

# **A Policy Perspective On the USA Risk Capital Market**

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## **INTRODUCTION**

### **The International Consortium on Entrepreneurship (ICE)**

The International Consortium on Entrepreneurship (ICE) is a group of six leading entrepreneurial countries, which meets twice a year to compare entrepreneurship policies.

The group includes policymakers and lead researchers from Canada, Denmark, Finland, Netherlands, Norway and the USA, with the OECD as an observer. Members decide annually on new projects.

In 2006, the consortium decided to explore venture capital (referred to as risk capital below) policies, data and definitions.<sup>1</sup> As a result, the ICE Risk Capital Policy--Data Project was launched in 2007.

### **The ICE Risk Capital Policy and Data Project**

The ICE Risk Capital Policy -- Data Project is designed as a two-track project. The first track aims at comparing and learning from leading entrepreneurial countries and their policy experience in the field of risk capital. Thereby, the project tries to respond to policy makers across ICE countries and their need for a better understanding of countries' risk capital policy activities and experience.

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<sup>1</sup> As venture capital definitions vary between countries and regions, the Entrepreneurship Indicator Programme at the OECD has compared definitions in order to create a common language. This project uses "risk capital" to refer to both business angel as well as traditional venture capital investment (seed, start-up and expansion stages). When using the term "venture capital" in this report, the authors refer to the American definition, that is investment in seed, start-up and expansion stages not including business angel investment.

The second track strives at creating a common language by exploring and comparing risk capital definitions across the ICE countries; the final outcome will summarize and compare results.

### **The U.S. Policy Study**

The U.S. risk capital market is the world's largest in terms of invested capital and one of the oldest markets with activity dating back to the 1940s. As a result, many countries look to the USA when wishing to learn from peer markets. Policymakers have asked questions such as why is the risk capital market so progressive in the USA; has it been fuelled by the private sector alone; or did the public sector play a significant role? If so, what type of policy instruments have been used to address the market?

There seem to be varied opinions based on who is asked. It has been perceived by many outside as well as inside the USA that the venture capital industry has developed without much involvement from the public sector. But to what extent is this correct? This policy paper aims at providing an overview of the public involvement in the USA, mainly on a federal level but also to some extent at the state level. Thereby looking at what role the public sector actually played in risk capital activities and eventually what role it plays today.

The report summarises the results of a policy mapping conducted by FORA in collaboration with the U.S. Department of Commerce. Due to time restrictions, this policy mapping will be more concise compared to the other ICE Risk Capital country studies and has only a limited number of interviews with policymakers and experts.

Moreover, rather than making a lengthy description of the development in market activities, focus is on exploring the public sector's role. Still, the objective of the mapping is the same and the results of the U.S. study will be compared with the results of the other ICE national studies.

### **Report Outline**

The report is structured in the following way. First, there is a short introduction to the U.S. market activities with emphasis on the various market players. This is followed by a discussion of the public sector's role in the U.S. risk capital market.

## **The Investment Policy Model**

Risk capital activities vary between countries, and different governments have applied different policies to fuel investment in high-risk entrepreneurial firms.

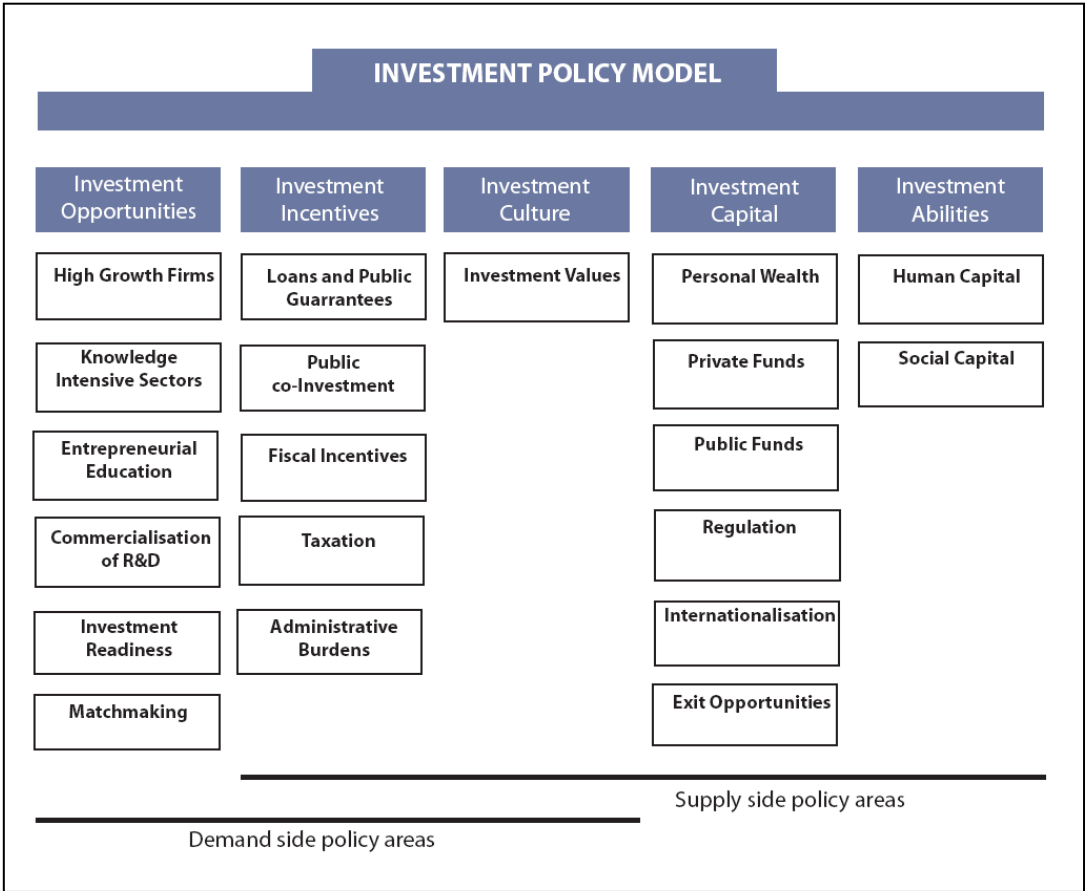
The U.S. risk capital policy mapping is based on the analytical framework as shown in the Investment Policy Model (IPM). The ICE has developed the Investment Policy Model, which lists some possible policy areas through which governments can intervene in the risk capital market. It should be noted that the IPM is not meant to make recommendations about which policies should or should not be used by governments in their intervention nor does the model set out to evaluate implemented policies. The aim of applying this model is mainly to map and organise the range of possible policy actions, which are found in the ICE countries and compare similarities and differences in these actions.

