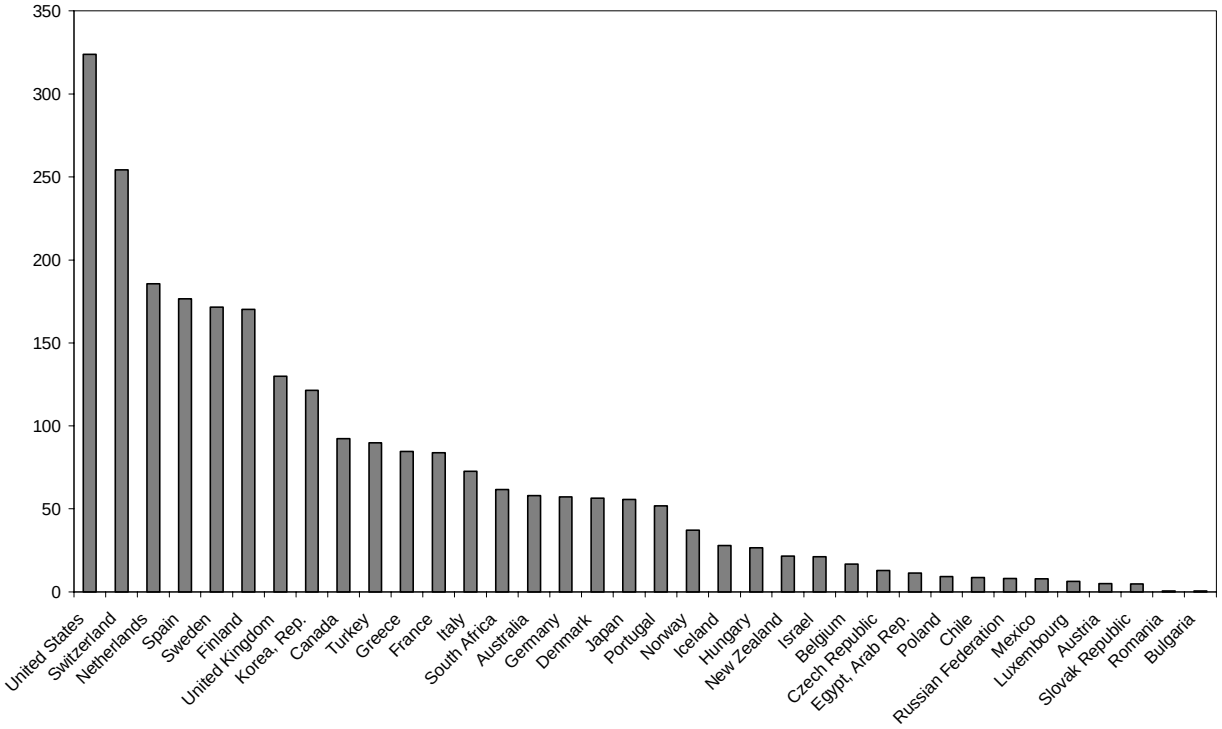
Another important factor accounting for the strength of the venture capital industry in the United States is the availability of pension funds. The United States amended the "prudent man" governing pension fund investments in 1979. This has initially been misinterpreted as prohibiting pension fund investments in venture capital. The reinterpretation by the US Labour Department allowing pension fund investments in venture capital along with a host of regulatory changes spurred a flood of new money into VCFs (Fenn *et al*., 1995). Thus, pension funds account for the largest source of VCFs in the United States. The United Kingdom also relies heavily on pension funds as a source of VCFs, though not to the same degree as the United States. Institutional investors play a far smaller role in Korea, Austria, Belgium, Portugal, Hungary and Greece (**Figure 8**).

Figure 7. *Stock market development, 2000

(a) Market capitalisation as a proportion of GDP

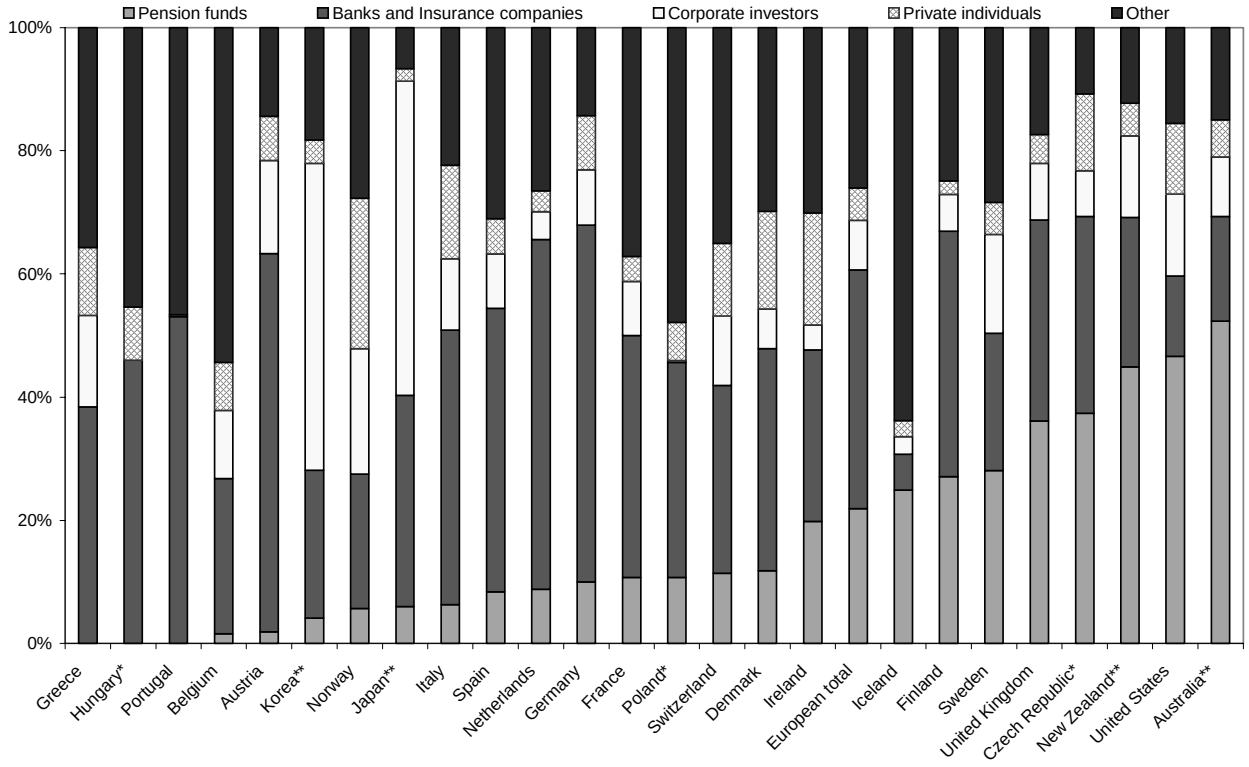


(b) Total value shares traded as a proportion of GDP



Source: World Bank (2002).

Figure 8. Sources of funds raised for private equity/venture capital, average1995-2000



Note: * average 1999-2000; ** average 1998-2000.
Source: OECD Venture Capital Database, 2002.

The development of the venture capital industry depends not only on the supply of funds, but also depends on the availability of highly specialised skills of venture capitalists that could properly assess the commercial potential of investment projects. The supply of venture capitalists tends to be highly inelastic at least in the short run as the skills necessary to become venture capitalists can be developed through years of experience (Kortum and Lerner, 2000). In Japan, it has been suggested that the inadequate capability of financial intermediaries to evaluate investment projects is partly responsible for the weakness of its venture capital industry (Fujita and Matsuno, 2001).

