

**Policy Analysis for the Development
of Venture Capital and Entrepreneurship in France**

by

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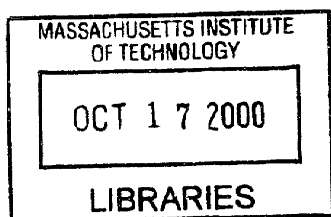
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Abstract

Innovation and high growth technological companies have been set as a priority in Europe. Recently, the European Union declared “Entrepreneurship and Innovation are central to the creative process in the economy and to promoting growth, increasing productivity and creating jobs. Entrepreneurs sense opportunities and take risks in the face of uncertainty to open new markets, design products and develop innovative processes.”

The most innovative firms, which seek early-stage, external financing, have the potential promise of substantial returns but a concomitant high level of risk. It is within the context of such firms that the potential of venture capital, as a source of entrepreneurial support, appears most relevant.

However, many barriers hinder the development of venture capital in Europe, and in particular in France. Innovators are not only vulnerable at the outset but are faced with an interminable series of obstacles to creativity. The main handicaps and obstacles are those affecting the coordination of efforts, human resources, private or public financing and the legal and regulatory environment.

This thesis analyzes the current situation of venture capital and entrepreneurship in France, compares it to the overall situation in Europe and in the United States. It eventually delivers some policy recommendations aimed at fostering both the supply and demand of venture capital in France.

The main challenge is probably best summarized as one of flexibility. Regulations and procedures of all sorts need to be re-engineered to encourage and promote the fluid development of businesses. Flexibility to adopt new cultural mindsets: risk-taking behavior, different attitudes towards initiative, success and failure. Flexibility to adopt a lifelong learning attitude and regularly retrain.

Ultimately, entrepreneurship and the development of venture capital in France is about action rather than analysis, and, despite its high potential, France has still much to achieve.

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Associate Director of Entrepreneurship Center
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On a personal note, I am grateful to David and Margaret, whose presence has been much like a family and whose raspberry pancakes are certainly the best in town, and good luck to eYak your next endeavor; Daniel and Barclay, who survived many meals at the trucks; This thesis is ultimately dedicated to my parents, who always emphasized education and gave me the chance to be here; and to my family.

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CHAPTER 1: INTRODUCTION

1.1 The Context of Innovation and Entrepreneurship

The context of innovation and entrepreneurship has changed profoundly over the past twenty years, and the increasingly rapid dissemination of new technologies, the constant changes which require ongoing adaptation, are a challenge for society as a whole. Innovation is an essential precondition for growth, maintaining employment and competitiveness. Fostering entrepreneurship is an important part of the strategy for achieving improved economic performance. In a report presented to Parliament in December 1998 [1, 1998], the United Kingdom Secretary of State for Trade and Industry wrote:

“ Entrepreneurship and innovation are central to the creative process in the economy and to promoting growth, increasing productivity and creating jobs. Entrepreneurs sense opportunities and take risks in the face of uncertainty to open new markets, design products and develop innovative processes.”

Thus, the results of research and development (R&D) must be effectively translated into commercial outcomes. Access to finance is seen as a key factor in this process of innovation. However, these innovative and start-up companies face specific financing constraints which usually hamper their growth.

For a variety of reasons, it is very difficult for large companies to undertake high-risk innovative projects. Such projects have the greatest chance of success if they are undertaken in small technology-based firms. Given the limitations of traditional financing, access to risk capital is a crucial determinant to the development of these companies. Risk capitalists are willing and able, through their financial instruments, to invest in such high-risk innovative projects.

1.2 Economic Impact of Growth Companies

Since the late 1970s, small and medium sized enterprises (SMEs) have been seen as an increasingly important policy vehicle for economic and regional development goals within the European Union.

Technological high-growth companies, or NTBFs- New Technology-Based Firms, are seen as offering significant potential benefits in several areas of European Union interest:

1.2.1 Employment Creation

This interest has come about through an increasing recognition of the major contribution of SMEs to total employment and to the net creation of new jobs. Young and newly created enterprises have been responsible for an increasing share of the job growth over the past two decades [Dennis, 2, 1994]. Studies on job creation in OECD economies show that small businesses have not only been the largest contributors to gross job gains and losses in recent years, but also to net job creation in most countries [3, 1997]. Where data is available, new and small firms are consistently found to be the major source of new jobs. Similar results were found in the OECD study by Schreyer [Schreyer, 4, 1996]. Research on job creation in the JS also points to a negative relationship between net job creation rates and the age of firms [Davis et al., 5, 1996].

1.2.2 Innovation and Competitiveness

A few trends have emerged from the new financial/economic environment regarding innovation processes. A greater share of financial resources in R&D are now in profit-maximizing investments and are subject to the pressures of financial optimization. Two characteristics of this observation are noteworthy:

- The shift of R&D resources from the public to the private sector is evidenced by the data on gross R&D expenditures in developed countries. This shift is confirmed both in terms of the sources of financial resources dedicated to R&D and the sectors performing R&D activities. Furthermore, the increase in the share of R&D personnel in the private sector

reflects this trend. As a result the largest share of R&D efforts in OECD countries are now generated by the private sector.

- Underlying the shift towards the private sector financing of R&D and innovation activities, there has been an increase in the differentiation of financing and a re-allocation of R&D efforts within the private sector itself. R&D management is no longer a relatively sheltered activity in the enterprise sector. It has become the mainstream capital budgeting process. R&D and innovation programs, in large as well as small and medium-sized enterprises, are more directly selected, managed and scrutinized for creating shareholder value in enterprises.

1.2.3 Regional Development

Interest in high-growth companies has, in part, stemmed from an appreciation of their critical role from the early 1970s in the economic of regions of high technology activity in the USA, particularly Silicon Valley, California and Route 128 around Boston, Massachusetts [see Saxenian, 6, 1996]. Silicon Valley is now home to one-third of the 100 largest technology companies created in the United States since 1965, and Route 128 has regained prosperity since the new era of internet technologies.

However, while successful high-growth companies potentially offer material advantages to the economic prosperity of a location, their genesis and early years are fraught with extremely high levels of uncertainty and risk in virtually all areas of activity including financing, technology and marketing. For the start-up individual company, an exceptional technological offering is a necessary but not sufficient condition for economic success. Their entrepreneurial founders have also to manage organizational and product/market demands in both internal and external environments characterized by their complexity and rapid rate of change.

1.3 The Organization of the Thesis

1.3.1 The Argument

The thesis is based upon the argument that innovation and entrepreneurship are driving value creation in the new economy. Besides, venture capital is a key element in order to fuel innovation and entrepreneurship. As a consequence, the development of venture capital must become a priority on the agenda of governments, and in particular in France.

1.3.2 The Method

This thesis is organized as follows. Chapter 2 defines risk capital and assesses the importance of risk capital to innovation, job creation and economic competitiveness. As a consequence, risk capital must be fostered and become a priority on the European agenda.

Chapter 3 describes the situation of risk capital in Europe and draws some comparisons with the US economy. Besides, the barriers to the development of risk capital in Europe are evaluated.

Chapter 4 analyses the situation in a particular European country, France for instance, and maps the current state of venture capital as well as the stakeholders. This chapter analysis is derived from the policy analysis framework developed in the Technology and Policy Program at MIT.

The following chapter compares the venture capital activity in France with two key European countries, UK and Germany. The Chapter 6 is a policy recommendation addressed to the French government for the development of venture capital in France and the growth of entrepreneurship. Finally, the last chapter concludes with the challenges ahead.

Chapter 2: The Venture Capital Framework

2.1 Limitations of Traditional Finance for High Growth Companies

2.1.1 Empirical Evidence

Recent studies on the determinants of the financial structure of small and medium-sized enterprises (SMEs) indicate that they face specific problems [6, 1998]. Evidence shows that young companies have almost no long-term debt, and rely on short-term debt and trade credits to finance operations, whereas older small companies use some long-term debt but in a rather limited way. In addition, these studies note a negative relationship between the age of the firms and financial leverage, as well as between firm profitability and financial leverage.

2.1.2 Financial Specificity of High- Growth Companies¹

Financing difficulties are particularly acute for high-growth companies on formation and at their earliest stages of development.

Intangible Assets

Limited tangible assets reduces their opportunity for collateral-based lending from retail banks and traditional investors. The collateral of new ventures is contained in elements such as know-how, market access and goodwill rather than fixed tangible assets, such as plant and machinery. Key manpower is more likely to be concerned with research and development rather than production, and therefore the attraction of funding is potential future earnings rather than current profits. The economic value of intellectual property rights created by the entrepreneur is, as yet, unproven and thus unexploitable.

¹ Most of the arguments are excerpted from. Berger, Udell. (1998) "*The Economics of Small Business Finance*" Journal of Banking and Finance, Vol 22

Lack of Commercial Experience

The ability of new entrepreneurs from a technology/scientific background to attract external equity finance is also prejudiced by their frequent lack of commercial experience and the absence of an established record of successful enterprise.

Informational Opacity

Perhaps the most important characteristics defining small business finance is informational opacity. Unlike large firms, small firms do not enter into contracts that are publicly visible or widely reported in the press- contracts with their labor force, their suppliers, and their customers are generally kept private.

Thus the parties involved have asymmetric information. Compared to investors, entrepreneurs, most of the time, have a superior knowledge of the future prospects of projects in which they are involved.

Lack of Publicly Traded Securities

In addition, small businesses do not issue traded securities that are continuously priced in public markets and (in the US) are not registered with the Securities and Exchange Commission (SEC). Besides informational opacity, another reason why small firms cannot issue publicly traded securities comes from the costs associated with public markets due diligence, distribution, and securities registration. Many of these costs are essentially fixed and create economies of scale in issue size. Given that issue size and asset size of the firm are positively related, these economies of scale in issue size may be difficult for small and mid-sized businesses to overcome.

Lack of Accounting Transparency

Moreover, many of the smallest firms do not have audited financial statements at all that can be shared with any provider of outside finance. As a result, small firms often cannot credibly convey their quality. Moreover, small firms may have difficulty building reputations to signal high quality or nonexploitive behavior quickly to overcome informational opacity.

Corporate Governance

Another problem may derive from the juxtaposition of ownership and management. Most high-growth firms are owner-managed. As a result, agency problems in corporate governance and in choosing capital structure that are driven by the separation of ownership and control are often irrelevant for small firms. However, an undiversified owner may pursue non-value maximization behavior to reduce risk. Furthermore, the agency cost of debt might be higher without an intervening layer of risk adverse management that would otherwise reduce risk.

The combination of these aspects implies that start-ups have essentially no access to credit markets, and must resort to so-called risk capital.

2.2 The Venture Capital Framework

It is within the context of innovative firms seeking early-stage, external finance with the potential promise of substantial returns but a concomitant high level of risk that the potential of venture capital as a source of entrepreneurial support appears most relevant.

2.2.1 *Definition of Venture Capital*

Venture capital is defined in this thesis as capital provided by firms or individuals who invest alongside management in start-ups and high-growth companies that are not quoted on the stock market. The objective is high return from the investment. Value is created by the young company in partnership with the risk capitalist's money and professional expertise.

From the Private Market to the Public Market

Venture capital encompasses the venture capital industry as well as the informal venture capital industry represented by the business angels. For the purpose of the thesis, we consider venture capital as a source of private equity. However, we will briefly analyze the proposition of governments as venture capital throughout a few European examples, as well as discuss the existence of captive funds.