According to the Investment Policy Model, a country's risk capital activity can be influenced through mainly five types of policy categories (and 20 policy areas) including:

1. Investment Opportunities (High Growth Firms, Knowledge Intensive Sectors, Entrepreneurial Education, Commercialisation of R&D, Investment Readiness, Matchmaking)
2. Investment Incentives (Loans and Public Guarantees, Public Co-Investment, Fiscal Incentives, Taxation, Administrative Burdens)
3. Investment Culture (Investment Values)
4. Investment Capital (Personal Wealth, Private Funds, Public Funds, Regulation, Internationalisation, Exit Opportunities)
5. Investment Abilities (Human Capital, Social Capital).

The five policy categories in the Investment Policy Model can be divided into supply or demand side categories depending on their orientation towards either the entrepreneurial firms (demand side) or the investors (supply side). While some policies address only the entrepreneurial firms or the investors, others can be used to target both the supply and demand sides.

Table 1: The Investment Policy Model\*



\* Note: The Investment Policy Model does not provide a complete overview of the total set of policy actions used to address the field of entrepreneurship. It focuses on the set of possible policy actions related to the development of risk capital activities. The possible policy actions are organised around five policy categories including investment opportunities, incentives, culture, capital and abilities.

Source: FORA 2006

According to the Investment Policy Model, governments can target and influence the demand for and supply of risk capital through the following five policy categories:

1. Investment Opportunities targets only the demand side of the model – the entrepreneurs requiring capital for their ventures. This policy category includes policy areas aiming at strengthening the demand for capital. This includes enhancing a firm's growth potential, knowledge intensity, commercialisation of R&D, entrepreneurial education, investment readiness of investment-seeking firms and strengthening matchmaking opportunities between entrepreneurs and investors. In this way, governments can fortify the demand side by making it more investment-ready and hence more attractive for investors.
2. Investment Incentives can influence both the demand and supply side. The category represents the benefits as well as costs associated with making an investment. Areas that increase the average return on investments like public guarantee schemes and public co-investment schemes and fiscal initiatives represent the benefits. The costs are represented by taxation and administrative burdens. Both factors could reduce the return on a given investment and thereby reduce the incentives to invest.
3. Investment Culture is related to a country's investment culture and tradition and is viewed as relevant for both the demand and supply side. Government can enhance a certain investment culture through supporting investment campaigns and other awareness activities for entrepreneurial firms as well as investors.

4. Investment Capital is merely an investor category and represents the actual supply of risk capital, which can come from various sources such as private individuals, public investors, private and institutional funds. Furthermore, informal and formal types of investors can supply the capital. This policy category includes the size of the available capital and the regulatory framework affecting the supply of capital. In addition, the capital can be raised among national and international investors. Governments can influence the size of available risk capital by providing incentives for certain investor types to engage in the market or by simply providing capital themselves. Finally, exit possibilities are also included as they represent a source of capital. Promising exit opportunities affect investor's willingness to provide capital in the first place.
  
5. Investment Abilities refer to investors' human and social capital, including investor background and access to investor related networks and associations. Governments can influence the investor's investment abilities through training, courses and diverse networking activities.