Box 2. Venture capital in developing economies

The role of venture capital is recognised as important for innovation. However, the VC industry still remains at an infant stage in most less developed countries and economies in transition. There are at least two factors behind this. First, most less developed countries and economies in transition lack an exit mechanism such as an organised public equity market for a VC industry. Second, most do not have large pension funds that can be invested in VCFs (Mani and Bartzokas, 2002). For instance, venture capital is almost non-existent in Mexico and Chile attributable to a lack of liquidity and exits. On the other hand, Korea and Chinese Taipei had been much more successful. Their success is related partly to their integration into the global industrial economy, well developed human capital and the capabilities of their governments (Dossani and Kenney, 2002*b*).

Access to loans

As alluded to earlier, the high-risk, high-return nature of innovative SMEs suggests that debt financing may not be appropriate especially at an early stage. In the case of a debt financing, the investor's return is limited while it is fully exposed to downside risk. Moreover, lack of accounting records, inadequate financial statements or business plans make it difficult for the banks to properly assess the creditworthiness of SMEs. Furthermore, high administrative/transaction costs of lending or investing small amounts do not make SMEs loan portfolio a profitable business.

However, innovative SMEs located in countries where the equity market is not well developed may have no other choice but to rely on debt financing. This is especially relevant for some developed and less developed countries where SMEs do not have the luxury of counting on venture capitalists to fund projects. In this case, the government can reduce the risk to banks of financing innovative SMEs by introducing government programmes such as loan guarantees.

II. BRIDGING THE GAPS – ARE THERE LESSONS TO BE LEARNED?

This chapter reviews a number of government schemes that are in place to deal with either equity or debt financing gaps faced by innovative SMEs. However, these schemes are only of a secondary importance in a country where entrepreneurship and innovation are not viable. The most fundamental requirement for facilitating funding for innovative SMEs is to create an economic and institutional environment that is conducive to entrepreneurship and innovation.

The availability of high quality investment opportunities is essential for the development and existence of active venture capital industry and private equity markets. Surveys often indicate that business angels and venture capitalists are constrained by the lack of what they perceive to be promising entrepreneurs and high-potential firms suitable for investment. This is especially true for developing countries. For instance, all the transition economies had been dominated by large firms where SMEs played a very small role. Governments therefore need to assure that the existing overall business climate is conducive for people to engage in entrepreneurial activities. This entrepreneurial environment is influenced by overall economic, sociocultural and political factors. While some of these factors reflect deeply rooted cultural values and social choices, there are several steps governments can undertake to encourage entrepreneurship. These include removing obstacles to business creation and growth and formulating adequate insolvency procedures and bankruptcy rules. These are developed further in the background report: "Fostering Entrepreneurship and Firm Creation as a Driver of Growth in a Global Economy".

Creating Efficient Financial Markets

Financial systems are an integral part of the market-based economy where they essentially allocate resources by channelling household savings to the corporate sector and reallocating investment funds among firms. Moreover, the financial system can act as a lubricant for entrepreneurship and innovation. An efficient financial system evaluates prospective entrepreneurs, mobilises financial resources towards most promising ones, diversifies risks associated with innovative activities and rewards successful ones (King and Levine, 1993). Thus, governments need to assure that their financial markets operate efficiently so that most deserving firms would have access to financing and successful ones would adequately be rewarded.

Although roles of financial systems are clear, financial systems actually differ widely across countries. At one extreme, the North American financial systems are centred on stock markets where firms have better access to external equity financing. At the other end, the Continental Europe has a long tradition in loan financing due to the bank centred financing system. Other countries fall within these two broad categories, but there are some differences even within these groups. Stock markets in the United Kingdom also play a central role, but in contrast to the United States, the domestic banking industry is highly concentrated. France's system is similar to Germany's in that banks play a much more prominent role. However, the French government has been much more active compared to other countries through the ownership of banks and other financial institutions at various times (Allen and Gale, 2000). Japan's system is also dominated by banks, but they have a much closer relationship with their clients than in most other countries with the possible exception of Germany. The parallel development of two different financial systems may reflect the evolution of different legal environments. For example, regulatory constraints in Germany and Japan against issuing corporate bonds and commercial paper may have been a significant

factor in promoting bank dependence among firms (Berger *et al*., 2000). It is probably true that countries with bank centred financial systems tend to be less conducive to entrepreneurial activity than stock market centred systems due to the banks' conservative approach in lending and investing, which limits reward to entrepreneurialism and more severely penalises failure (Black and Gilson, 1998). However, a bank-centred system may be a preferred architecture for countries with poor information infrastructures since it may be better suited to deal with moral hazard and adverse selection. For instance, the corporate governance problem is addressed by a consolidated ownership in financial institutions, rather than dispersed ownership systems common in stock market oriented systems (Berger *et al*., 2000; Corbett and Mayer, 1991).

Increased competition in financial markets in developed countries led banks and other financial institutions to launch a number of initiatives to serve SME financing needs effectively. These include: reducing information asymmetry of SMEs and high risks using credit scoring systems (an automated statistical method to assess the risk of default of a credit applicant); reducing costs of lending by applying latest information technologies; improving financial services for SMEs (Lattimore *et al*., 1998; UNCTAD, 2001*b*; Box 2). These recent innovations can be adopted to a varying degree by financial institutions in developing countries and transition economies to become more SME oriented. For instance, in European countries in transition, commercial banks are used to providing loans to state-owned enterprises with the secure rate of return. Thus, their lack of expertise and experience in evaluating loan requests as well as unsatisfactory competitive environment make them ill-prepared for providing financing to innovative SMEs (Mugler, 2000). In addition, entrepreneurs' lack of credibility in business undertakings and of experience in preparing business planning and transparent accounting procedures make them difficult to attract financing.

Box 3. New Technologies in SME Loans

Financial and information technologies can be used to reduce transaction costs and improve portfolio risk management. For instance, SME loans in Hong Kong China are not accepted on the basis only of traditional information such as financial statements, cash flow projections and business plans. Instead the Internet is used to obtain information on customers, sales and payments on a real time basis to create a dynamic risk management and loan servicing model for SME lending. Loans are extended against the cash flow and business performance and secured by accounts receivable (UNCTAD, 2002).

The implementation of a credit model such as credit scoring systems is a mass customised approach to reduce the transaction costs in evaluating and managing SME loans. However, this approach requires a minimum scale of operation as well as a change in culture. Thus, it is not justified for financial institutions that do not have a sufficient volume of small business lending. Credit bureaus or shared scoring solutions may allow lenders to take advantage of shared data and tools. Although small business scoring is well established in Western Europe and the United States (*e.g.*, Wells Fargo, Citibank and Bank of America) and is beginning to become more common in Asia, it is rarely used in less developed countries (Jennings, 2001; Stein, 2001).

For developing countries and transition economies, it is essential to have a proper regulatory framework for the development of an equity market. That is, a regulatory agency is needed to protect minority shareholders from expropriation by firm managers. Two country cases reveal the importance of legal and regulatory protection of shareholders. In Poland, the existence of a regulatory agency that provided protection to minority shareholders helped to develop the stock market. On the other hand, the absence of regulatory oversight in the Czech Republic translated into an inactive stock market. Investors were afraid to put money in firms where they were not adequately protected from a possible misuse of their money by managers (McMillan and Woodruff, 2002).