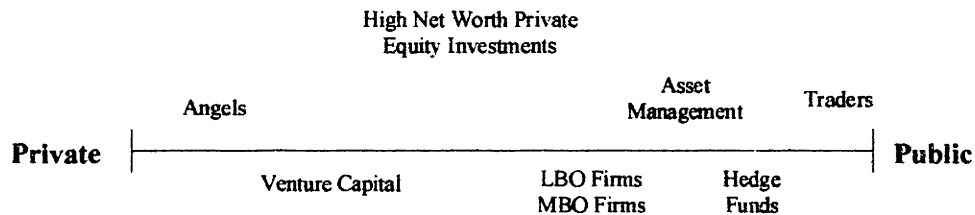


Figure 2-1: The Buy-side of the Financial Industry

Different stages of investment are achieved by these players. The different types of finance can be termed early-stage financing, development financing and mature or late-stage financing.

Different stages of financing for different stages of development

In the scope of this thesis, venture capital is defined as the financing targeted to high-growth companies. Thus, this definition does not encompass the mature company financing, such as product lines financing, debt reductions, acquisitions and management buy-outs and buy-ins. Figure 2-2 details the different stages of business development and finance.

	<u>START-UP FIRMS</u>	<u>GROWTH FIRMS</u>	<u>MATURE FIRMS</u>
STAGES OF BUSINESS DEVELOPMENT	No demonstrated track of record; Minimal business system development	Demonstrated product potential on small scale or prototype basis; Proven management team; Rapid business system development	Stabilization of competition; Development of sophisticated business systems; Increasing concentration on cost economics

Figure 2-2: Different Stages of Business Development

	<u>EARLY-STAGE FINANCING</u>	<u>DEVELOPMENT FINANCING</u>	<u>MATURE AND LATE- STAGE FINANCING</u>
STAGES OF FINANCE	Seed finance A relatively small amount of capital provided to an inventor or entrepreneur to develop and/or prove a concept	Second-stage finance Working capital provided for the initial expansion of a company	Turn-around finance Financing provided for companies in trouble for bankruptcy or reorganization purposes
	Start-up finance Financing provided to companies for product development and marketing	Third-stage finance Financing provided for major expansion of a company whose sales volume is increasing	Management/leveraged buy-out Financing provided for management to acquire equity interest in firm
	First-stage finance Financing provided to companies to initiate commercial manufacturing and sales	Bridge finance Financing provided for a company expecting to go public within 6 months to a year	Mergers/acquisition/privatization Financing provided to cover firm's share of costs in a merger, acquisition or privatization of company

Figure 2-3: the different stages of finance².

The scope of this paper mainly encompasses the angel finance and the venture capital markets, which are considered the main drivers of risk capital for high growth companies since they invest at earlier stages. The next part describes both types of investors and their main characteristics.

2.2.2 The Angel Finance Market

This type of finance is sometimes discussed in terms of a “target rate of return”, or the rate that the angel or venture capitalist would realize in the most likely successful state. When they invest in early –stage firms, the target rate can be as high as 40-80% depending on the stage of finance with angels generally at the lower end and venture capitalists at the higher end. These target rates often require external equity investors a majority ownership. Later stage venture capital investing, however, may be associated with somewhat lower target rates; see [Fenn, Liang and Prowse, 7, 1997]

² Source. Venture Economics Investor Services Annual Review; Pratt’s Guide to venture Capital

An Informal Investor

Angel finance differs markedly from most other categories of external finance in that the angel market is not intermediated. Instead, it is an informal market for direct finance where individuals invest directly in the start-up companies through an equity contract. Because angels by definition, and by SEC regulation, are high net worth individuals, the increment of funds that an angel wishes to invest in a start-up company is often consistent with the amount that the firm needs. Quite often one angel is sufficient. Angels typically provide finance in a range of about \$50,000 to \$1,000,000, below that of a typical venture capital investment [Wetzel, 8, 1994].

However, angels do not always act alone. Angels sometimes work with a small investment group where they coordinate their investment activity [Prowse, 9, 1998]. Sometimes this is done in conjunction with a “gatekeeper” such as a lawyer or accountant who brings deal flow to the group and helps structure the contracts. The angel market tends to be local, where investor proximity may be important in addressing information problems.

Angels often invest in multiple rounds at different stages as the companies they are investing in move through the early stages of financial growth. Most of the time angels demand less control and bring less financial expertise to the table on average than venture capitalists.

Some Attempts to formalize this Market

While the angel market can be best characterized as informal, there have been some attempts to formalize the market in the US. These attempts may be motivated by the assumption that search and information costs have been significant impediments to the efficiency of the angel market. One thrust has been to create private angel networks in which entrepreneurs can solicit equity investments by angels who are members of the network. Typically the network is operated by a not-for-profit entity, such as a university. Recently the Small Business Administration (SBA) has linked a number of angel capital networks together to form a system called ACE-Net. This system now permits angels to search across term sheets from entrepreneurs across the US [Acs and Tarpley, 10, 1998] & [Lerner, 11, 1998].

2.2.3 The Venture Capital Market

Unlike the angel market, the venture capital market is intermediated. Venture capitalists perform the quintessential functions of financial intermediaries, taking funds from one group of investors and redeploying those funds by investing in informationally opaque issuers [Berger and Udell, 12, 1998]. In addition to screening, contracting, and monitoring, venture capitalists also determine the time and form of investment exit. In performing these functions, the venture capitalist is the consummate active investor, often participating in strategic planning and even occasionally in operational decision making.

From Origination to Exit

At origination, venture capitalists confront a significant adverse selection problem associated with providing external finance to unusually opaque firms and therefore spend a considerable amount of time evaluating prospective issuers [Amit, Glosten, and Muller, 13, 1990]. Syndication may also help solve the adverse selection problem [Lerner, 14, 1994].

In the US where the venture capital market is more developed than anywhere else, the biggest categories of institutional investors are public pension funds (26%), corporate pension funds (22%), commercial banks and life insurance companies (18%), and endowments and foundations (12%). The limited partners typically put up 98% or more of the funds and receive 80% of the partnership's profits.

The typical venture capital fund has a 10 year life span, usually with an option to extend for two years. Large, well-established venture capital management firms operate multiple funds simultaneously, each at different stages in their life spans. During the early years of the fund, the senior managers search for and screen new deals, and structure the contracts with the selected companies. During the middle years, the venture capitalists manage the investments in their fund's portfolio. During the later years of a fund's life, much of the venture capitalist's time is focused on "harvesting" portfolio firms.

The most attractive exit is typically through an IPO and subsequent public offerings. In general, only a minority of the firms in the fund's portfolio will be successful enough to take

public. In practice, less than 20 percent of venture backed firms are “high reward” investments. The second best exit is by sale to another company. Alternatively, if a portfolio firm does not do well, it may be put back to its original owners, or in a worst-case scenario liquidated. However, the payoffs from the few most successful firms generally provide the bulk of the fund’s returns.

Different types of Organizations

There are different types of venture capital funds inside the same country as well as differences across countries. Usually the preferred structure implies a single layer of tax.

Independent Funds

They are usually organized as limited partnerships with the venture capitalist as a general partner for a 10-year period. In the US, about 80% of all venture capital flows through independent limited partnerships, with most of the remaining 20% provided by subsidiaries of financial institutions. In the partnerships, and as an oversimplification, the general partners usually consist of senior managers of venture capital management firms and the limited partners are institutional investors. See [Fenn, Liang and Prowse, 8, 1997] for more details.

The limited partnership is structured to address problems of asymmetric information and to align incentives of the general partners and the limited partners. This is accomplished particularly through the finite-life nature of the partnership agreement, which requires general partners to regularly raise new funds in order to stay in business, and the linking of the general partners’ compensation to the success of the partnership. Usually in the US venture capitals all belong to the NVCA. In Europe, they mainly belong to the EVCA.

Corporate Venture Capital

Recently, corporations have begun to invest significantly in venture capital for both financial and strategic reasons. Corporations’ goals for their venture capital initiatives tend to fall into six broad categories as described by a recent McKinsey survey [McKinsey, 15, 1998].

- Pure financial gains for companies which have a competitive advantage in access to cash or special investment expertise.
- Cross-sell investment banking products (focusing more on growing market share than growing entire market). Investment banks earn profits through fees for IPO, M&A, and high-yield services to portfolio companies.
- Strengthen webs to support products or grow new applications for products (focusing more on growing market as a whole). Usually the companies are the dominant or semi-dominant players in a web-based marketplace, or the products often have short life cycles with high R&D costs to create next generation applications.
- Access technology/products in a different industry. These companies come from industries that are not technology-intensive, but face turning points where new technologies will cause dramatic changes (e.g. media/publishing and the Internet or credit cards and e-commerce)
- Acquire technology/products in the same industry. These companies are in rapidly changing technology-intensive industries. Many companies offer a portfolio of products (e.g. networking solutions for businesses) that are completed by acquiring start-ups.
- Commercialize the results of internal research. In technology-intensive industries, and large R&D expenditures on programs that yield discoveries outside of core businesses.

Once again European companies are following lately the US examples and more and more companies have recently created their own venture capital group.

SBIC

This type of organization appeared in the US after the American Small Business Law of 1958 to promote small new ventures, especially regional ones. The law was renewed by 1994. It is a model of partnership between the public and the private sectors. The SBIC are mainly monitored by the Small Business Administration that issues them a certificate. They are mainly private, but benefit from the long-term loans with preferential rates that are warranted by the government. They represent 10% of the resources of the American venture capitalist industry.

Syndication of Venture Capitalists

Network of venture capitalists have also been implemented for similar reasons than angel investors. In order to mitigate the risk of venture, venture capitalists may choose a syndication co-investing with other professional venture firms. Thus, there are more capital resources for the investee company. Each firm will bring some competitive advantage.

The Interconnectedness of High Growth Companies Finance

The financial growth cycle paradigm is also useful for highlighting the interconnectedness of the sources of small business finance as firms grow from the start-up stage, to “early stage” finance, to “later stage” finance, and ultimately public finance.

Different sources of funding may be substitutes or complements. For example, the angel contract is often constructed in anticipation of possible future venture capital, indicating that angel finance and venture capital are often complementary sources.

Likewise, the venture capital contract is written in anticipation of going public, suggesting that venture capital and public equity are also complements. Loans from commercial banks and other financial institutions are often predicated on having sufficient equity that was built up in the past through initial inside finance, angel finance, and venture capital.