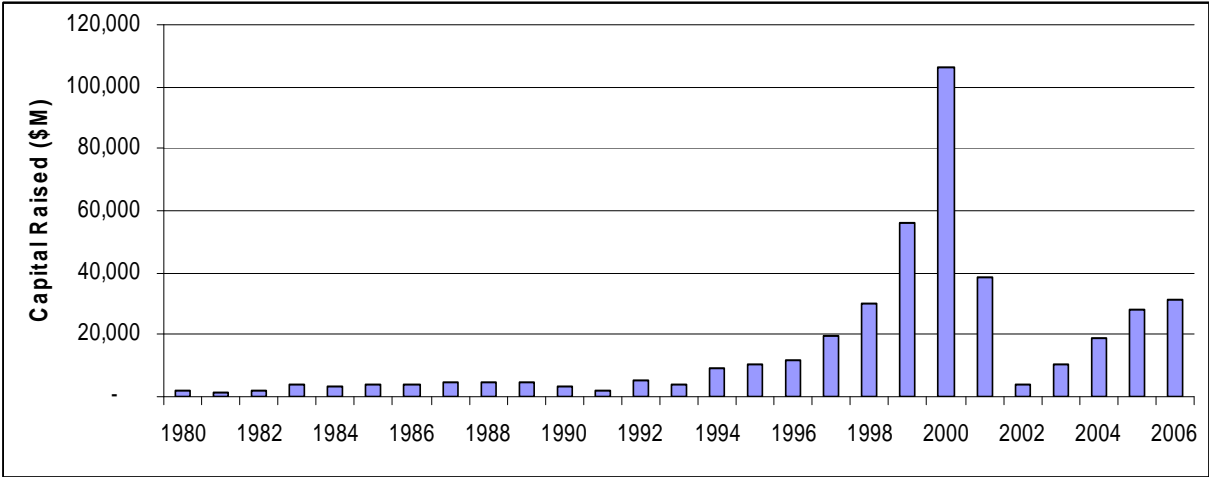
The policy mapping will show to what extent a government is currently active in one or more of the policy categories and areas. It is not as such given that governments should play a role in any/all of the policy areas and none of the policy areas are initially viewed as being more efficient than others. However, by comparing the policy experience from all the ICE policy mappings, the different governments' policy approaches are discussed in the later work.

## **THE U.S. RISK CAPITAL MARKET**

**Overview**

The U.S. risk capital market is both the largest and oldest in the world. In the last 35 years, venture capitalists invested more than \$441 billion in over 57,000 companies.

*Figure 1: Venture Capital Raised by Market, \$M*



Source: SBA, 2007

The market peaked in the late 1990s and early 2000 with large sums of invested capital every year. The investment dropped dramatically in 2001 as the market was hit by a downturn.

*Table 1: The U.S. Venture Capital Investment*

Year	Total sum invested (USD Mil)	Number of deals
2000	105,008	7,903
2001	40,610	4,475
2002	22,030	3,091
2003	19,744	2,929
2004	22,446	3,079
2005	23,066	3,149

2006	26,612	3,650
2007	30,529	3,912

Source: NVCA MoneyTree, 2008

**Venture capital by source**

Traditionally, the U.S. market includes a varied and matured pool of investors ranging from informal investors such as organized business angels, public and private funds to a heavy involvement of pension funds and University Endowments.

**Business Angels**

Business angels in USA play a significant role as sources of finance for young firms. Despite difficulties in measuring the informal market, market estimates exist.

The SBA estimates there are 250 000 angels in the United States committing USD 20 billion each year to over 30000 private companies. Compared to the formal venture capital industry, business angels invest smaller amounts, in the range of USD 200 000 to USD 1.5 million in early-stage companies preferably within geographic proximity (SBA, 2000).

According to the Centre for Venture Research at the University of New Hampshire, total investments in 2007 were \$26.0 billion, an increase of 1.8% over 2006. However, a total of 57,120 entrepreneurial ventures received angel funding in 2007, a robust 12.0% increase from 2006, and the number of active investors in 2007 was 258,200 individuals, an increase of 10.3% over 2006. The modest increase in total dollars, coupled with the increase in investments and more angels participating, resulted in a smaller deal size for 2007. In contrast to venture capital, in which money must be invested during the life of the fund and is in part

based on the size of the fund, angel investing is an individual decision and angels invest from their net worth.

### **Pension Funds**

Pension funds play a significant role in the market providing around 42% of invested capital, which is the highest among the OECD countries.

### **University Endowments**

Unlike other markets a significant player in U.S. risk capital is university endowments, the largest of which is Harvard University at \$34.9 billion. Many smaller universities have endowments in the range of \$500 million to \$1 billion. Endowments are known to allocate slightly more aggressively toward alternative investments such as risk capital. In some cases 15-20% can be allocated toward private equity of which 5% could go to venture capital.

### **Banks as Institutional Investors**

Based on the findings of recent industry studies by the Harvard Business School, venture capital has historically represented approximately one-quarter of the bank institutional investors' portfolios.

Overall, based on additional supervisory sources that identify participating foreign institutions and banks with smaller portfolios, more than 100 domestic and foreign banking organizations report holding or controlling equity investments in nonfinancial companies -- directly in nonfinancial companies, through third-party funds, and/or within proprietary managed fund vehicles.

### **The Geographic Spread**

The geographic concentration of risk capital investment is immense. The top ten states for VC investment in 2007 were: California; Massachusetts; Texas; Washington; New York; Pennsylvania; Maryland; Florida; New Jersey; and North Carolina.

## **THE ROLE OF THE PUBLIC INTERVENTION IN THE USA**

### **Overview**

The origins of the U.S. venture capital industry can be traced to the creation of American Research and Development (ARD) in 1946. ARD was a publicly traded, closed-end company investing in high-risk small firms that commercialised technologies developed for World War II.

However, attempts from the public sector to set the general framework for investment were done earlier. The first public initiatives date back to the 1930s and the public sector have played a role in fuelling risk capital investment since (Box 1).