Box 4. Estonian Experience in Creating Stock Markets

Estonia was able to build its securities markets virtually from scratch within a few years. It introduced a regulatory framework in the 1990s to establish legal foundations and regulatory basis for the securities market infrastructure institutions and institutional investors, while still emphasising the leading role of market forces. This resulted in a successful establishment of securities markets in Estonia, including the formation of the Tallinn Stock Exchange in 1995. But public securities market plays a minor role in corporate financing and companies still rely on bank loans as a predominant form of external financing. A short history of securities markets and a relatively small economic size may limit the expansion of securities markets in Estonia (Kein, 1998).

Government Policies to Improve Equity Financing for Innovative SMEs

Investment Regulations

As discussed earlier, one of the essential factors behind the development of the venture capital industry in the United States is the emergence of institutional investors (*e.g.*, pension funds, insurance companies and banks) as the primary source of funds attributable to the policy shift allowing pension funds to be invested in VCFs. Other countries such as Denmark, Ireland, Japan and the United Kingdom also amended the rules allowing pension funds to be invested in high risk investment such as in VCFs to a varying degree (OECD, 1998).

Nonetheless there still exist investment regulations in all countries. In the United Kingdom, regulations designed to limit risks for pensions are partly responsible for a low share of UK's institutional investment assets in private equity compared to that of the United States (1% vs. 7%). Moreover, a recent surge in private equity investments by UK pension funds were targeted to later stage deals. Specifically, the *1986 Financial Services Act* excludes the majority of UK pension funds from investing directly in private equity funds while a minimum funding requirement (MFR) introduced by the *1995 UK Pension Act* requires pension schemes to hold a minimum level of assets to meet liabilities. The 2000 *Myners Review* suggested changes to the 1986 *Financial Services Act* to liberalise regulations related to pension fund investments in private equity funds. The *2000 Financial Services and Markets Act* combines three Acts related to financial regulations (the *1982 Insurance Companies Regulation Act*, the *1986 Financial Services Act* and the *1987 Banking Act*) under a single regulator. These efforts are expected to encourage institutions to invest in riskier and earlier stage funds (Baygan, 2003*d*).

Canada's *Labour-Sponsored Venture Capital Corporations* (LSVCCs) with dual objectives of profit maximisation and social development have tended to crowd out private investment and hinder the development of private equity funds. The government amended the investment incentives related to LSVCCs in 1986 by reducing related tax credits and increasing the holding period. Subsequently, the share of LSVCCs in Canadian venture capital markets declined. The government in its 2001 budget also eliminated the 30% ownership limitation for *Qualified Limited Partnerships* (QLPs) to facilitate their use by tax-exempt and foreign investors in structuring their venture capital investments. The ownership restriction has been identified as a potential impediment to venture capital investment by tax-exempt entities in Canada (Baygan, 2003*a*).

The presence of institutional investments in venture capital markets in Israel is barely visible because of strict restrictions on local institutions' investments in venture capital markets. At the same time, Israel has benefited from large inflows of venture capital from institutional investors in the United States. The Israeli government is now considering to relax its investment regulations. Recent legislation allowing the creation of pooled vehicles investing in VCFs led to the establishment of Israel's first "*funds of funds*"

in 1999. The Ministry of Industry and Trade's proposal to offer government equity guarantees to institutional investors participating in local VCFs is under review by the Treasury Ministry. Government equity guarantees, which could tilt investment flows toward excessively risky ones, may not be the most appropriate vehicle to stimulate institutions to invest in private equity funds. Instead, liberalising investment restrictions in local pension and insurance funds from investing in private equity funds may have a more positive outcome (Baygan, 2003*b*).

Korea enacted the 1997 *Special Measures Law* for Fostering Venture Businesses to liberalise provisions for venture capital investments by institutions, including banks and pension funds. In addition, the Korean government amended regulations regarding the National Pension Scheme allowing investment in *limited partnership funds* (LPFs). Korea also moved towards liberalising restrictions on foreign investment rules in venture capital markets. Restrictions on foreign investment in venture-backed companies were lifted. The requirement of advance approval for foreign equity investments in LPFs was eliminated. However, the government's role still remains extensive in financial markets including the banking system, pension funds, VCFs and LPFs (Baygan, 2003*c*).

Relaxed investment regulations do not themselves lead to an increase in venture capital investments. For instance, Denmark's successive regulatory reforms (*e.g*. relaxation of investment ceilings in venture capital funds by insurance companies and pension funds) have had a disappointing effect on venture capital investments by financial institutions (OECD, 2003*c*). Confusing rules, a risk-averse investment culture and inexperienced fund managers appeared to have been responsible for less than anticipated results.

Government Equity Programmes

Although the US venture capital market developed largely without government assistance, the government has established the Small Business Investment Company (SBIC) programme in 1958 originally to stimulate the development of the venture capital industry. SBICs are privately owned and managed investment firms that have access to loan financing, called "leverage", by issuing debentures which are guaranteed by the US Small Business Administration (SBA). The guarantees are provided to investors, but they are not given to the SBICs. They remain fully liable for the outstanding leverage in the event of a default (**Table 3**). Their funds are used to supply equity capital and long-term loans to qualified US-based small businesses. The New Markets Venture Capital (NMVC) created in 2000 is modelled after the SBIC programme to develop low-income geographic areas. However, unlike the SBIC programme, the SBA will not license NMVC companies, but it will select NMVC companies through a competitive selection process and enter into a participation agreement with each NMVC company. The projected final net loss on the active portfolio of the SBIC programme is about 1.5% (EC, 2001*b*). Similarly, the *Business Development Bank of Canada* (BDC) is focused on leveraging private sector funding by running various equity and non-equity programmes (Baygan, 2003*a*). The BDC's venture capital commitments account for about 2% of total capital managed in Canada. However, the leveraging effects of these programmes need to be evaluated on a continuing basis so as to avoid the possibility of crowding out private sector funding.

Regional venture capital funds have extended the amount of equity capital available to SMEs in the UK by establishing ongoing relations with firms on a local basis and subjecting future financing to performance criteria. The success of these probably reflects the absence of other regional financial institutions, in particular of a local banking system in the UK. There are currently proposals in the UK to replicate the small business investment companies (SBICs) in the UK that have been successfully established in the US (see HM Treasury and Small Business Service, 2003). These private companies receive favourable finance from the government to use in venture capital investments. Analogously to loan guarantee schemes they therefore operate via the private sector and transfer some of the risk from the private to the public sector. Mexico formed an SBIC-like program in the late 1980s by establishing the

SINCAs *(Sociedades de Inversion de Capitales*) program. However, the program was not able to replicate the success of SBICs. There are a number factors responsible for the difficulties experienced by the SINCAs. They include: recurrent financial crises disrupting capital flows; no proper exit mechanism on the stock exchange; an absence of institutional investors willing to invest in SMEs; lack of regulatory mechanisms to legitimatise equity investments in SMEs; and minimal protection for minority shareholders (Dossani and Kenney, 2002*b*).

Similarly, Japan also used public funds to establish three Small and Medium Business Investment Consultation Co. Ltd. in 1963. These three Japanese SBICs had cumulatively invested in 2 500 firms where 78 had public stock offering by 1996. While they played an important role in supplying capital to existing SMEs, their role was much more limited for start-ups (Kenney *et al.*, 2002).

The Korean government takes a more direct approach to alleviate the perceived funding gap. The government relies mainly on the direct funding and equity guarantees to strengthen the domestic venture capital industry (e.g. *Dasan Venture*; *Informationalisation Promotion Fund; Technology Credit Guarantee Fund*). The government's equity programmes appear to be overly generous, since investors are fully protected from risks because of government guarantees. For instance, the *Technology Credit Guarantee Fund* (TCGF) provides 70%-100% guarantees on investments in venture businesses and full guarantees on the primary bond obligations of certain ventures. This can turn out to be very expensive and it can also funnel investments toward excessively risky ones (Baygan, 2003*c*).