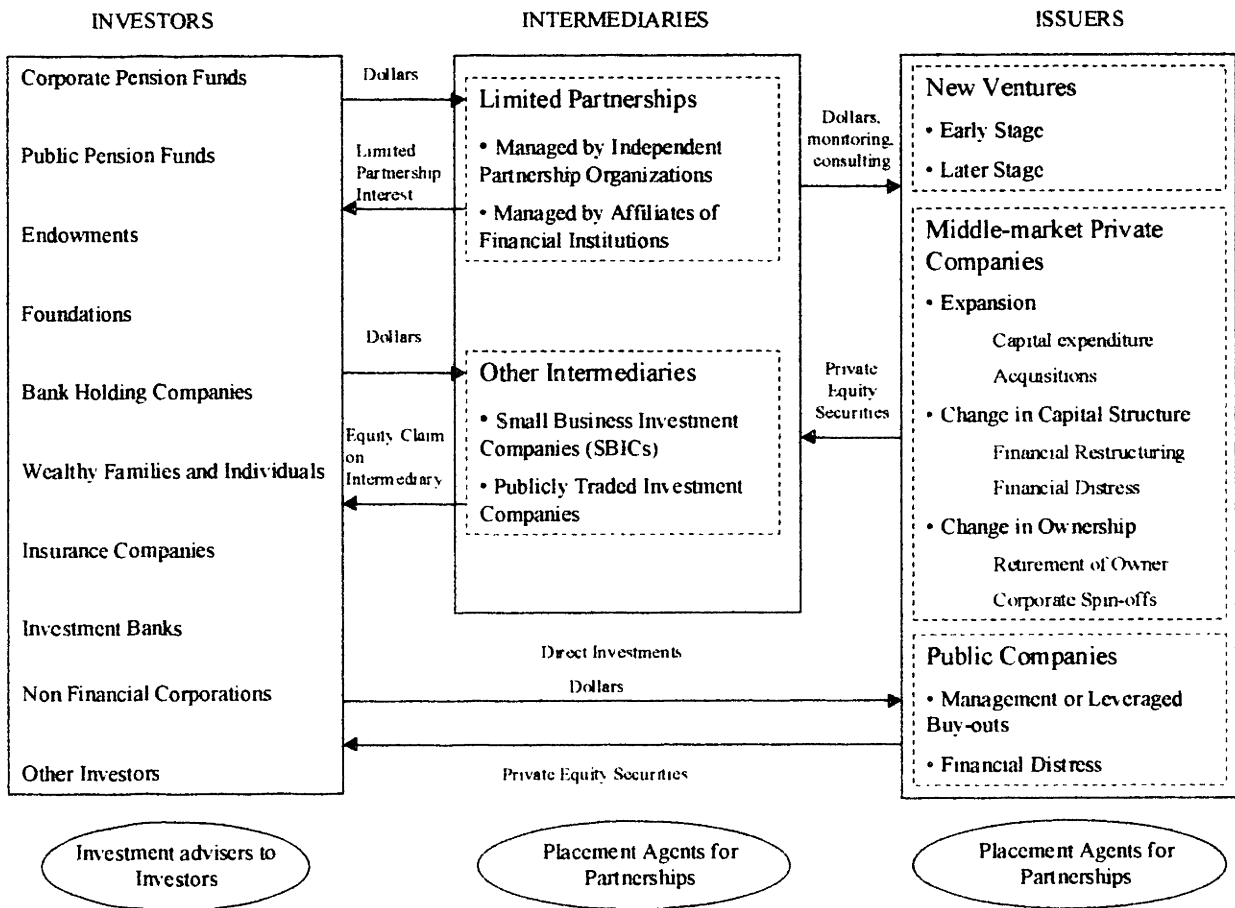


Figure 2-4: Organized Private Equity Market

2.2.4 The Importance of Exit by the Venture Capital Fund

Understanding the importance of exit by the venture capital fund from its investments is the first step in understanding the link between the stock market and the venture capital market.

We develop below an informal theory for why exit by venture capital providers from their successful investments is critical to the operation of the venture capital market, both for the relationship between a venture capital fund and its portfolio companies, and for the relationship between the fund and its capital providers. See [Black and Gilson, 16, 1998].

The Exit and Reinvestment Cycle for Venture Capital Funds and Capital Providers

The non-financial inputs supplied by venture capital providers have special value to early-stage companies. As the portfolio company's management gains its own experience, proves its skill, and establishes its own reputation, the relative value of the venture capital provider's management experience, monitoring, and service as a reputational intermediary declines. Thus, by the time the portfolio company succeeds, the venture capital provider's non financial contributions can be more profitably invested in a new round of early-stage companies. But because the economies of scope discussed above link financial and non-financial contributions, recycling the venture capitalist's non-financial contributions also requires the venture capitalist to exit- i.e. to recycle its financial contribution from successful companies to early-stage companies.

The efficiency of exit for the 'venture capitalist-portfolio company' relationship complements a similar efficiency arising from the relationship between the venture capitalist and the investors in its limited partnerships. The cycle of financial commitment to early-stage firms, followed by exit from these investments, responds to three contracting problems in the venture capitalist-capital provider relationship.

First, capital providers need a way to evaluate venture capitalists' skill, in order to decide to which managers to commit new funds. Second, capital providers need to evaluate the risks and returns on venture capital investments relative to other investments, in order to decide whether to invest in venture capital, and how much to invest. Third, capital providers need to be able to withdraw funds from less successful managers, or from managers whose industry-specific expertise no longer matches current investment opportunities.

Exit by the venture capital manager from specific portfolio investments provides a benchmark that lets capital providers evaluate both the relative skill of venture capital managers and the profitability of venture capital relative to other investments. At the same time, payment of the exit proceeds to capital providers lets the capital providers recycle funds from less successful to more successful venture capital managers.

In sum, exit is central to the venture capital manager's accountability to capital providers. The efficiency of exit for the 'venture capital fund-capital provider' relationship complements its efficiency properties for the portfolio firm-venture capital fund relationship. Taken together, they provide a strong rationale for exit from individual portfolio investments as a critical component of a viable venture capital industry.

2.3 The Importance of Venture Capital

Angel financing and venture capital represent relatively small portions of high growth companies. In the US, for instance, they represent respectively 3.6% and 1.9% of total finance³. However, this considerably understates the role of the external private equity market that is made up of these two categories.

The main argument of this part claims the importance of venture capital in the financing and development of high growth companies. Indeed, venture capital provides a solution to remedy the traditional finance shortcomings. The close screening and monitoring of the firms create value to these firms where risk capital is involved. Furthermore, risk capital spurs innovation and is key to job creation. A few studies undertaken to assess the economic impact of venture capital in the US and in Europe will then be analyzed.

2.3.1 A Remedy to Traditional Finance

As we mention above, high growth firms show specific financing needs that traditional finance may not fulfill. Hence, these firms may need a customized financing that takes into consideration their needs and their specificity.

The Use of Equity-Like Financing Instruments

A key feature of contractual agreements between venture capitalists and entrepreneurs is that almost all of them involve hybrid financial instruments that combine debt and equity components [Viala, 17, 1998]. Very often the capital is provided via the acquisition of

³ Source: Berger, Udell 1998 "*The Economics of Small Business Finance*"

convertible preferred stock. Like common stock, convertible preferred stock is considered equity, but does not pay a dividend on a current basis and offers a liquidation preference. However, it can be converted to common stock at the discretion of the venture capitalist, and usually carries voting rights on an as-if-converted basis. Other widely used instruments are redeemable preferred shares, warrants and convertible debts. Warrants are similar to stock options, in that they give investors the right to buy a fixed number of shares of a venture at a pre-specified price. Convertible debt combines many features of straight debt and warrants. Investors are entitled to receive interest and principal payments, have priority over stock in the event of a liquidation, and the debt can be surrendered to the firm for a specified number of new shares⁴.

The financial literature suggests that the main purpose of the financial instruments used by venture capitalists is to mitigate incentive problems. The cash flow allocation rule affects entrepreneurs' incentives because they look at their own payouts when taking decisions [Harris & Raviv, 18, 1991], and the systematic use of hybrid securities limits over-investment or the manipulation of information by entrepreneurs.

Venture Capital Provides Incentives to Entrepreneurs not to Over Invest

As pointed out by Ravid and Spiegel [Ravid and Spiegel, 19, 1997], most standard financing instruments can provide entrepreneurs with incentives to over-invest (i.e., to initiate negative NPV projects) as they select projects that are profitable from their point of view. Take the simple case of debt financing. The entrepreneur captures most of the gain from investments yielding large payoffs, which far exceed the face value of the debt. However, if the investment fails, the entrepreneur does not bear the consequence because of his limited liability. Thus, with this type of financing scheme, the entrepreneur may benefit from “gambling” with the firm by switching to more risky, negative NPV projects.

Ravid and Spiegel show that, under limited liability, the only way to deter entrepreneurs from engaging in any negative NPV projects is to use linear sharing rules that split the proceeds of

⁴ The difference between a convertible debt and a warrant is therefore that the former has a changing exercise price equal to the value of the debt

ventures in proportion to initial investments. Then, entrepreneurs behave as if they were the sole investors in firms, since they bear both the costs and benefits from their investment choices. Thus, according to this model, venture capitalists must receive equity, or possibly packages combining equity and riskless debt.

Other Incentives Provided by Venture Capital Financing

That most deals involve convertible securities instead of straight equity can be explained by two other major incentive problems. First, the value of a venture depends crucially on entrepreneurial efforts in managing the firm's resources. Jensen and Meckling [Jensen and Meckling, 20, 1976] argue that entrepreneurs can under-invest when they do not own the total company, since they only capture a fraction of the gain from their efforts whereas they support the integral cost. Thus, venture capitalists may want to keep "hard" claims that penalize entrepreneurs in the case of failure. The recourse to convertible debt may also serve this purpose by rewarding an entrepreneur only in the case of a success.

A second problem is that the staging of capital injections can have perverse effects on the incentives of entrepreneurs, unless a deal is carefully designed. Staged finance always provides entrepreneurs with the incentive to conceal the "bad news" in order to avoid liquidation, but, in addition, straight equity financing can induce an entrepreneur to engage in "window dressing", i.e. in activities that artificially improve the short-term performance of a project.

Convertible securities, on the other hand, can mitigate this type of incentive problem by imposing a possible cost on the entrepreneur through the exercise of the conversion options when short-term performance is good. In this case, the ownership share of the venture capitalist is larger than in the case of a pure equity financing. Window dressing then becomes a costly behavior for the entrepreneur, because although it reduces the probability of a liquidation, it also increases the probability of the conversion of debt into equity. One must note, finally, that convertible securities can also give liquidity to a venture capitalist's investment. Such securities typically contain redemption rights that provide some income

when a company is financially viable, but not successful enough to go public or to be privately sold off.

To summarize, the high uncertainty and asymmetric information in start-up finance make the governance of projects essential. Venture capitalists manage these problems through the monitoring of companies, the staging of capital injections, and the use of hybrid securities. Venture capitalists screen hundreds of proposals every year, but support very few of them. As monitoring is costly and projects are risky, they only fund projects with a very high potential. Thus it is not unusual for venture capitalists to apply discount rates between 40 and 60 percent.

2.3.2 Increased Chances of Success: Management Assistance, Intensive Monitoring and Reputational Capital

A major hurdle in start-up financing is that entrepreneurs may have little incentive to stop a failing project, either because they do not provide the capital, or because they are earning private benefits from the running of the company. Thus, with personal information regarding the prospects of their project, entrepreneurs may opt for an inefficient continuation of operations. This possibility requires the gathering of information and monitoring by venture capitalists. They normally have long-term relationships with companies, and combine the staging of capital infusions with an ongoing involvement in portfolio companies as mechanisms of control.

Thus, venture capital provides more than just money to the portfolio companies. Three additional contributions loom large: management assistance to the portfolio company, analogous to that provided by a management consulting firm; intensive monitoring of performance, reflecting the incentives to monitor arising from equity ownership and the power to act using the risk capitalist's levers of control; and reputational capital, that is, the risk capitalist's ability to give the portfolio company credibility with third parties, similar to the role played by other reputational intermediaries such as investment bankers.