Although the limited partnership organisational structure emerged in the United States in 1958, the pool of investors that could invest in risky assets was highly restricted. During the 1960s, venture capitalists raised funds mainly through closed-end companies such as ARD as well as the government *Small Business Investment Company* (SBIC) program which provided equity financing to new high-growth firms (Gompers and Lerner, 2001).

In the 1970s, venture capital activity was depressed by a weak stock market, high taxation of capital gains and a global economic recession. To revitalise the venture capital industry, the US government undertook regulatory and tax changes. Capital gains tax rates were reduced. The clarification of the Employee Retirement Income Security Act's (ERISA) "prudent man" rule allowed pension funds to allocate a small portion of assets to high-risk investments. These changes unlocked new capital sources for venture capital funds.

*Box 1: The Government's Role in Setting the General Framework for Risk Capital Activities in the USA*

1933:	The Securities Act
1934:	The Securities Exchange Act
1938:	Secondary market for residential mortgages (not a direct risk capital instrument, but it became a major source of start-up capital for entrepreneurs)
1939:	GAAP regulations
1953:	SBA's Guaranty Loan Program
1958:	Small Business Investment Company Act (SBIC)
1971:	Creation of NASDAQ by the SEC
1974:	ERISA
1976:	Hart-Scott-Rodino Act
1977:	FASB treatment of "pooling" of assets
1978:	Liberalization of bankruptcy system
1978:	Revenue Act cuts capital gains rates
1980:	ERISA regulations re: pension fund investment in high risk ventures ("Prudent Man Rule")
1980:	DOL gives VC's "safe harbor" exemption from ERISA
1980:	Business Investment Incentive Act
1980:	Bayh-Dole Act giving universities control over their inventions and research
1982:	Small Business Innovation Development Act, the Small Business Innovation Research (SBIR)
1986:	Tax Reform Act
1996:	Adoption of Uniform Blue Sky Law Creating Financial Markets to Fund Entrepreneurial Growth Companies
2002:	The Sarbanes-Oxley Act of 2002 legislation
2004:	SBIC Redesign

Source: The National Commission on Growth, 2002

To attract the growing national venture capital pool during the last two decades, several states have also provided generous fiscal incentives and created venture capital programs, with varying degrees of success. Despite boom and bust periods in U.S. venture capital markets, these federal and state programs have largely been maintained at their original levels.

In the following, the various public sector initiatives have been grouped according to their objectives. They are as follows:

- Facilitating New Funds
- Encouraging Pension Funds
- Attracting Business Angels
- Providing Tax Incentives
- Ensuring Exit Markets
- Stimulating Innovation among Entrepreneurs

### **Facilitating New Funds**

According to Murray & Dimov (2004), the “single most common contemporary policy response” is based on the experience with the U.S. government’s Small Business Investment Company (SBIC) programme. Before SBICs, few knew what venture capital investing was and some claim that SBICs put venture capital into today’s national vocabulary.

The U.S. Small Business Investment Act of 1958 authorized the formation of SBICs as a hybrid scheme of venture capital and private funding for the purpose of investing in small firms of all types (Box 2). An SBIC is a privately managed firm and acts as an intermediary between large investors and the small enterprises targeted by the scheme.

*Box 2: SBIC Program Overview*

The Small Business Investment Company (SBIC) program is one of many financial assistance programs available through the U.S. Small Business Administration such as the SBIR.

The mission of the SBIC program is to support small business and the national economy by stimulating the flow of private equity capital and long term loan funds to small businesses nationwide.

The U.S. Small Business Administration does not invest directly into small business through the SBIC Program, but provides leverage to qualified and certified investment funds.

The SBA supplements private capital with two types of "Leverage". First, it can issue debentures. Secondly, it can issue participating preferred securities. The securities are pooled and trust certificates are issued. Institutional investors purchase trust certificates. SBA guarantees full repayment of principal and interest with the full faith and credit guarantee of the U.S. Government.

The structure of the program is unique in that SBICs are privately owned and managed investment funds, licensed and regulated by SBA, that use their own capital plus funds borrowed with an SBA guarantee to make investments in qualifying small businesses.

A licensed SBIC in good standing, with a demonstrated need for funds, may receive leverage up to two times its private capital, but no fund management team may exceed the allowable maximum amount of leverage, currently \$130 million. Once leverage is committed to an SBIC, it may be drawn down on a periodic basis over the entire 4 to 5 year commitment period. SBICs may invest only in qualifying small business concerns as defined by SBA regulations.