The German BTU-scheme (Beteiligungskapital für kleine Technologieunternehem) provides a number of lessons for countries interested in developing a national venture capital market. The BTU-refinancing scheme offers long term loans to investors combined with a partial default guarantee. With the BTU-co-investment model the public support bank participates as a dormant co-investor, as long as another private venture capital provider (the lead investor) at least matches the funding of the public support bank. The bank could provide partial re-compensation for the lad investor for a possible loss from his investment. The programme was formed in 1989 and mobilised more than 3 billion euros for small technology oriented companies. The scheme will not be continued for two reasons. First, the interest to be paid by investors on the refinancing loans and by the companies on the dormant participation created liquidity difiiculties before the business generated sufficient cash flow. Second, the partial re-compensation in case of default turned out to be an incentive for investors to stop providing support to companies that are not expected to generate capital gains. BTU is now being replaced by a fund-of-fund investing into venture capital funds and a fund investing directly into small technology oriented companies. Both schemes co-invest together with private investors on commercial terms and do no longer include partial loss guarantees for investors.

In contrast, the structure of Israel's *Yozma*, established in 1993 and phased out in 1997, was quite different. First, *Yozma* provided no guarantees. It provided capital to funds by matching up to 40 per cent of the capital invested by private investors. Thus, private investors and fund managers bore part of the downside risk. Second, like WFG, *Yozma*'s investment return was capped. However, the private investors had a call option on *Yozma*'s investment that enabled financial intermediaries to enjoy upside return. In fact, the cap on *Yozma*'s return served as a subsidy to other investors, which ended up increasing incentives to monitor portfolio companies. Thus, although *Yozma* did not make investment decisions, its investments were made through funds in which their managers and other investors had incentives to maximise the performance of funds (Gilson, 2002). In this respect, the *Yozma* structure was similar to that of the U.S. venture capital industry in that there was a highly motivated financial intermediary between passive investors and the portfolio company. Moreover, the Government ensured competition by creating ten small funds rather than one large one. In essence, the Government was a catalyst in developing venture capital markets in Israel, though it held a minor stake in funds (less than 40%) – there were no venture capital funds in 1992, but it reached 60 in 2002 (Erlich, 2002). In addition to a proper design, Israel also had a

very favourable set of conditions to make its venture capital policies successful. They include: a pre-existing high tech industry with considerable innovation capabilities; business links with US industry & capital markets; and lessons learned from policy experiments (Avnimelech and Teubal, 2002). A number of countries such as Korea and New Zealand have developed funds following the structure of *Yozma*. However, the Israel experience and its venture capital policies may not be directly replicable in other countries unless underlying conditions are also satisfied.

In summary, direct funding by the government to improve financing access by SMEs does not appeal to very effective in meeting its objectives. Direct government programmes typically lack the appropriate incentive structure to carefully monitor the performance of the portfolio company. Moreover, government programme mangers lack technological and management experiences to provide advice to the portfolio company. To make matters worse, entrepreneurs who value independence may prefer to have the government acting as a financial intermediary to avoid monitoring and intervention by venture capitalists. These will likely lead to an increased number of failures in entrepreneurial ventures since they do not benefit from experienced financial intermediaries. A vicious cycle may develop where an increase in the number of failed ventures discourage the development of private sector financial intermediaries, which in turn lead to the decrease in the supply of entrepreneurs (Gilson, 2002).

These country experiences suggest that providing capital by the government is not enough to engineer a viable venture capital market. The government needs to create the necessary financial intermediaries with the appropriate incentive structure so that they would be motivated to closely monitor the performance of the portfolio company. This would also improve the quality of entrepreneurship as fund managers and other investors take a more active role of providing technical and managerial advice to entrepreneurs. Moreover, a more comprehensive approach such as the European Risk Capital Action Plan to improve access to risk capital finance could be an effective way to deal with fragmented equity markets. In particular, the Plan is focused on dismantling barriers (*e.g.*, institutions and regulations, taxation, human resources, culture) that hinder the development of risk capital markets in Europe (EC, 2003).

Table 3. Innovation oriented equity programmes

Country	Scheme name	Target and eligibility	Guaranteed coverage	Fees
Austria	Equity Financing with Venture Capital Funds	SMEs with a high technology orientation and good opportunities for growth.	A participation guarantee that secures 50% of the paid-in capital.	N.A.
Denmark	VækstFonden (the Danish Investment Fund)	Seed and start-up financing for small innovative firms.	Cover up to 50% of the losses of selected venture capital or 'development' companies	
Netherlands	Twinning	ICT related, new or innovative companies with exportable product ideas.	The maximum guaranteed amount per project is €1091k.	N.A.
United States	Small Business Investment Companies (SBIC)	Most investments in the range of USD 0.25 M to 4 M to cover firms whose needs not served by venture capital companies.	N.A.	N.A.

Source: EC (2001*b*), (OECD, 2003*a*, *c*)

Business Angel Networks (BANs)

Angel finances or informal equity is recognised to be a major source of equity for financing innovative SMEs. In the United States, angels are estimated to undertake ten times as many deals as formal venture capital firms (EC, 2001*b*). In Europe, the potential for business angel investments is estimated to be between €10 billion to €20 billion a year, compared to €4.1 billion venture capital investment in seed and start-up phases in 2001 (EC, 2003). Business angels often argue that there is a lack of good investment opportunities, while entrepreneurs complain the difficulty of assessing and securing financing. This situation is viewed by many as the reflection of market inefficiencies in mobilising financial resources in meeting the demand. In essence, the invisibility of potential investors and entrepreneurs and the fragmented marketplace impose high search costs for both parties.

Business angel networks (BANs) have the potential to bring together private investors seeking good investment opportunities and entrepreneurs searching to raise finance by providing a channel of communication. In the United States, BANs developed spontaneously with little official assistance (Thompson and Choi, 2002). The United Kingdom has one of the highest numbers of BANs in the OECD (**Table 4**). The UK experience indicates that the impact of BANs on informal venture capital activity has been both positive and significant compared to other government initiatives. Moreover, public sector support for BANs is cost effective compared to other government support schemes. As well, BANs do not create a significant deadweight loss and displacement from businesses that have raised finance through BANs is small (Mason and Harrison, 1999). The Canadian experience suggests that locally oriented BANs designed according to a community size and industrial structure could be more effective than national efforts (Baygan, 2003*a*). The evidence so far indicates that BANs cannot operate on a full cost recovery basis. The establishment of BANs requires either government or corporate sponsorships (Mason and Harrison, 1999). International co-operation in business angel market may provide a further scope for sharing experience and knowledge as well as expanding investment opportunities (EC, 2003).

Table 4. Business angel networks

	1999	2002
Belgium	2	7
Denmark	0	6
Germany	3	40
Greece	0	0
Spain	1	2
France	3	31
Ireland	1	1
Italy	0	13
Luxembourg	1	1
Netherlands	1	2
Austria	1	1
Portugal	0	1
Finland	1	1
Sweden	1	1
United Kingdom	49	50
European Union	64	157

Source: EC (2003).