Management Assistance

The inefficient continuation of a firm is not the only point of concern for venture capitalists. Without any further control than the staging of capital, entrepreneurs have sufficient operating discretion to adopt other opportunistic behavior. For example, they can take strategic decisions giving them private benefits at the expense of other investors.

Therefore, venture capitalists are also active investors, and claim that their deep involvement in company management is as important as their capital investment. The typical venture capital fund is a limited partnership run by general partners who are experienced at moving companies up the development path from the start-up stage and market knowledge based on other investments in the portfolio company's industry and related industries, see [Sahlman, 21, 1990].

With this experience, the risk capitalist can assist a management-thin early stage company in locating and recruiting the management and technical personnel it needs as its business grows, and can help the company through the predictable problems that high-technology firms face in moving from prototype development to production, marketing, and distribution. The venture capital fund's industry knowledge and experience with prior start-up firms helps it locate managers for new start-ups.

Intensive Monitoring and Control

Venture finance is never one shot, but always staged. Usually, the first stage of investment (seed stage) serves to assess a new concept presented by an entrepreneur. If a project is backed by venture capitalists, then all successive stages of financing are in relation with the development of the company: the start-up stage for product development and marketing, followed by the expansion stages. The last stage of an operation is always an exit, which, for successful ventures, normally leads to an initial public offering (IPO).

The staging of capital is obviously one of the most important mechanisms for controlling a venture, since it links funding decisions to the release of new information about projects. Thus, venture capitalists are able to monitor a firm's progress and, by denying capital, can

force the shutdown of operations if the project appears to be a bad investment. It means that only projects for which venture capitalists receive favorable feedback are funded.

Besides, they normally sit on boards of directors and help the entrepreneurial team in areas such as strategic and operational planning or recruitment, even replacing management if things go badly. In addition, they help raise new money and assist successful ventures in the process of going public. According to one survey [Gorman and Sahlman, 22, 1989], venture capitalists- although not involved in the day-to-day management of a company- show up frequently (1.5 times a month) and spend on average 80 hours per year in direct contact (e.g. on site) with their investments.

It is clear that the monitoring role of risk capitalists increases the chances of success of a firm, because it serves to limit opportunistic behavior. It also adds considerably to the value of the venture by providing it with the expertise of venture capitalists.

Reputational Capital

Much like an investment bank underwriting an initial public offering, the venture capital fund acts as a reputational intermediary. Venture capital financing enhances the portfolio company's credibility with third parties whose contributions will be crucial to the company's success.

Talented managers are more likely to invest their human capital in a company financed by a respected venture capital fund, because the venture capitalist' participation provides a credible signal about the company's likelihood of success. Suppliers will be more willing to risk committing capacity and extending trade credit to a company with respected venture capital backers. Customers will take more seriously the company's promise of future product delivery if a venture capitalist both vouches for and monitors its management and technical progress. Moukheiber provides an account of the reputational power of Kleiner, Perkins, Caufield and Byers, a leading venture capital fund. See [Moukheiber, 23, 1996]. Later on, the venture capitalist's reputation helps to attract a high quality underwriter for an initial public offering of the portfolio company's stock.

The venture capital fund's proffer of its reputation to third parties who have dealings with a portfolio company is credible because the fund is a repeat player, and has put its money where its mouth is by investing in the portfolio company. The fund's reputation is crucial for its own dealings with investors in its existing and future limited partnerships, with other venture capitalists in syndicating investments in portfolio investments. Consistent with a reputational analysis, venture capital-backed IPOs do not suffer the long-run underperformance reported for IPOs in general (see next part).

2.3.3 *Outperformance of Venture-Backed Firms IPOs*

Another reason that underlines the importance of risk capital in the financing of high growth firms derives from the relation between venture-backed firms and IPO performance.

In a widely accepted study, Brav and Gompers [Brav and Gompers, 24, 1997] find that venture-backed IPOs outperform nonventure-backed IPOs using equal weighted returns. A few reasons may explain such results.

Because venture capitalists provide access to top-tier national investment and commercial bankers and may partly overcome informational asymmetries that are associated with start-up companies, the investment behavior of venture-backed firms should be less dependent upon internally generated cash flows. Venture capitalists stay on the board of directors long after the IPO and may continue to provide access to capital that nonventure-backed firms lack.

Additionally, the venture capitalists may put management structures in place that help the firm perform better in the long-run. A few studies [Barry, Muscarella, Peavy, and Vetsuypens, 25, 1990] and [Megginson and Weiss, 26, 1991] find evidence that markets react favorably to the presence of venture capital financing at the time of an IPO.

Venture capitalists may affect who holds the firm's shares after an IPO. Venture capitalists have contacts with top-tier, national investment banks and may be able to entice more and higher quality analysts to follow their firms, thus lowering potential asymmetric information

between the firm and investors. Similarly, because institutional investors are the primary source of capital for venture funds, institutions may be more willing to hold equity in firms that have been taken public by venture capitalists with whom they have invested. The greater availability of information and the higher institutional shareholding may make venture-backed companies' prices less susceptible to investor sentiment.

Another possible explanation for better long-run performance by venture-backed IPOs is venture capitalists' reputational concerns [Gompers, 27, 1996] demonstrates that reputational concerns affect the decisions venture capitalists make when they take firms public. Because venture capitalists repeatedly bring firms public, if they become associated with failures in the public market, they may tarnish their reputation and ability to bring firms public in the future. Venture capitalists may consequently be less willing to hype a stock or overprice it.

2.3.4 Risk Capital Spurs Innovation

As we argued in the first chapter, innovation is key to job creation and competitiveness. Hence, companies and nations are seeking means to foster innovation. In this part, we argue that risk capital is a key determinant to innovation- for a complete study see [Kortum and Lerner, 28, 1998].

Kortum and Lerner examined the influence of venture capital on patented inventions in the United States across twenty industries over three decades. The findings show that the amount of venture capital activity in an industry significantly increases its rate of patenting. The estimated coefficients using different techniques suggest that a dollar of venture capital could be up to ten times more effective in stimulating patenting than a dollar of traditional corporate R&D.

Venture-backed firms do patent more, but not so much as to dilute the economic importance of their patents: their patents are more frequently cited in other patent applications and more aggressively litigated. Finally, the venture-backed firms are also more frequent litigators of

trade secrets, which suggests that they are not simply patenting more in lieu of relying on trade secret protection.

However, it is important to acknowledge that this analysis is limited in scope. In particular, they have estimated a simple stylized model of relationship between venture capitalists, corporate researchers, and innovations. Due to the paucity of data and the lack of previous research in this arena, this study can be seen as a first step in addressing the impact of venture capital on innovation.

2.3.5 Evidence of the Importance of Risk Capital in Europe

Job creation is undoubtedly Europe's main policy challenge. The vital role of small and medium-sized enterprises (SMEs) in this has been asserted. The key role played by high-growth enterprises has been contended as well. Evidence shows that a small number of growth enterprises creates most of the new jobs and economic growth in Europe. Research in the United States by Cognetics has shown that the top 4 percent of all firms in terms of growth account for more than 70 percent of all jobs created. It is the very essence of venture capital to select these high-growth private companies and to provide them with the necessary growth capital.

A research undertaken by the EVCA and Coopers & Lybrand [EVCA, 29, 1997] evaluates the economic impact of venture capital in Europe. The findings confirm the importance of risk capital in the innovation process, the economic competitiveness and the employment creation.

Looking at 500 European venture-backed companies, the results are detailed below. One must note that such a pan European survey was the first of this scale, and clearly confirms the growing interest for such financing.

Venture-Backed Companies Stimulate the Economy

Despite difficult economic conditions, venture-backed companies have continued to develop steadily and have shown strong performances over the last five years. On average, the sample companies increased sales by 35% per year.

Average annual growth rates for the main business indicators of the sample companies outperform those of the top 500 European companies. The average annual growth rate for sales is more than twice as high.

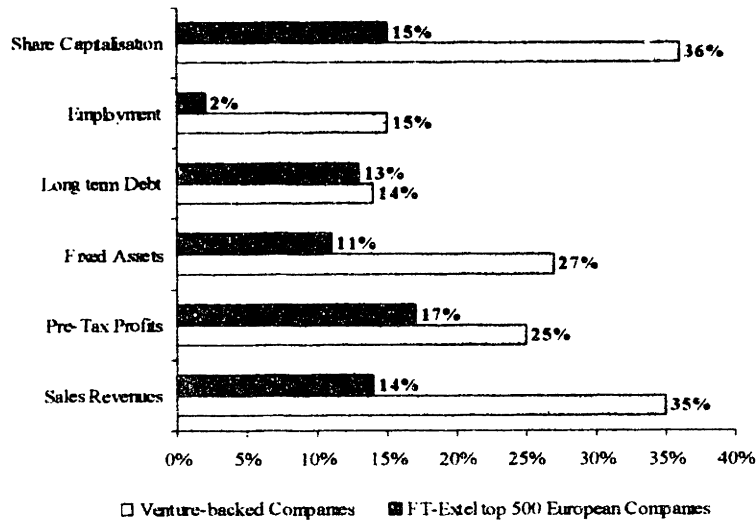


Figure 2-5: Comparison of Average Annual Growth Rates 1991-1995

The difference between the survey companies and the top European companies is especially striking for employment which, at an average rate of 15% per year, grew more than 7 times faster in the average survey company than in the top European companies.

General investments of venture-backed companies increased at an average rate of 25% per year in 1995. R&D expenditures represented on average 8.6% of total sales compared to 1.3% for the top European companies. Venture-backed companies' commitment to R&D expands Europe's technical expertise and resources, and strengthens its competitive position in world markets. International competitiveness is also enhanced by significant growth in export sales (+30% per year on average).

Venture Capital Investors are Active Partners

Venture capital investors contribute both financial and non-financial support. The majority of respondents recognized that venture capital investors provide more than finance. While only

12% regarded their venture capital investor as merely a “fund manager”, 52% considered him to be a “real partner”.

According to the managers of investee companies, the three main contributions made by the venture capital investors, other than finance, were providing financial advice (44%) and assistance on corporate strategy (43%) and acting as a sounding board for ideas (41%).

The overall view of venture capital’s contribution is extremely positive. The vast majority (81%) of managers believed their company would not have existed (43%) or would have grown less rapidly (38%) without venture capital.

In conclusion, the development of risk capital should constitute a major priority in Europe in order to foster innovation. The next chapter will analyze the situation in Europe regarding venture capital and will draw some useful comparisons with the US example. We will carefully define the main barriers of risk capital development in the European Union, and the reasons accounting for the failures of some pan-European public policies.

Chapter 3: Situation in Europe

3.1 Introduction

In the previous chapter, we have assessed the importance of venture capital regarding innovation, entrepreneurial culture and high growth companies development. We will now support the argument that venture capital in Europe is underdeveloped¹, and we will highlight the main barriers to risk capital development across Europe. However, if these barriers are mainly pan-European, the solutions should deserve a European-wide approach as well as a country-specific one. As a consequence, the policy recommendation made in the chapter 6 will target the specific example of a European country, France for instance.