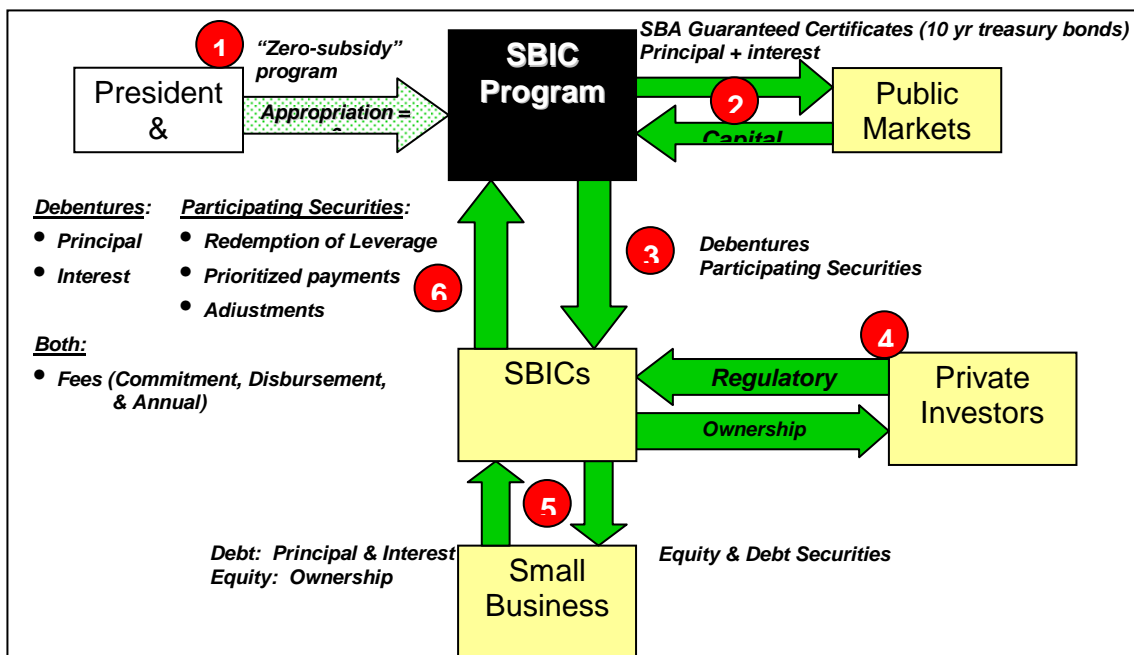
Over the past 40 years, the SBIC program has provided approximately \$27 billion of long-term debt and equity capital to nearly 90,000 small U.S. companies, with \$5.5 billion invested in 3,060 small businesses in 2000 alone.

In 2007, SBIC financings totalled \$2.7 billion (Figure 4) and 2,057 companies benefited from SBIC financing. 33% of SBIC financings went to companies less than 2 years old and 13.2% of SBIC financings were made to "Competitive Opportunity Gap Businesses".

For more information on the SBIC program please visit, [www.sba.gov/inv](http://www.sba.gov/inv).

Over the years, the SBIC has been redesigned and improved. Through the SBIC programme, the public sector facilitates around 1/10 of the total market investment. In 2004, the SBIC programme provided 11.2% of all venture financing (SBA, 2005).

Figure 3: The SBIC: a zero-subsidy programme



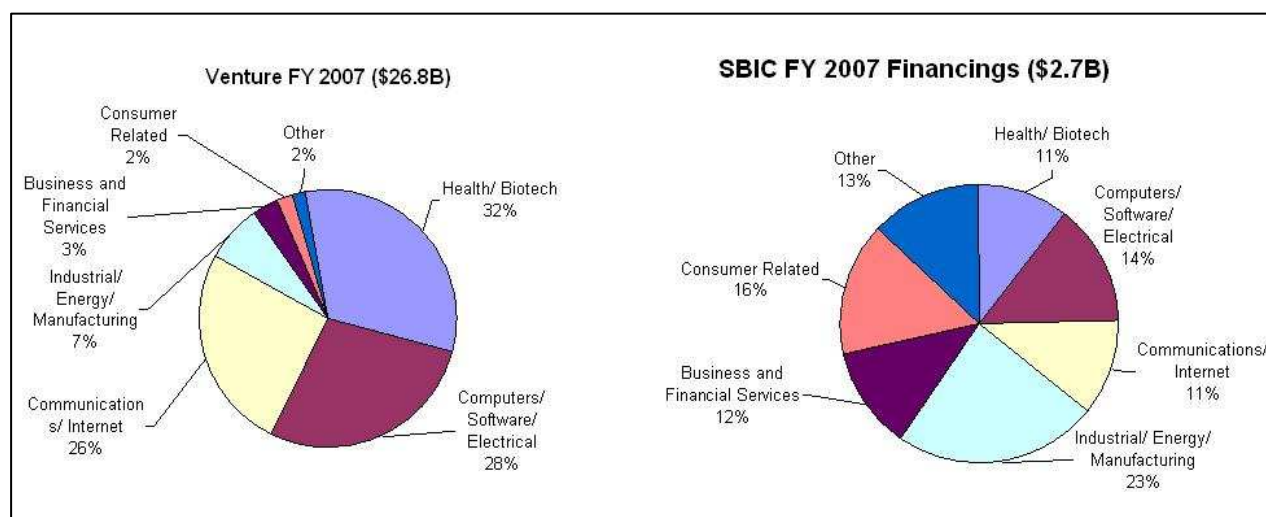
Source: SBA, 2005

The SBIC is designed as to provide new certified investment funds (SBICs) with leverage capital, which is obtained by selling treasury bonds on the public markets. These bonds are guaranteed by the federal state, and this guarantee is the only guarantee issued by the federal state in relation to the SBIC. It is important to underline that it is a zero-subsidy programme, with no cost to the federal state.

The SBICs differ from traditional venture funds in several ways. First, traditional venture capital is heavily concentrated in only a few states. The SBIC investment funds are spread out and therefore result in geographically diversified investing across the USA. That way, states with little or no venture investment activity can benefit from the programme.