Government Policies to Improve Debt Financing for Innovative SMEs

Direct loan programmes

Most direct loan programmes do not appear to be suitable for financing innovative SMEs since they do not share potential upside return, but assume a significant portion of downside risks. For example, the Business Development Fund (*Erhvervsudviklingsfonden*) was established in Denmark to provide high risk-loans to high-technology projects in start-ups and established enterprises. The Fund was set up to share the downside risk, but receive only a fixed interest for commercially successful projects. As a result, more than 60% of total funding was lost on more than 900 funded projects. The fund was recreated as the Danish Investment Fund (*VækstFonden*) in 2000 (OECD, 2003*c*).

Loan guarantee programmes

A debt-financing gap or credit rationing is said to exist for innovative SMEs since they are perceived to be riskier than other types of enterprises. Moreover, they often lack collateral that can be used to secure bank loans. Many governments have therefore implemented loan guarantee programmes to close the perceived debt financing gap, especially for innovative SMEs. The overall thrust of these loan guarantee programmes is to transfer part or some of the risk to the public sector. However, having the banks administer the loans usually contains costs of these programmes. In most cases, the subsidy component is not the interest rate that is charged to borrowers, which is usually some conventional market rate plus a small premium, but rather through default costs incurred by the government. Thus, the success of such a programme hinges on its ability to minimise the number of defaults, while providing loans to borrowers that would otherwise not have been able to obtain them in the private financial market (OECD, 1998). There are essentially two government policy parameters in loan guarantee schemes, the premium and the guarantee. The premium can act as a deterrent to take-up of such schemes, whereas the proportion of loan guarantee by the government can encourage the use of loan guarantee schemes. Thus, the government needs to carefully balance these parameters to ensure that deserving SMEs are financed while maintaining the financial sustainability of these programmes.

Canada's *Small Business Loans Act* (SBLA) programme was launched to fill the debt-financing gap for SMEs (**Table 5**). The SBLA programme encouraged credit unions, trust companies and finance companies to administer SME loans to alleviate excessive market power in the hands of a few banks in Canada. The 1998 evaluation recommended the continuation of the programme based on the conclusion that optimal lending conditions for SMEs were not in place. However, the overall success of the programme has been limited for two reasons. First, in some cases, assistance has been given to firms that already had access to a conventional form of loans possibility due to the generous eligibility conditions. Almost 60 per cent of SBLA using firms reported that they would not have obtained a conventional loan in the absence of the programme. Second, in many instances, banks have used the programme to reduce risk on loans they would have made in the first place. Lenders reported that almost 50 per cent of SBLA loans would have been made without the programme. (OECD, 1998, 2000). The programme was recently replaced by the Canada Small Business Finance (CSBF) programme in order to strengthen and streamline the administration of the programme and improve its financial self-sufficiency. In particular, the most substantive update was to change the subsidy nature of the Programme to one in which fees are charged to offset the cost of claims, moving the Programme toward cost-recovery (Industry Canada, 2002*a*). Lenders now must use the same level of due diligence in granting CSBF loans and assessing their repayments as they would with conventional loans. Moreover, there is a provision for auditing a lender's loan files to assist in the monitoring of programme compliance. Also lenders tare required to report individually on the status of each loan made under the CSBF programme to help the Government better monitor the portfolio of CSBF loans (Industry Canada, 2002*b*).

Table 5. Innovation oriented loan guarantee schemes

Country	Scheme name	Target and eligibility	Guaranteed coverage	Fees	Cost as a share of total value of loan
Austria	Young Entrepreneurs	The new enterprise serving a market niche.	80% of bank credits, maximum € 145 000.		
Canada	Canada Small Business Financing Act	One third targeted to technology-based firms; Annual revenues up to CAD 5M.	85% of a lender's loss. Maximum loan amount is CAD 250 000.	Arrangement: 2% of loan amount; Annual fee: 1.25% of outstanding credit.	1.8%
Denmark	Danish Investment Fund (*VækstFonden*)	Seed and start-up financing for small innovative firms	Covers 75% of bank loans up to DKK 5 million	Premium of 3% in the first two years and subsequently 1.5%	N.A.
Finland	Growth and Employment Guarantee Scheme	Innovative SMEs, with growth and job creation potential.	Average 50%	2.5%	2.1%
France	Creation & SME Capital Guarantees	Turnover less than € 471k.	Guarantees 65% and maximum of 70% of loan amount for startups and maximum 50% for other SMEs.	Arrangement: no fee. Annual fee: 0.6% of the outstanding guaranteed credit.	N.A.
Italy	Confidi Toscana	High-tech investments.	50% of a bank loan. Loan maximum is € 150k	Membership fee: € 500. Contribution to risk fund: 0.75% to 1.25% normally. Administration fee: € 50/yr.	N.A.
Spain	Compañía Española de Reafianzamiento, S.A. – CERSA	Targeted to very small enterprises	75%	N.A.	N.A.
United Kingdom	SFLGS	Less than € 2.13 M turnover, or € 4.26 for manufacturers, and fewer than 200 employees from eligible sectors.	Firms with less than 2 years: 70% of loan amounts between € 7k and € 142 k. Firms older than 2 years: 85% of loan amounts up to € 354 k.	Arrangement fee: max 1% of loan. Premium above base interest rate: 1.5% on the outstanding credit or 0.5% on fixed-rate loans.	N.A.

Source: EC (2001*c*); OECD (2002*c*); National sources.

The UK Small Firms Loan Guarantee Scheme (SFLG) was also devised to address a perceived market failure in SME financing by targeting viable business propositions that lack an established track record or collateral. The UK experience indicated more than 50 per cent of programme users would have been able to secure loans from conventional sources in the absence of the programme (OECD, 1998). Moreover, the premium on the interest rate was not sufficient to offset loan defaults thereby making it necessary to continually draw upon taxpayers' money (Lattimore *et al*., 1998). There was also some evidence that commercial banks were missing out on potentially profitable market since SFLGS funded firms were at least likely to survive as those non-SFLG funded firms (Cowling and Clay, 1994). A more recent study by KPMG in 1998 found that the role of the SFLG was more positive. The level of additionality is higher, reaching about 70 per cent and a majority of SFLG-using firms were growth-oriented or innovative. The study, however, concluded that the programme can be made more effective by equalising the guarantee level between start-ups and established businesses, increasing awareness of the programme among target groups and removing sector exclusions (HM Treasury, 2003). The Government followed up on these recommendations in 2003. The programme is not able to reach micro-enterprises and the high risk ventures, such as seed and high technology firms. This simply suggests that commercial lenders operating loan guarantee schemes generally do not provide specialist expertise and may lack the skills needed to properly assess the higher risks and returns associated with equity investments. Thus, there is a limit to closing what is essentially an equity gap for high growth SMEs with loan guarantee schemes. Nonetheless, in countries where commercial banking sector is underdeveloped and more risk averse than those in developed countries, government loan guarantee schemes can be more effective in filling the gaps (Warwick, 2002).

A general assessment on loan guarantee schemes is not particularly encouraging. Most of guarantee schemes may not be sustainable without subsidy and they appear to have low volumes of operations and high operating costs (Gudger, 1998). In particular, there are a number lessons that can be drawn from past loan guarantee programmes. First, there must be a genuine market imperfection in providing credit to SMEs. Second, the programme needs to target a perceived market distortion and not the market imperfection in another market. Thus, the design of the programme has to be related to the source of credit market imperfections so as to avoid duplicating private sector financing. Third, lending banks should be required to assume the part of risk so that they would be encouraged to properly appraise loan applicants and discouraged to lend to overly risky borrowers or to reward good clients by substituting part of collateralised loans with the loan guarantee (OECD, 2003*d*). Third, evaluations need to consider entire costs of these programmes including set-up costs, subsidies and transaction costs. Fourth, benefits of these programmes including claimed additionality need to be properly assessed (Vogel and Adams, 1997). Lastly, loan guarantee schemes may not be particularly appropriate in dealing with risky projects since there is no possibility for financiers to share potential high upside return. However, they may be an appropriate instrument to deal with the specific problem of lack of collateral for an otherwise commercially fundable project of an equivalent risk (EC, 2001*b*).