Analyzing the current situation in employment, innovation, technology and entrepreneurial culture, Europe seems at a competitive deficit compared to the United States. Through a historical and economic perspective, we will have a closer scrutiny at the main characteristics of the venture capital industry in the US, and the underlying discrepancies with Europe.

What are the sources of Europe's competitive deficit? In a further analysis, we will identify the main barriers to risk capital development in Europe, categorized as follows: Cultural, Human Capital, Institutional and Regulatory, Fiscal and Financial.

Finally, In order to overcome these shortcomings, the European Commission has launched several programs across the member states. Staying at the European level, we will end the chapter by evaluating one of the initiatives proposed by the Commission, the European Seed Capital Funds (ESCF).

¹ Recent developments such as the arrival of US VC firms have contributed to the growth acceleration

3.2 The US Venture Capital Industry

The characteristics of the European venture capital industry can be highlighted through a contrast with the basic features of the US industry, because the latter is the oldest and largest in the world. In fact, the conventional wisdom is that the European industry is underdeveloped compared to that of the US.

3.2.1 Historical Perspective of the US Risk Capital Industry

One can trace the beginnings of the US venture capital industry to the 1920s and 1930s, when wealthy families and individuals directly provided large sums of start-up money for companies such as Eastern Airlines and Xerox. The first organized venture capital firm was not founded until 1946, when Ralph E. Flanders, the president of the Federal Reserve Bank of Boston, and General Georges Doriot, a professor at the Harvard Business School, established American Research and Development (ARD) for the specific purpose of providing risk capital for new ventures [Bygrave and Timmons, 31, 1992]. In 1957, the firm invested \$70,000 in exchange for 77% of common stock in a new company formed by four M.I.T graduate students. By 1951, that investment had grown to comprise \$355 million in common stock in Digital Equipment Corporation (DEC).

The Small Business Investment Company Initiative (SBIC)

In 1958, the Small Business Administration (SBA) introduced the Small Business Investment Company, or SBIC program, as part of an overall effort to encourage economic growth through new company formation. The SBIC Act allowed SBICs to borrow four dollars at Treasury interest rates from the SBA for each dollar of equity capital they raised.

While the SBA regulated all SBIC funds, the government was exempt from any involvement in investment decisions. By 1965, the 700 licensed SBICs dominated the domestic supply of venture capital. However, incompetence and fraud plagued the industry, resulting in new regulations for the SBICs. By 1968, their number was reduced to 250, and accounted for only 21% of the venture capital pool. Private venture capital funds soon surpassed the SBICs in number and in the amount of capital they supplied. Today SBICs constitute only about 5% of the total capital pool.

The 1978 Revenue Act and ERISA

The venture capital industry's growth was hampered by the recession set off by oil crisis in the seventies. From 1978 to 1982, venture capitalists, entrepreneurs, and government joined in a combined effort to help revive the industry. Through legislation, they hoped to create a more favorable climate for venture capital markets. The 1978 Revenue Act lowered the capital gain tax rate from 49.5% to 28%, the first tax incentive for long-term equity investments since the late 1960s. The rate was later lowered to 20% by the 1981 Economic Recovery tax Act.

Probably more importantly, three other acts removed many of the regulations governing the investment process. The 1978 ERISA "Prudent Man" Rule in effect allowed pension fund managers to invest in venture capital pools and other higher risk investments, and released a key source of new finance.

Two additional laws were passed in 1980: The Small Business Act and the ERISA "Safe Harbor" Regulation. The Small Business Investment Act reduced the reporting requirements for venture capital firms by redefining them as business development companies as opposed to investment advisers. The "Safe Harbor" Regulation dramatically reduced the risk exposure of venture capitalists by legally defining pension funds as limited partners, meaning that venture capital fund managers would not be considered fiduciaries of pension fund assets invested in the venture capital pools that they managed.

3.2.2 The Current Situation in the US

The question as to whether these acts were directly responsible for the subsequent growth of venture capital continues to be debated. Bygrave and Timmons state that "singularly and collectively, these five pieces of legislation completely revamped the venture capital industry, both immediately and throughout the next decade to the present..."

Others argue that the technological revolution which began in the late 1970s was responsible for the industry's revival. Both are reasonable argument. The breakthroughs in microprocessing and biotechnologies, in particular, provided investment opportunities in a number of rapidly growing markets, from cellular communications to medicine.

However, there is no doubt that the 1978 Prudent Man Law in particular proved to be a defining piece of legislation. Pension funds have come to dominate the supply of finance to the venture capital market. Pension funds made up 15% of the capital committed to venture funds in 1978, and 46% in 1994. The large sums of capital from these institutions accounts for the tremendous growth by the venture capital industry in the 1980s.

From 1985 to 1997, US venture capital under management has grown at an average annual rate of 10%

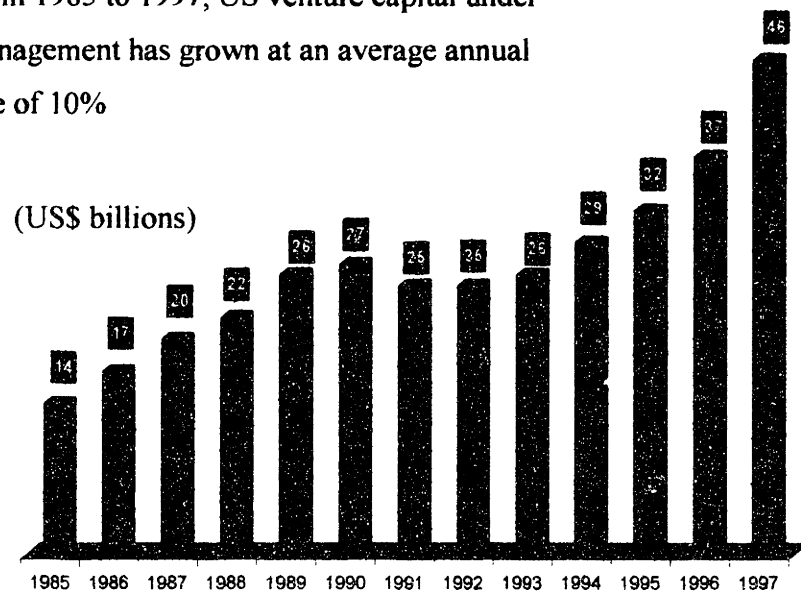


Figure 3-1: Size and Growth of the US Venture Capital Industry

The following figures are excerpted from a survey conducted by McKinsey (see note 16)

Expansion stage financing has consistently accounted for the largest share of venture capital disbursements, about 40 to 45%

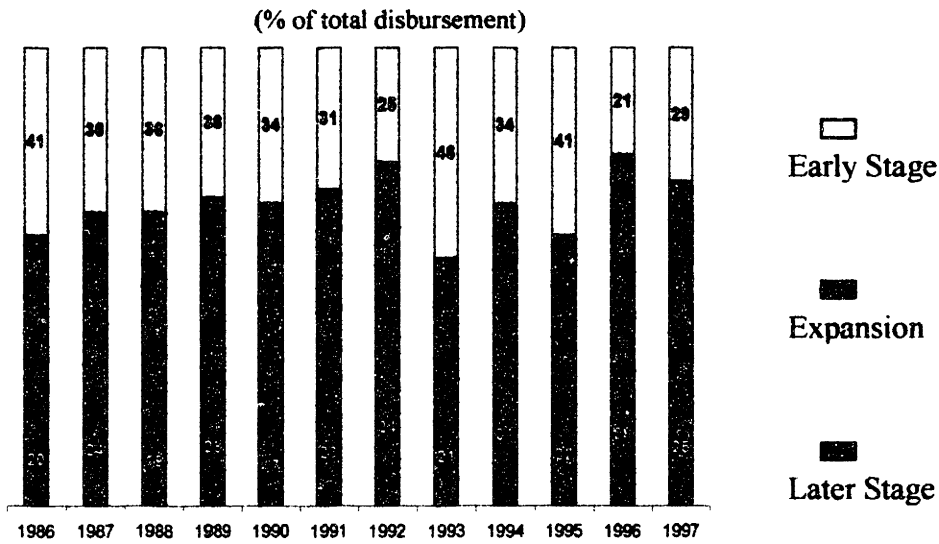


Figure 3-2: Venture capital stage disbursements to portfolio companies by financing stage

On average, typical venture capital fund disbursements reach \$2 million to \$4 million. However, the larger (over \$100 million) funds will often make significant larger disbursements

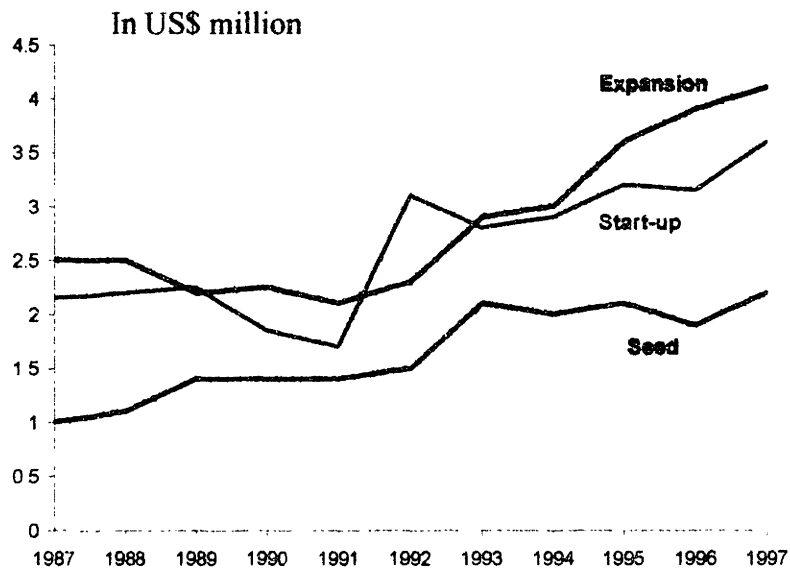


Figure 3-3: Venture Capital Fund Disbursement Size by Stage

**Electronics and information technology constitute the greatest share of
venture capital disbursements**
(% of total disbursements)

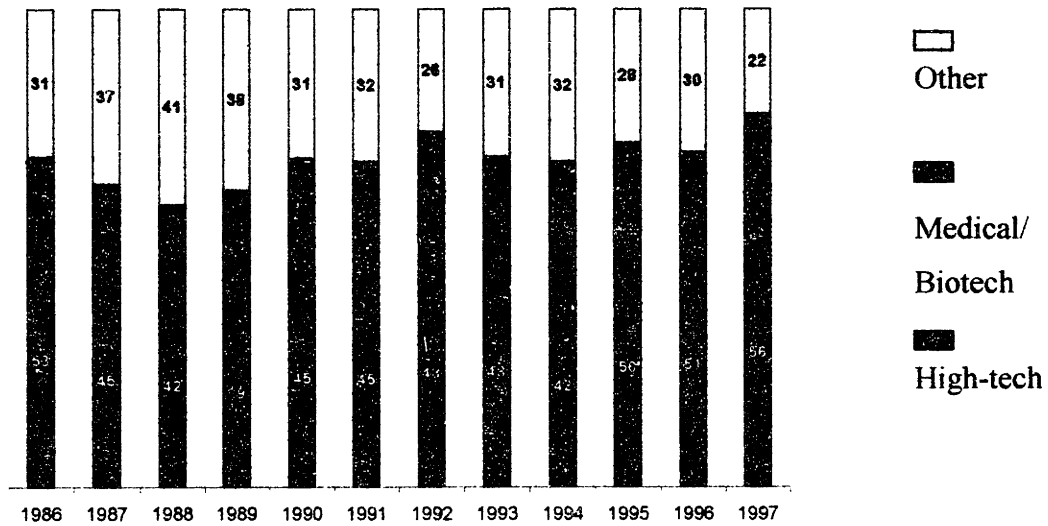


Figure 3-4: Venture Capital Disbursements by Industry

3.3 The European Venture Capital Industry

The characteristics of the European venture capital industry can be highlighted through a contrast with the basic features of the US industry, because the latter is the oldest and largest in the world. In fact, conventional wisdom is that the European industry is underdeveloped compared to that of the US. However, a look at the industry data gives a slightly more complex picture. Although most markets in continental Europe are clearly of a smaller relative size than the US market, the opposite holds true for the United Kingdom. Still, European markets exhibit significant- and potentially important- differences, in terms of investments or exit opportunities. These differences are presented below.