Secondly, overall SBIC's do more transactions in the range of \$500K to \$3 million, which is above the business angel segment and below non-SBIC venture funds. Thirdly, 20% of the total dollars must be invested by SBIC's in smaller companies. Smaller companies are defined as not more than \$6 million of net worth, with net income not more than \$2 million averaged over prior two years. In addition to geographic diversity, it seems the United States also accomplishes racial diversity as SBIC's are known for investing in minority owned enterprises.

Figure 4: VC investment pr. sector, private and public, 2007



Source: SBA, 2007

Fourth, SBIC invest in sectors such as industrial/energy/ manufacturing and consumer related, which are less invested in by the larger venture capital funds (Figure 4).

Over the years, the SBIC programme has enabled new fund manager teams and thereby enabled development of talent for the U.S. venture capital market. As the venture capital industry evolved, the system of fund managers has otherwise been described as a “guild”. Existing fund managers teach others within their network or families as a sort of “guild apprenticeship”.

On the other hand, for many newcomers it was a challenge to enter the market. But in the early years, the SBIC programme allowed investment managers with little experience to become SBIC fund managers. Despite the risk of such a set-up, this helped develop new investment talent in a huge market where talented investors are in demand. Today the programme has much stricter experience criteria for investment managers.

However, it could be argued that the SBIC programme has its flaws too. Together with the rest of the market, the SBIC programme lost large amounts of capital during the downturns. Moreover, some say that the programme doesn't do enough to encourage growth on firm level. It provides capital without segmentation in terms of growth, and the companies have only little incentive to grow as capital is provided to firms of certain sizes.

Although the federal government does not invest directly through the SBIC programme, this is not the case for the state governments. Some states are known to invest directly through venture capital funds to facilitate the development of local businesses. "The National Association of Seed and Venture Funds (NASVF) is an organization of innovation capital leaders including private, public and non-profit organizations committed to building their local economies by investing in local entrepreneurs." Members are private, public or semi public funds investing in entrepreneurs locally. NASVF is made up mostly of so-called "fly-over states", where venture capital is not well developed by the private sector.

Over the years, public investment funds faced several challenges. For instance, programmes which lacked political support could not attract experienced fund managers; or had insufficient deal flow to effectively spread risk.

On the other hand, successful public programs benefited from political and business support as well as existing clusters of high-technology firms (Heard and Sibert, 2000). These state programs may be contributing to regional imbalances in venture investing.

### **Encouraging Pension Funds**

But there were still hurdles to overcome as many funds were faced with the challenge of raising sufficient capital. In response to this, a new regulation was put in place. The Department of Labor issued new regulations under ERISA to allow public pension funds to invest a small portion of their assets in high-risk ventures, as part of prudently managed diversified-portfolio (Box 3).

The impact of this seemingly tiny change was immediate and enormous. Whereas venture capital funds had raised a paltry \$5 million a year from pension funds from 1976 through 1978, they raised ten times that amount—\$50 million—in just six months in 1979 (National Commission on Entrepreneurship, 2002).

*Box 3: Strengthening Pension Fund Investment through Prudent Man Rule, 1978*

In the United States, pension plans were traditionally prohibited from making risky investments or they are subject to quantitative ceilings on these investments in order to protect beneficiaries.

In 1978, U.S. legislation loosened these restrictions in applying a revised and restated version of the “prudent man” rule to pension plans. Pension funds could invest in new companies and venture capital funds, and fund managers did not assume fiduciary responsibility for these investment decisions.

According to the new rule, investments would be managed “*with the care, skill, prudence and diligence under the circumstances then prevailing, that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims*”.

This suggested that an investment position imprudent in isolation may be acceptable in a portfolio context.

In 1980, changes were made to the ERISA “safe harbor” rule to define pension funds legally as limited partnerships, further reducing the legal oversight and potential liabilities of venture capitalists (OECD, 2001).

Today pension funds in the USA continue to play a very important role as supplier of venture capital.

### **Attracting Business Angels**

When entrepreneurs need more than \$300,000 but less than \$3,000,000, individual investors such as business angels play a big role. For example, consider that in 1999, while institutional venture capital funds invested \$46 billion in entrepreneurial firms, private investment by individuals amounted to more than \$63 billion. One policy that led to such a robust individual investor market to fund early-stage entrepreneurial firms was the favourable capital gains tax rate.

Before 1978, when founders, managers, employees, individual investors, and even suppliers and customers of entrepreneurial companies cashed out of their investments, they were subject to dramatically fluctuating capital gains tax rates. But after 1978, the fundamental tenet that capital gains on these stock sales should be taxed at rates lower than ordinary income rates started to take hold. Observers say that creating a differential between capital gains and ordinary income rates was instrumental in changing the attitudes of potential investors—creating a mind-set that successful investments in entrepreneurial companies offered extraordinary returns (National Commission on Entrepreneurship, 2002).

One way of organising and gathering business angels is through business angel networks. In the mid-1990s, informal networks of angel investors started to assemble, such as the *Band of Angels* in Silicon Valley and the *Dinner Clubs* in the mid-Atlantic region. In 1995, the SBA introduced the Angel Capital Network or *ACE-Net*, which linked individual investors, SBICs and institutional venture capitalists with small firms through an

Internet database. Mentoring services for entrepreneurs and investors are also provided through regional *ACE-Net* operators.