Schemes to pool risks

There exists a unique two tier structure of credit supplementation for SMEs in Japan. The Credit Guarantee Corporations (CGCs) provide financial institutions with credit guarantees on the repayment of SME loans. In return, SMEs pay guarantee fees to CGCs to secure credit guarantees. These guarantees are insured by the Japan Small and Medium Enterprise Corporation (JASMEC) where insurance premiums are paid by CGCs. This premium rate is set at a low level in order to reduce the burden of the guarantee fee on SMEs. The credit insurance covers about 70%-80% of the guarantee and the remaining 20-30% is taken as a loss by the CGC. There are fifty two independent CGCs across Japanese prefectures, where each CGC has developed its guarantee activity in response to local economic conditions (JASMEC, 2001).

In a similar manner, Italy also has 680 *Confidi* (SME associations) operating at a local level. The *Confidi* provides guarantees to financial institutions on SME loans as well as supply their SME members with valuable business information. The *Confidi* is able to spread risks associated with SME loans through a large number of its members. In France, SMES, local SMEs also give loan guarantees to one another through 115 Mutual Guarantee Funds. The Funds are founded by SMEs on a voluntary basis to help satisfy the credit needs of other fellow SMEs (UNCTAD, 2001*a*).

Other Government Policies to Improve Financing Innovative SMEs

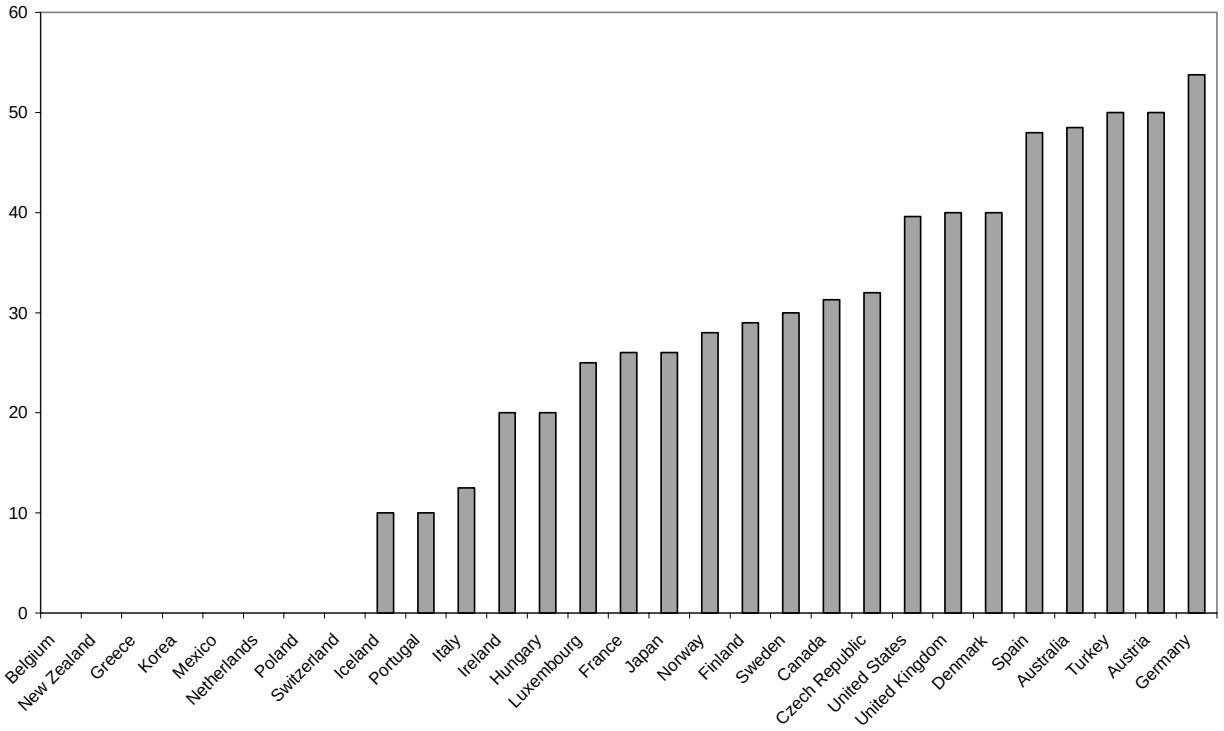
The Role of the Tax System

Traditionally, a number of countries have direct tax incentives to increase the supply of venture capital. The most generous venture capital tax incentives in Canada are associated with its LSVCCs, where investments in LSVCCs receive tax credits and qualify for tax deductions under the *Registered Retirement Savings Plan* (RRSP) rules. It had played the predominant role in raising venture capital from individuals in the first half of the 1990s. The United Kingdom provides tax relief to individuals or business angels who invest in ordinary shares of qualifying companies through the *Enterprise Investment Scheme* (EIS). The *Venture Capital Trust* (VCT) scheme in the United Kingdom also offers tax incentives to individuals investing in pooled investment funds, known as VCTs, which invest in unquoted companies. The comparison between the two schemes in the United Kingdom suggests that EIS appear to have been more effective in stimulating additional small investments and encouraging investors to make slightly larger investments than they would otherwise have done in the absence of the tax relief (Mason and Harrison, 1999). This is because VCTs only allow passive investors who do not contribute skills nor expertise to the investee businesses.

The role of capital gains tax rates in the venture capital industry has also been recognised as an important policy variable. Capital gains taxes can affect venture capital through both the supply of and demand for VCFs. The US experience indicates that an effect of capital gains taxes does not appear to be working through the supply side, but mainly through the demand side (Gompers and Lerner, 1998*b*; Poterba, 1989). This is because a significant portion of VCFs comes from tax-exempt investors in the United States who are not affected by changes in capital gains tax rate. Lower capital gains tax rates encourage a salaried manager or worker to become an entrepreneur and start his or her own business thereby increasing the demand for VCFs. In addition, high tax rates create a disincentive to realise the gain and reinvest the return to new projects. That is, high tax rates tend to 'lock-in' entrepreneurs who have the talent and eagerness to start new businesses. Capital gains tax rates vary widely across OECD countries ranging from exemption to a rate higher than 50% in Germany (**Figure 9**).

Chinese Taipei's 1983 legislation allowed up to 20 per cent tax deduction for individuals invested in qualified VCFs. This was also extended to corporate investors in 1991. It has been recognised that these tax incentives have had a positive impact on the growth of venture capital industry in Chinese Taipei. The government, however, terminated the program in 1999 on the basis of its conclusion that its venture capital industry was mature (Kenney *et al.*, 2002). Currently there is no capital gains tax in Chinese Taipei.