3.3.1 Market Size

The European industry is more recent, having started in the United Kingdom during the early 1980s. The British industry expanded very rapidly, and its activity is also correlated with the UK initial public offering market. EVCA reports that venture backed companies accounted for 40 percent of all flotations on the main market of the London Stock Exchange from mid-1992 to end-1996. Today, the British venture capital market displays the features of a mature

industry. Conversely, the expansion of the industry has been very slow in other European countries, despite a variety of public assistance programs.

Venture capital commitment by selected European countries is given in Figure 3-5. It can be seen that the relevant amounts for France, Italy and Germany are still very small, despite an increase of new commitments over the past few years. The Dutch market recently experienced very rapid growth, though the sustainability of this surge remains to be seen. The amounts involved for the UK, however, are similar to those of the US and, if new funds raised were measured as a percentage of GDP, the UK market would actually be much larger than that of the US. For example, in 1995, new funds commitments represented 0.22 percent of GDP for the UK, almost four times that of the United States (0.06 percent of GDP).

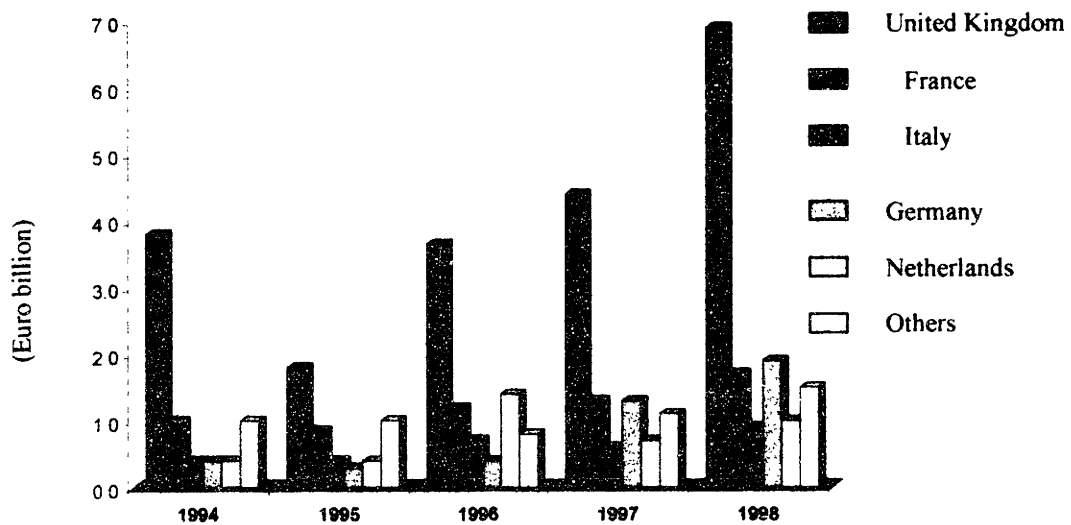


Figure 3-5: New funds raised in Europe (Source: EVCA)

3.3.2 Investment Patterns

The sectoral distribution of European investment totals are presented in figure 3-6. Whereas innovative industries attract the vast majority of investments in the US, traditional industries (the consumer-related sector in particular) have received the largest share in Europe over the past few years.

	1994	1995	1996	1997	1998
<i>Innovative industries:</i>					
Communications, computer-related, electronics, biotech, medical	16.3	21.0	19.6	30.0	33.8
<i>Traditional industries:</i>					
Consumer-related, industrial, chemicals, transportation, construction	52.2	48.0	45.2	35.5	27
<i>Other industries</i>					
	31.5	31	35.2	34.5	39.2

Figure 3-6: Sectoral distribution of investments in Europe in percent (Source: EVCA)

Figure 3-7 shows the stages in the lifecycle when venture capitalists intervene. There is an important bias toward late-stage financing in Europe. While seed and start-up investments increased from 12.5 to 23 percent in the US from 1988 to 1995, they decreased from 12.5 to six percent in Europe over the same period time. Furthermore, as Figure 2 shows, most European investments are for the management buy-outs (MBOs) and management buy-ins (MBIs); operations which concern the financing of a change of ownership of existing product lines or businesses. In particular in the UK, management buy-outs and buy-ins accounted for almost three-quarters of total investments for 1996. In the US, on the contrary, they account for less than a quarter of the total.

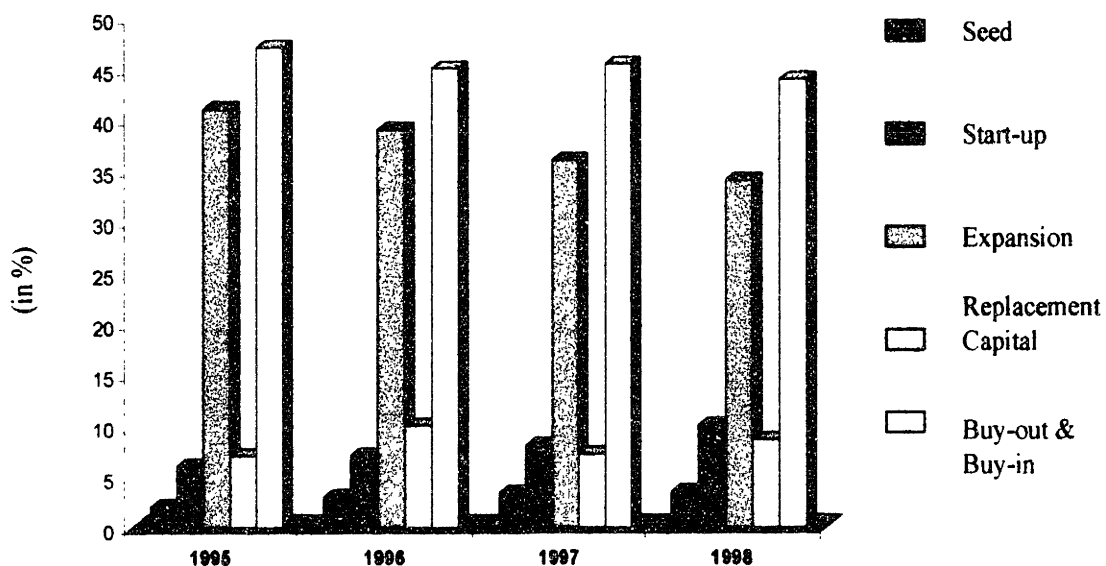


Figure 3-7: Stage distribution of investments in Europe

The economic literature suggests that the extreme bias toward late-stage investments in Europe, with the concentration on development capital (MBO, MBI), may be due to the sources of funds.

One should note that many European venture capital companies are captive or semi-captive organization¹. The contribution of captive and semi-captive companies to total investments exceeded 40 percent in 1995 and 1996. Figure 3-8 also shows that institutional investors (e.g. banks, insurance companies and pension funds) play a predominant role in Europe, accounting for more than 75 percent of new commitments.

The potential link between this characteristic of the European market and the bias toward late-stage financing lies in the short-termism of institutional investors. Several empirical studies indicate that most institutional investors are subject to short-term performance pressures, which have a considerable impact on their investment strategies [Lakonishok, 32, 1991].

For example, pay-for-performance schemes are very common with remuneration indexed to some indicator of profitability. This induces managers to behave myopically, e.g. to go for short-term lower-risk investments (MBO, rather than seed capital where it can take a decade to get results).

The periodic evaluation of managers has the same effect on their activities: they must seek short-term successes. A similar incentive also applies to professional investors who have yet to establish a reputation. As the market is still uncertain about their abilities, they have a strong incentive to produce early returns [Viala, 33, 1998].

¹ Captive firms are subsidiaries of industrial corporations or financial institutions (mainly banks and insurance companies). Semi-captive organizations invest on behalf of their parent company, but also raise some external funds

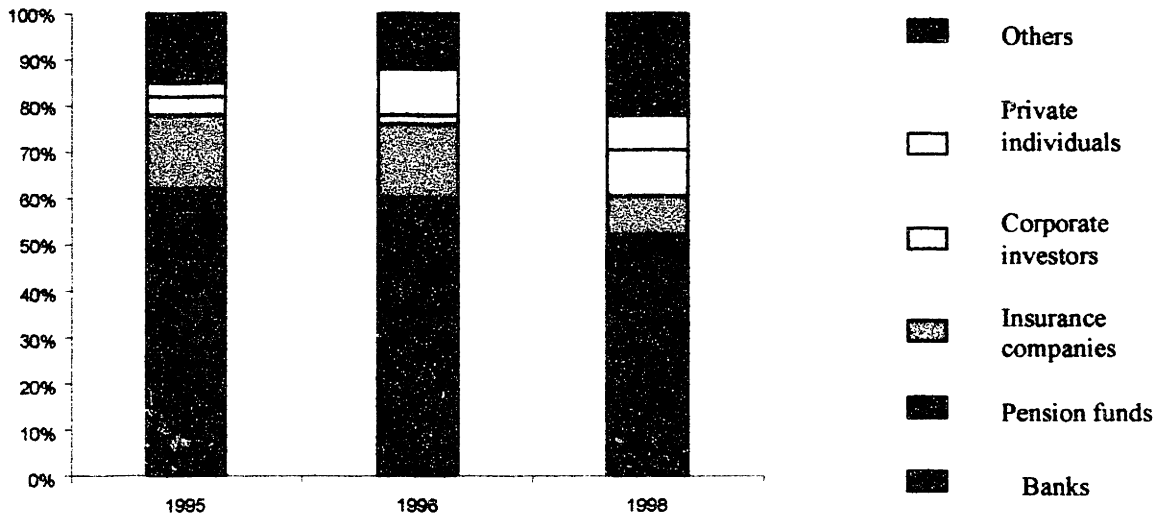


Figure 3-8: Venture capital raised in Europe by type of investor (Source: EVCA)

In fact, the evolution of the US venture capital industry during the 1980s gives a good illustration of the impact of short-termism on investment. This period saw the institutionalization of the US venture capital industry, after the clarification of pension fund investment rules by ERISA.

The 1979 regulatory change allowed pension funds to invest up to 15 percent of their assets in high-risk investments, including venture capital. This had two major consequences on the industry as we already discussed: a large inflow of funds during the 1980s, and an evident move to later stage financing.