In 2001, *ACE-Net* was privatised as the government's role had been accomplished. Recently, the SBA developed the Technology Network or *TECH-Net*, a search engine for information and resources concerning small high-technology businesses.

### **Tax incentives**

Venture capital investment in the United States has been stimulated by both low capital gains tax rates and targeted tax incentives. The capital gains tax rate went from a high of 49% in 1978 to 20% between 1981 and 1986, and 15% currently. This has had significant influence on the development of the U.S. venture capital industry.

Specific fiscal incentives for venture investments have been more common at the state than the federal level. For example, Maine and Ohio offer tax credits to business angel investors. Indiana, Vermont and West Virginia give tax credits to investors in qualifying venture capital partnerships, ranging from 20% to 30% of the amount invested.

The most generous tax breaks are given to insurance companies, which receive tax credits equal to 100% to 120% of the amount they invest in entities designated "*certified capital companies*" (CAPCOs). A CAPCO is a for-profit business organised to provide venture capital funds to "qualified" local businesses (whose definition differs by state) in the attempt to create new local employment opportunities. This program originated in Louisiana, but other states including Colorado, Florida, Louisiana, Missouri, New York and Wisconsin have similar schemes, which are perhaps the

most generous fiscal incentives to venture investing in the OECD area. To date, the positive impact of these measures has been hard to quantify.

As the NASDAQ was critical to IPOs, so were tax laws, financial accounting standards, and antitrust regulations critical to the second, and more often used, path to investor liquidity—acquisitions. The tax-free reorganization provisions of the Internal Revenue Code, the treatment of the "pooling" of assets by the Financial Accounting Standards Board (FASB), and the available exemptions from antitrust review under the Hart-Scott-Rodino Act, all made the acquisition of entrepreneurial companies attractive to larger companies. And it was primarily through acquisitions that investors, employees, and suppliers owning stock in entrepreneurial companies realized the accrued value of their holdings (National Commission on Entrepreneurship, 2002).

### **Exit Markets**

Another important aspect in the public involvement was creating an alternative stock market for those companies not able to go on the New York Stock Exchange.

The National Association of Securities Dealers Automated Quotation (*NASDAQ*) was created in 1971 and outpaced all other U.S. markets in IPO listings.

The *NASDAQ SmallCap Market* was introduced in 1992 to handle even smaller IPOs. The creation of NASDAQ constituted a lynchpin of the financial market infrastructure that funds entrepreneurial firms. Because the firms with intangible assets, no or low earnings, and very short track records could not meet the strict listing requirements set by the NYSE.

NASDAQ gave these firms access to an initial public offering market for the first time (National Commission on Entrepreneurship, 2002).

### **Stimulating Innovation among Entrepreneurs**

Created in 1982 through the Small Business Innovation Development Act, the Small Business Innovation Research (SBIR) is the nation's largest innovation program.

SBIR offers competition-based awards to stimulate technological innovation among small private-sector businesses while providing government agencies new, cost-effective, technical and scientific solutions to meet their diverse mission needs.

The program's goals are four-fold: "(1) to stimulate technological innovation; (2) to use small business to meet federal research and development needs; (3) to foster and encourage participation by minority and disadvantaged persons in technological innovation; and (4) to increase private sector commercialization derived from Federal research and development" (The Small Business Innovation Development Act (PL 97-219)).

Eleven federal agencies are currently required to set aside 2.5 percent of their extramural research and development budget exclusively for SBIR awards and contracts. Each year these agencies identify various R&D topics, representing scientific and technical problems requiring innovative solutions, for pursuit by small businesses under the SBIR program. These topics are bundled together into individual agency "solicitations" - publicly announced requests for SBIR proposals from interested small businesses.

A small business can identify an appropriate topic that it wants to pursue from these solicitations and, in response, propose a project for an SBIR

grant. The required format for submitting a proposal is different for each agency. Proposal selection also varies, though peer review of proposals on a competitive basis by experts in the field is typical. Each agency then selects through a competitive process the proposals that are found to best meet program selection criteria, and awards contracts or grants to the proposing small businesses.

According to recent United States Office of Management and Budget (OMB) data, the SBIR and a sister program, the Small Business Technology Transfer (STTR) program annually provide contracts and awards worth over \$2.3 billion.

The SBIR grant-making process is structured in three phases:

- Phase I grants essentially fund a feasibility study in which award winners undertake a limited amount of research aimed at establishing an idea's scientific and commercial promise. The 1992 legislation standardized Phase I grants at \$100,000. Approximately 15 percent of all small businesses that apply receive a Phase I award.
- Phase II grants are larger—typically about \$500,000 to \$850,000—and fund more extensive R&D to develop the scientific and technical merit and the feasibility of research ideas. Approximately 40 percent of Phase I award winners go on to this next step.
- Phase III is the period during which Phase II innovation moves from the laboratory into the marketplace. No SBIR funds support this phase. To commercialize their product, small businesses are expected to garner additional funds from private investors, the

capital markets, or from the government agency that made the initial award. The availability of additional funds and the need to complete rigorous testing and certification requirements at, for example, the Department of Defense or NASA can pose significant challenges for new technologies and products, including those developed using SBIR awards.

### **Summarizing the Policy Mapping**

In the following, the results of the policy mapping are shown (Figure 3). The policy mapping indicates in which policy areas that the U.S. government has actively fuelled the risk capital market. It also indicates to what extent the public involvement has been demand or supply side oriented.