Figure 9. Individual capital gains tax rates, 2000 resident tax payers1

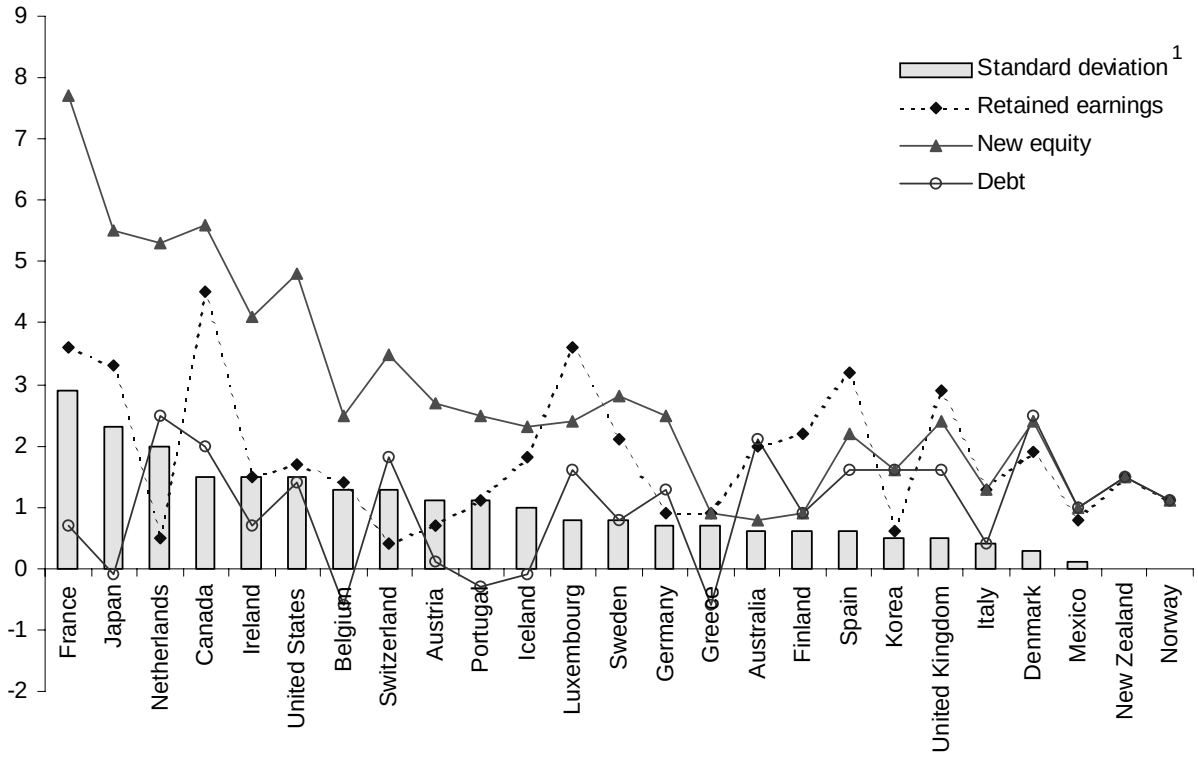


Note: 1. Short-term assets.
Source: Chen, Lee and Mintz (2002).

Israel's recent tax incentives exempt foreign investors from capital gains tax on investments in local VCFs and in high technology start-ups. At the same time, many Israel start-ups are incorporated in the United States to avoid a burdensome local tax system. It appears that there is a need for the tax system to treat domestic investors on an equal basis with foreign investors to avoid a possible capital flight (Baygan, 2003*b*).

Most tax systems in OECD and non-OECD countries are not neutral with respect to corporation financing decisions. Norway and New Zealand's tax systems, however, are based on the principle of fiscal neutrality between different sources of financing. Typically, interest payments to bondholders are deductible from taxable income, while dividend payments to shareholders are not deductible. Thus, corporations generally have tax incentives to finance their projects with debt rather than with equity in most OECD countries except Australia, Denmark and Finland (**Figure 10**). These tax incentives to issue debt generally favour large and established firms with collateral and proven track records. On the other hand, innovative SMEs face higher cost of financing investment projects by relying on equity financing under the tax system that favours debt financing. The tax system should avoid favouring debt finance over equity finance.

Figure 10. Marginal effective tax wedges in manufacturing by source of financing, 1999



Note: 1. The standard deviation across financing instruments.
Source: Van den Noord and Heady (2001).

Export Credit Schemes

Innovative SMEs are increasingly taking advantage of globalisation by expanding their markets abroad and importing best practices from abroad. However, SMEs, compared to larger firms, have a reduced capacity to meet regulatory requirements of importing countries as well as dealing with different business practices abroad. Moreover, weak discipline in terms of timely payment by importers is another potential impediment for SMEs to engage in exports since they tend to be more vulnerable owing to liquidity constraints. Thus, uncertainty associated with foreign markets and the inability to take countervailing measures can discourage SMEs including innovative ones from becoming globalised (OECD, 2001*b*). In addition, SMEs located in limited local markets must have a global outlook to improve their growth opportunities.

Many OECD countries have introduced special SME provisions in export credit systems to encourage the globalisation of small exporters. Examples include information programmes, streamlined or simplified application procedures, special export insurance and guarantees (OECD, 2002*d*). An export credit basically insures or guarantees against defined payment risks for exports sold on deferred payment. Export credits are generally granted as short-term (under two years), medium-term (two to five years) and long-term (over five years) credits. They can also be supplied as *supplier credits*, extended by the exporter, or *buyer credits*, where the exporter's bank or other financial institutions lend to the importer (or its bank). Thus, export credit schemes can potentially reduce potential risks faced by exporting SMEs. However, as with any other government programmes, costs of export credits schemes need to be carefully weighed against their benefits.

Other Issues

Consolidation in the Financing Sector

The ongoing consolidation in the financial services sector during the 1990s in developed countries led to the creation of large and, in some cases, complex financial institutions. This has raised concerns about the possibility of reduction in credit flows to SMEs due to the decreased number of small banks that specialise in SME lending.

There are two arguments why this could occur. First, larger and more complex credit institutions tend to make fewer smaller business loans per dollar of assets compared to smaller banks. Thus, consolidation resulting in a smaller number of large banks can adversely affect small business loans. Second, consolidation may disrupt credit relations damaging credit flows to relationship dependent SMEs (Group of Ten, 2001). However, these two channels only consider the first round static effects. What is more important is the effect of consolidation on the overall availability of credit to small businesses and whether consolidation results in a more accurate pricing of risk in financial markets.

In order to assess properly the overall impact of consolidation on SME financing, a number of offsetting effects need to be considered. First, the reduction in the amount of small business lending by merged banks could be offset by existing rival banks expanding their loans to small businesses or new entrants in the same local market to take advantage of new opportunities (Berger *et al*., 1998). Second, increased size in credit institutions as a result of consolidation has the potential to lower overall lending costs, both through diversification and the economies of scale benefiting SMEs as well. Third, reductions in lending to SMEs as a result of consolidation could also be the consequence of the elimination of previously inefficient loans, *i.e*., those funding negative net present value projects. Lastly, financial service industry consolidation may also encourage the development of alternative sources of financing for SMEs. For instance, if consolidation encourages the development of a market-oriented financial system from a bank-oriented system, this could mean an increase in the menu of financing options available for firms. In conclusion, the impact of consolidation on the supply of credit to SMEs is mainly an empirical question.

The available empirical research literature suggests that concerns about the effect of bank consolidation on small business loans may have been overstated. Most studies for the United States indicate that loan market concentration and bank consolidation did not adversely affect small business loans. Other banks and new entrants tend to offset the reduction in the supply of small business credit by the consolidated credit institutions (Berger et al., 1998; Black and Strahan, 2002). Similar findings are observed for Italy, although there appears to have been a shift away from low quality relationship based loans (Bonaccorsi di Patti and Gobbi, 2001). A recent French banking industry consolidation appears to have had no significant negative effect on SMEs' credit availability (Dietsch, 2003). The consolidation was accompanied by a better risk diversification in business loan portfolios and an increase in multiple banking by SMEs. However, these findings cannot be generalised for other countries since the effect of consolidation also depends on the financial system of a country as well as the prevailing macroeconomic environment. For instance, the availability of non-bank sources of funding to SMEs such as equity finance, trade credit could also affect the impact of consolidation.