3.4 The Barriers to Venture Capital Development in Europe

Traditional Europe is suspicious and its enterprises tend to shy away from risk. Innovators are seen as a nuisance. Innovators are not only vulnerable at the outset but are faced with an interminable series of obstacles to creativity. Fighting one's way through the existing red tape often feels like running the gauntlet.

The main handicaps and obstacles to the development of risk capital are those affecting the coordination of efforts, human resources, fiscal environment, private or public financing and the legal and regulatory environment.

3.4.1 Orienting Research towards Innovation

European firms have more difficulty than their competitors in turning the fruits of research into innovative products. The wide variety of situations in Europe means that this is not always true to the same extent, of course, but a number of indicators show that the efforts made so far have been inadequate.

Decision-makers and taxpayers regard an increase in research input as justifiable in a period of cuts in public expenditure and when businesses are striving to become competitive, if its advantages and spin-offs for society (health research, environmental protection, energy savings, etc.) and for new products, processes or services are clearly perceived.

In knowledge-based economies, the efficient systems are those which combine the ability to produce knowledge, the mechanisms for disseminating it as widely as possible and the aptitude of the individuals, companies and organizations concerned to absorb and use it. The crucial factor for innovation is thus the link between research (the production of knowledge), training, mobility, interaction (the dissemination of knowledge) and the ability of firms, particularly SMEs, to absorb new technologies and know-how.

Evidence in R&D

Research and development represents another significant form of intangible investment for which European performance is insufficient. In spite of maintaining an advanced science base, total European spending on R&D at 2% of GDP is up to one-third lower than that of the United States (2.8%) and Japan (3.1%) as shown in figure 3-9. Research undertaken and financed by industry itself is an area for which the European lag with the United States and Japan remains particularly large (1% of GDP compared with 1.6% and 2.2% respectively).

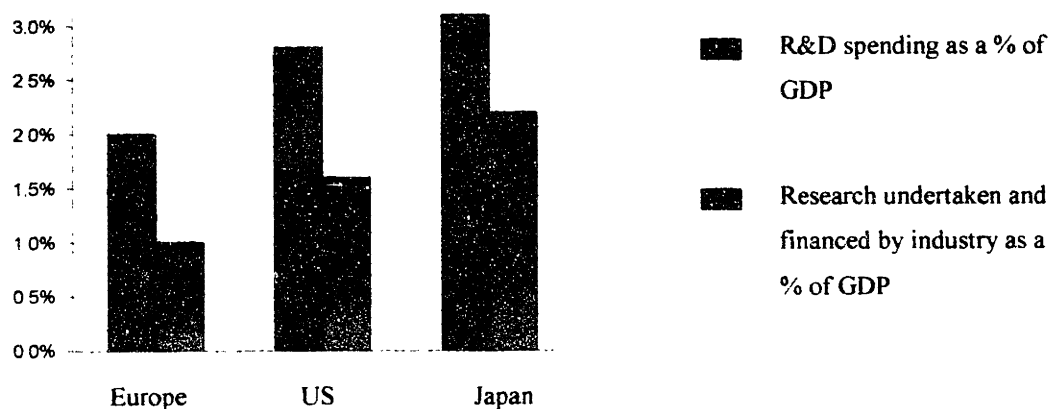


Figure 3-9: Comparison of R&D spending in 1995 between Europe, the United States and Japan

Source: Green Paper on Innovation, European Commission

Europe has not been using its advanced base in science and technology to the best advantage and indeed the European research base does appear to be less market-oriented than that of its major competitors. Product development makes up less than half of R&D spending and France compared with over 60% in the United States and Japan.

R&D expenditure in Japan and the United States is concentrated more in activities close to the market than in the major countries of the European Union
 (As a % of GDP)

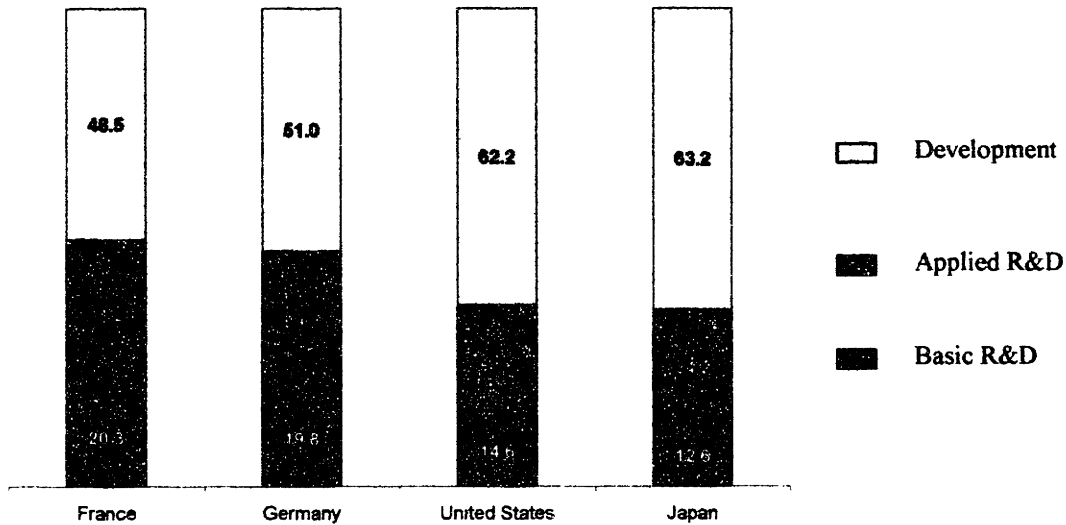


Figure 3-10: Distribution of Total Expenditure by Closeness to Market

Source: DG XII working document, 1995

Evidence in Intellectual Property

Numerous provisions can act as a disincentive for researchers and entrepreneurs to take up the risk of creating a new business. This is clearly the case of intellectual property rules and the administrative requirements for company creation. A striking example is the overall European patent system which is profoundly unsatisfactory. For detailed information see [European Commission, 34, 1997]. Alongside national patents, which continue to exist, there is a European patent, which, once granted by the European Patent Office in Munich, operates to all intents and purposes like a national patent. However, the system is complex and expensive and does not provide a unitary patent for all the Member States, in the form of a Community patent.

More than 640,000 inventions are patented each year in the world, compare with 220,000 in the 1960s. This growth can essentially be attributed to Japan and the United States. Over the past seven years, the percentage of application for European patents from Europe has

decreased by 11%, whilst during the same period the part of US applicants has increased applications. Furthermore, it is estimated that 2/3 of the 170,000 European SMEs which produce inventions do not apply for patents. Between 1984 and 1993, the European Union lost share in patents, the principal method of protecting intellectual property, for all sectors except aerospace and transport equipment. In terms of the total number of patents, however, these two sectors remain quite minor. In chemicals, the loss in share remained limited. The most significant loss took place in electronics, a sector in which R&D is highly intensive and which exerts considerable influence on innovation in the rest of industry through technology embedded in investment goods.

The total cost of filing and maintaining a patent in eight Member States is about USD 120,000 compared with USD 13,000 for the whole of the United States. Besides, the protection of intellectual property has still to improve in Europe. In 1994, industry in Europe spent about Euro 2 billion on legal or out-of-court proceedings to protect patents.

Yet an effective system for protecting intellectual property is indispensable for carrying out innovative activities; for the creation of, and investment in, high tech start-ups and for ensuring effective protection throughout the single market.

3.4.2 Human Resources and Cultural Issues

European economic system has created a risk adverse culture, where employment is considered on a lifetime basis. Large corporations and state-owned companies tend to cultivate this mindset.¹ The successful entrepreneur is far from becoming a myth in Europe compared to the situation in the United States where entrepreneurship and innovation are praised. Very few universities, for instance, are proposing entrepreneurship courses or business plan competitions. Generalist studies based on analytical skills still prevail especially in France and the “Grandes Ecoles” highly elitist system.

¹ Privatizations and a new market-driven culture are currently changing this vision

Poorly adapted education and training systems

Considerable efforts are being made by teachers in schools and universities and by training personnel to adapt education to the needs of a changing world. Education and training establishments are having difficulty in coping with an ever-growing number and variety of target groups. One of the reasons for this is a severe lack of flexibility in the structures of such establishments and their approach to change. This rigidity prevents them from adjusting and reformulating their programs. Even if establishments and curricula experiment with renewal, they are still too isolated from each other.

Education systems still tend to place excessive stress on academic knowledge, even in science, or to provide highly specialized technical training. Courses, which are still too compartmentalized, do not help to convey the idea of innovation in education and training. Lastly, the concept of lifelong education and training has still to be developed.

The level and dissemination of technical education is still inadequate in Europe. There are several reasons for this:

- Science and technology are inadequately covered in basic teaching
- Technical disciplines are rarely given the recognition they deserve, since they are not regarded as “academic”. As a result, they are usually relegated to fallback status
- There is too little technology content in the teaching of scientific disciplines; teacher training fails to keep up with advances in the sciences; there are too few women involved in science and technology courses
- Teaching approaches which leave too little space for personal research, experimentation and discovery, the acquisition of key lateral skills (project work, teamwork, communication) and training in the new production environment in industry (understanding markets and demand, preparations for becoming an entrepreneur, quality research)

- Difficulty in rapidly supplementing training courses with hybrid subjects relevant to new vocations
- Lastly, the relational and communication skills essential to teamwork and exchanges with partners in different fields are still often ignored

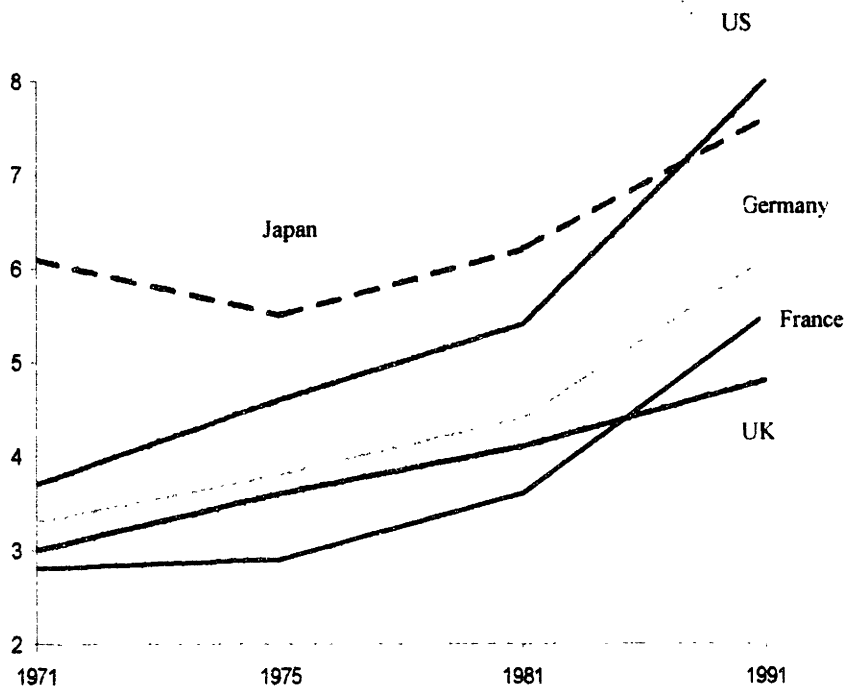


Figure 3-11: Total Research Scientists and Engineers per thousand labor force

Source: Community Innovation Survey, European Commission 1994

	Europe	USA	Japan
Number of Researchers in 1993	774,071	962,700	526,501
Number of Researchers per thousand persons in work in 1993	4.7	7.4	8.0
Number of Researchers in business enterprises in 1993	376,000	765,000	367,000
Number of researchers in business enterprises (per thousand employed in business) in 1993	2	6	6

Figure 3-12: Comparison of R&D efforts within the Triad

Source: Cordis, European Commission

Too Little Mobility

Innovation thrives on exchange, comparison, interaction and mixing. Cross-fertilization of ideas and personal mobility, particularly between the research world, universities and industry, are important for creating and disseminating new discoveries.