Figure 3: The Investment Policy Mapping in USA on Federal Government Level (the actual initiatives are shown in the single policy area)

<b>INVESTMENT OPPORTUNITIES</b>	<b>INVESTMENT INCENTIVES</b>	<b>INVESTMENT CULTURE</b>	<b>INVESTMENT CAPITAL</b>	<b>INVESTMENT ABILITIES</b>
<b><u>High-Growth Firms</u></b>	<b><u>Loans and Public Guarantees</u></b>	<b><u>Investment Values</u></b>	<b><u>Personal Capital</u></b> Secondary market for residential mortgages	<b><u>Human Capital</u></b> SBIC
<b><u>Knowledge Intensive Sectors</u></b> SBIR	<b><u>Public co-investment</u></b>		<b><u>Private Funding</u></b> SBIC Prudent Man Rule	<b><u>Social Capital</u></b>
<b><u>Entrepreneurial Education</u></b>	<b><u>Fiscal Incentives</u></b>		<b><u>Public Funding</u></b>	
<b><u>Commercialisation of R&amp;D</u></b> SBIR Baye-Dole Act	<b><u>Taxation</u></b> Revenue act cuts capital gains rates Business Investment Incentive Act Tax Reform Act Secondary market for residential mortgages		<b><u>Regulation</u></b> Securities Act of 1933	
<b><u>Investment Readiness</u></b>	<b><u>Administrative Burdens</u></b>		<b><u>Internationalisation</u></b>	
<b><u>Matchmaking</u></b> SBIR	<b><u>Leverage Programme*</u></b> SBIC		<b><u>Exit Opportunities</u></b> NASDAQ	

**Supply and Demand Orientation**

Below the public initiatives have been grouped according to their focus on either the supply (investor) or demand (entrepreneur) side in the market. Evidently and as with many other countries, the USA has focused its policy efforts around fuelling the supply of capital.

*Table 1: Supply and demand oriented policies*

<b><i>Supply oriented policies</i></b>	<b><i>Demand oriented policies</i></b>
The Securities Act The Securities Exchange Act GAAP regulations SBA’s 7(a) Guaranty Loan Program SBIC Creation of NASDAQ ERISA Hart-Scott-Rodino Act FASB treatment of “pooling” of assets Liberalization of bankruptcy system Revenue Act cuts capital gains rates ERISA regulations DOL gives VC’s “safe harbor” exemption from ERISA Business Investment Incentive Act Tax Reform Act Adoption of Uniform Blue Sky Law Creating Financial Markets to Fund Entrepreneurial Growth Companies	Bayh-Dole Act SBIR

Source: ICE Policy Mapping 2008.

Two significant programmes aimed at strengthening the demand side are the Bayh-Dole Act and the SBIR, which were both implemented in the 1980s.

Figure 5: Federal Prioritised Investment Policy Areas in the USA (federal government level), 2008

<b>High Attention: Policy Areas with Minimum 3 Policies</b>		
<ul style="list-style-type: none"> <li>▪ Taxation</li> </ul>	<b>Middle Attention: Policy Areas with 1-2 Policies</b>	
	<ul style="list-style-type: none"> <li>▪ Knowledge Intensive Sectors</li> <li>▪ Commercialisation of R&amp;D</li> <li>▪ Matchmaking</li> <li>▪ Personal Capital</li> <li>▪ Private Funding</li> <li>▪ Regulation</li> <li>▪ Exit Opportunities</li> <li>▪ Human Capital</li> </ul>	<b>Low Attention: Policy Areas with no Policies</b>
		<ul style="list-style-type: none"> <li>▪ High Growth Firms</li> <li>▪ Investment Readiness</li> <li>▪ Loans and public Guarantees</li> <li>▪ Public Funding</li> <li>▪ Public co-investment</li> <li>▪ Fiscal Incentives</li> <li>▪ Administrative Burdens</li> <li>▪ Investment Values</li> <li>▪ Internationalisation</li> <li>▪ Social Capital</li> </ul>

Source: ICE Policy Mapping 2008.

According to the ICE Investment Policy Analysis, the public involvement has been spread out over a number of areas (Figure 5). However, only Policy area has received the highest attention, namely taxation.

Other policy areas such as supporting the knowledge intensive sector, supporting private funds, matchmaking, exit opportunities and human capital are also area, which have been subject for public intervention. In a larger number of areas, the public sector did not intervene at all.

## **CONCLUSIONS**

In the USA, the public sector has over decades provided the risk capital market with policies, which seems to have had a profound impact on the creation of a vibrant risk capital market today. With a few well-designed and highly targeted reforms, the public sector has facilitated and encouraged the private market to invest in risk capital activities. The facilitator role is characteristic for the federal state since no direct investment programmes have been applied.

By providing investment leverage and training human capital (1958), enhanced exit opportunities (1971) and allowing public pension funds to invest (1978), the public sector has played a key role over a significant period of time. This is much earlier compared to many other countries, where government involvement only traces back 15-20 years.

The long period of time, in which the public sector has played a role - as facilitator - has possibly contributed to the development of a highly successful risk capital market. Today, the role of the public sector seems to be as a "gap-filler" in the sense, that it ensures that venture capital is evenly spread in terms of geography and sector.

## **Annex**

### **List of Interviews**

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