Capital Adequacy Rules

The Basel Committee on Banking Supervision introduced the 1988 Capital Accord to ensure safety and soundness of global financial systems. The Accord established internationally active banks to hold at least eight per cent of capital to a basket of assets to minimise risks associated with bank insolvency (BIS, 2001). However, financial systems and economies have undergone significant transformation since the 1988 Accord necessitating a new framework. The Basel Committee is revising a now out-dated

international agreement to better reflect the transformations that have taken place in financial markets and banking businesses. In particular, the New Accord will be based on a more risk-sensitive framework where banks themselves will be encouraged to identify, measure and manage their risks. Under the proposals in the New Accord, ratings are not only to be provided by external credit assessment institutions, but they also can be assessed internally subject to strict methodological and disclosure standards (BIS, 2001).

The New Accord, which will be more sensitive to risks, has raised concerns among small business operators and policy makers since there was a possibility that the New Accord may reduce loans to SMEs. Specifically, a more risk sensitive (*i.e.* more refined categories of assets) framework is likely to raise capital requirements of banks that hold SME loans since they are understood to be more risky compared to those of larger enterprises.

To ensure a more appropriate treatment of SMEs, the Committee approved special provisions related to SME lending. Under the internal rating based (IRB) approach, banks will be permitted to distinguish SME borrowers (those with less than Euro 50 mn in annual sales) from large enterprise borrowers. SME loans with corporate exposure will be assessed lower capital requirements than loans to larger enterprises with otherwise similar characteristics. The reduction in the amount of required capital can be as high as twenty per cent, depending on the size of the borrower. In addition, under certain circumstances, banks may treat SME loans as retail loans (which has a flatter risk weight curve) provided that the total exposure of a bank to an individual SME is less than Euro 1 mn (BIS, 2002*a*; Hommel and Schneider, 2003). Although these provisions have potential to mitigate high risk ratings associated with SME loans, it is still too early to know how financial institutions would respond to these provisions in determining the risk-weighted assets requirements. Moreover, there is no distinction between SMEs and innovative SMEs under the proposal. Thus, capital adequacy requirements could still penalise banks for lending to innovative SMEs that do not have enough collateral.

Finally, little is known about the impact of the most recent proposals on SMEs in developing countries and the extent to which such proposals may affect equity venture capital funds.

III: POLICY AREAS AND RECOMMENDATIONS

Policy Areas

Policies to reduce financing gaps faced by innovative SMEs can be broadly framed into three areas. First is to ensure the operation of efficient financial markets so that deserving innovative SMEs have access to a reasonably priced credit. Second is to reduce uncertainty and risks associated with financing innovative SMEs. Third is to reduce information asymmetries between innovative SMEs and potential investors, through mainly the development of an expert intermediary sector.

Efficient financial markets:

- There needs to be a viable equity market. Governments need to ensure that the requirements for the existence of a viable equity market are in place. These requirements include: an adequate supply of well trained fund managers who can properly access the risk profile of innovative SMEs; a viable exit mechanism such as secondary stock markets where investors have potential to reap high rates of return on their investments; investment regulations that are flexible enough to allow institutional investors to participate in the equity financing of innovative SMEs. For transitional and less developed countries, creating an efficient and liquid equity market takes time. In this case, innovative SMEs need to result to government programmes, bank loans or foreign equity markets for financing.

- In addition, it is important that investors are able to evaluate the nature and quality of the assets that innovative SMEs create and develop. Innovative SMEs should aim to develop a reporting system that elaborates as much as possibly about the nature of their intangible assets (skills, intellectual property rights, etc.). Such qualitative information can be very valuable for investors and therefore as a way of mitigating the asymmetry of information between the provider of finance and the entrepreneur.

- Encourage the formation of a common stock market in partnership with other countries. Stock markets in small economies or in less developed countries tend to be small and lack liquidity

- Ensure a stable competitive banking industry. Through a proper regulatory framework, governments need to encourage commercial banks to make their fair credit available to innovative SMEs. In addition, governments with central banks can increase transparency of lending practices by commercial banks as a form of moral suasion.

- Strengthen the capacity to evaluate innovative SME credit worthiness. Governments can encourage the use of information technology and statistical tools by financial institutions to strengthen the capacity to evaluate innovative SME credit worthiness. Furthermore, governments need to ensure that there is an adequate supply of well qualified personnel who could evaluate loan requests by innovative SMEs.

Reducing uncertainty and risks associated with financing innovative SMEs:

- Effectively manage public sector loan guarantee or equity guarantee programmes. Public sector loan guarantee or equity guarantee programmes can be used to reduce risks associated with financing innovative SMEs. However, it is more effective as a supplement to private sector capital and with private sector management of pooled funds or loans. Moreover, there should be scope for the private sector to share both downside risk and upside return.

- Institute privately led insurance schemes for innovative SME loans. Governments can encourage the formation of small business associations that can provide an insurance (or guarantee) on bank loans to their members. These associations would be able to spread out risks associated with SME loans through a large number of its members.

Alleviating informational asymmetries between innovative SMEs and potential investors:

- Support the formation of BANs. Governments can support the formation of BANs to bring together private investors with entrepreneurs. Moreover, international co-operation in business angel markets may provide a further scope for sharing experience and knowledge as well as expanding investment opportunities.

- Improve the transparency of corporate performance, especially in less developed countries. This would help overcome information asymmetries between borrowers and financial institutions.

- Increase access to global capital markets. Governments can help provide information on raising funds in global capital markets and support the formation of transnational business networks.

- Improve information on the creditworthiness of potential borrowers, by promoting the establishment of credit bureaux and help SMEs prepare business plans and financial projections.

- Help SMEs to better understand the financing options available including existing government programmes and become better prepared to take on an investment. There is some evidence that SMEs fail to utilise existing programmes suggesting that they suffer from the general lack of information on the part of SME management.

There are already a large number of government programmes to deal with SME financing constraints. These programmes are often characterised by overlap, fragmentation and competition among managing agencies. Before establishing new programmes, the possibility of incorporating new objectives into existing programmes should be considered (OECD, 2003*d*). Moreover, these programmes should have monitoring mechanisms and evaluations embedded in their frameworks. In particular, they need to have a sun-set clause to allow for the termination of the programme once conditions for private sector funding improve.

However, the most fundamental question that these programmes do not address is whether there is sufficient expertise to intermediate between sources of capital and innovative SMEs. This issue is of critical importance because for these types of investment, the investor does not simply sit back and wait for returns to appear – there needs to be active involvement in the development of the firm. Without this active involvement, investors perceive high risks and low returns from investment and entrepreneurs find

themselves unable to raise capital. Entrepreneurs are therefore discouraged from applying for finance and costs of finance appear high. Therefore entrepreneurs and finance are apparently both in short supply.

Furthermore, one of the ways in which investors become actively involved is through financing instruments that allow them to exercise considerable control. Not only do they take seats on the boards of firms but finance is staged and made conditional on performance in previous periods. Mixed equity and debt contracts, such as preferred equity and convertible debt, are used that allow investors to take control in the event of corporate performance being poor. The financing of early stage investments therefore has features of both debt and equity. It is therefore misleading to see the problem as being a demand for or supply of finance problem or an equity as against a debt one. To the extent that there is a problem it is one of fusing entrepreneurship and finance – hence the need to ensure the development of the necessary skills for evaluating and monitoring companies as it is critical to the efficient allocation of resources.

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