Europe is not well positioned in comparison with its main competitors. Despite the progress made in setting up the single market, there are still many obstacles to personal mobility and the transfer of ideas. This is one of Europe's most remarkable paradoxes: goods, capital and services move around more easily than people and know-how.

- In the European Union the need for an overall approach to taxation and social security contributions is particularly apparent in border regions where worker mobility can often be hampered by the lack of coordination between tax and social security schemes. The combination of high taxation in the country of residence and high social security contributions in the country of employment is a real obstacle to the free movement of highly skilled workers, i.e. those who contribute most to spreading innovation.

- The administrative inflexibility of educational systems makes it far more difficult in Europe to change schools or universities in mid-year (because of different scheduling of academic years, enrollment fees) and do not always make it possible to attend training schemes in another Member State. Some progress has been made at Community level in recognizing academic qualifications thanks to the ECTS system devised as part of the Erasmus program. The experience of mobility between universities and enterprises as part of the COMETT program has improved matters in this field. There is still a lot to be done, however, with regard to the recognition of vocational qualifications. There are only a few isolated sectoral instances.
- The predominance of the diploma as the means of recognizing individual skills blocks any genuine mobility both between and within companies. There is as yet no real recognition of the know-how accumulated by an individual throughout his career. New ways of recognizing skills need to be introduced.
- The lack of a real mortgage market means that the process of selling and buying accommodation when moving from one region or country to another is slow and difficult. In the USA this problem can be dealt with a few days.
- Researchers wishing to work in different Member States encounter a wide variety of tax and social problems which block their mobility within the EU. This is paradoxical in view to promote mobility, especially through the program for the training and mobility of researchers. Moreover, with a few exceptions such as Germany, transfers between universities, public research and industry are difficult not only for cultural reasons, but also because of professional rules and social or tax systems.
- Even within firms, recruitment of managerial staff is very much a closed shop in many Member States, and job mobility (particularly of the lateral variety, i.e. moves from one job to another in the same firm) is limited. In Japan, on the other hand, the job mobility which is systematically organized within large companies is often quoted as one of the

main factors in their ability to adapt and to exchange information internally- two major competitive assets.

- Finally, and not least, another weakness affecting mobility is the shortage of multilingual specialists able to move from one country to another without problem of cultural adaptation.

Some Cultural Issues

Creating a more entrepreneurial Europe will also require a change of mindset- from the earliest formative years of education to high school, training college and university. A new approach to risk-taking, wealth creation, entrepreneurship, employment mobility and collaboration between universities and businesses needs to be triggered. An example of the current mindset consists of the Bankruptcy perception. The right to fail is not admitted in Europe where legal, financial and cultural issues surrounding such failure are extremely harsh. The following figure illustrates how people save, and shows that Europeans are risk-adverse investors in general.

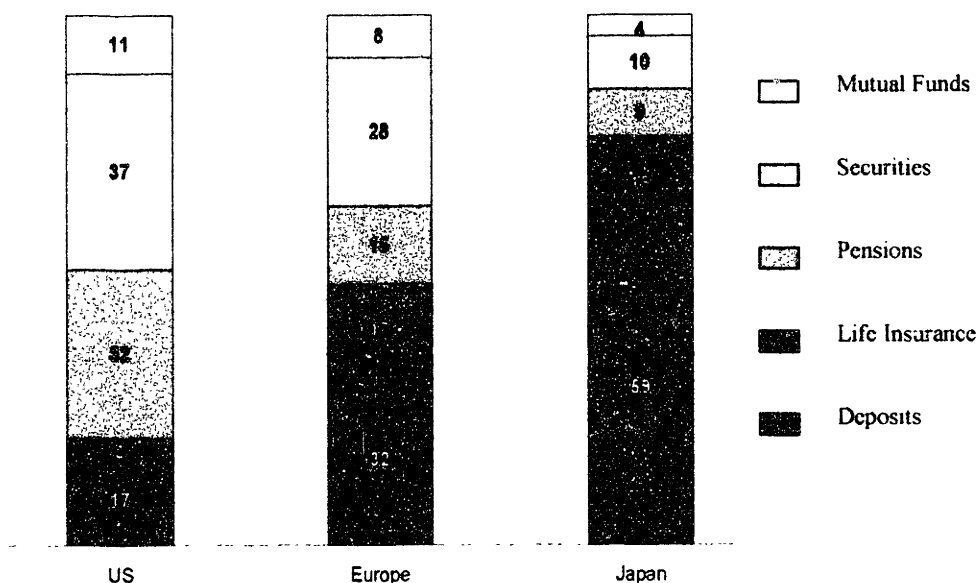


Figure 3-13: How people save and invest in the world's largest economies

Source: Goldman Sachs, 04/96

3.4.3 Lack of Regional Clusters to Foster Innovation

According to Michael Porter [Porter, 35, 1998], clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. Clusters affect competition in three broad ways:

1. By increasing the productivity of companies based in the area;
2. By driving the direction and pace of innovation, which underpins future productivity growth;
3. By stimulating the formation of new businesses, which expands and strengthens the cluster itself.

Clusters do more than make opportunities for innovation more visible. They also provide the capacity and the flexibility to act rapidly. A company within a cluster often can source what it needs to implement innovations more quickly.

Clusters are conducive to new business formation for a variety of reasons. Individuals working within a cluster can more easily perceive gaps in products or services around which they can build businesses. Beyond that, barriers to entry are lower than elsewhere. Needed assets, skills, inputs, and staff are often readily available at the cluster location, waiting to be assembled in a new enterprise. Local financial institutions and investors, already familiar with the cluster, may require a lower risk premium on capital. In addition, the cluster often presents a significant local market, and an entrepreneur may benefit from established relationships. All of these factors reduce the perceived risks of entry- and of exit, should the enterprise fail

The formation of new businesses within a cluster is part of a positive feedback loop. An expanded cluster amplifies all the benefits already mentioned- it increases the collective pool of competitive resources, which benefits all the cluster's members. The net result is that companies in the cluster advance to rivals at other locations.

The European Situation

In Europe there exists few geographic concentrations of high-tech clusters of SMEs as compared to the US. Neither are the European clusters as deep nor as integrated as in the US. Networking of SMEs also seems less easy in the EU than in the US. Yet the ability of companies to tap the best available competencies and resources through flexible cooperation patterns are key assets for innovation and competition.

The lack of networking between European research and financial circles is particularly damaging. It accounts for a general lack of understanding and awareness of financing options, increases access times to finance and creates information asymmetries which in turn raise costs.



Examples of some technology clusters include:

- Cambridge Science Park (UK)
- Surrey Research Park (UK)
- Parque Tecnológico de Andalucía (SPA)
- Sophia Antipolis (FRA)
- Gorilla Park (NET)
- Innopoli (FIN)
- Turku Technology Center (FIN)

- Rennes Atlantic Science Park (FRA)
- The National Digital Park (IRE)
- Shannon Free Zone (IRE)
- Oxford Science Park (UK)
- TechnologiePark Heidelberg (GER)
- Vasteras Technology Park (SWE)
- Atrium 21 (SWE)
- Hoeyteknologisenteret Bergen (NOR)

The US Clusters: Silicon Valley and Route 128¹

During the 1970s Northern California's Silicon Valley and Boston's Route 128 attracted international acclaim as the world's leading centers of innovation in electronics. Both were celebrated for their technological vitality, entrepreneurship, and extraordinary economic growth. With common origins in university-based research and postwar military spending, the two were often compared. They were also widely imitated. As traditional manufacturing sectors and regions fell into crisis, policymakers and planners around the world looked to these fast-growing regions and their "sunrise" industries as models of industrial revitalization and sought to replicate their success by building science parks, funding new enterprises, and promoting links between industry and universities.

Silicon Valley has a regional network-based industrial system that promotes collective learning and flexible adjustment among specialist producers of a complex of related technologies. The region's dense social networks and open labor markets encourage experimentation and entrepreneurship. Companies compete intensively while at the same time learning from one another about changing markets and technologies through informal communication and collaborative practices; and loosely linked team structures encourage horizontal communication among firm divisions and with outside suppliers and customers. The functional boundaries within firms are porous in a network system, as are the boundaries within firms themselves and between firms and local institutions such as trade associations and universities.

¹ The following chapter is inspired by "Regional Advantage" written by Annalee Saxenian

The Route 128 region, in contrast, is dominated by a small number of relatively integrated corporations. Its industrial system is based on independent firms that internalize a wide range of productive activities. Practices of secrecy and corporate loyalty govern relations between firms and their customers, suppliers, and competitors, reinforcing a regional culture that encourages stability and self-reliance. Corporate hierarchies ensure that authority remains centralized and information tends to flow vertically. The boundaries between and within firms and between firms and local institutions thus remain far more distinct in this independent firm-based system.

3.4.4 Taxation Issues

The taxation of risk capital and equity (public and private) is crucial for determining its propensity of use and deployment. This matters both on the demand side (the high growth companies seeking finance) and the supply side (the institutional and individual investor). The stability and predictability of the overall tax environment is also important for investors.

As might be expected the picture in the European Union is a complex one-varying considerably from Member State to Member State. But the crucial questions to be kept in mind are the following:

- Does the overall tax system help or hinder innovation and the development of risk capital investments?
- Are other financial instruments taxed more favorably than risk capital?

While it is difficult to give a clear overall judgment, the weight of evidence suggests there are a variety of issues and problems that require immediate attention by the Member States in order to ensure the right incentives are present in the economy, whilst recognizing that favorable tax investment is carefully targeted on those investors taking genuine risks. Among some of the most important issues are:

The Relative Taxation of Debt (Interest) and Equity (Dividends, Retained Earnings)

A broad brush analysis of Member States practices indicates that marginal tax rates applied to debt (interest income) appear, in general, to be significantly lower than those charged on equity income (dividends and retained earnings)- although this difference can sometimes be alleviated by various tax credits.

Taxation rates also differ between individuals and corporations. It is also the case that in the EU foreign dividends tend to be taxed at a higher rate than domestic dividends. The fact that the EU is more heavily dependent on debt financing compared to the US increases the significance of any tax treatment favoring debt, even though the EU and US have similar tax structures in many respects.

All things considered, if confirmed, tax structures of this type will not be providing the right economic signals or incentives to encourage risk-taking investment that is so important for employment growth.

Indeed, the adverse effect of tax structures of this type may be even greater given that, in order to attract investors, there should be an attractive “premium” for riskier venture capital investments compared to risk free interest income. Some Member States have begun to introduce some targeted tax incentives to encourage risk investment, for example, tax reductions for private individuals’ investment in business start-ups.

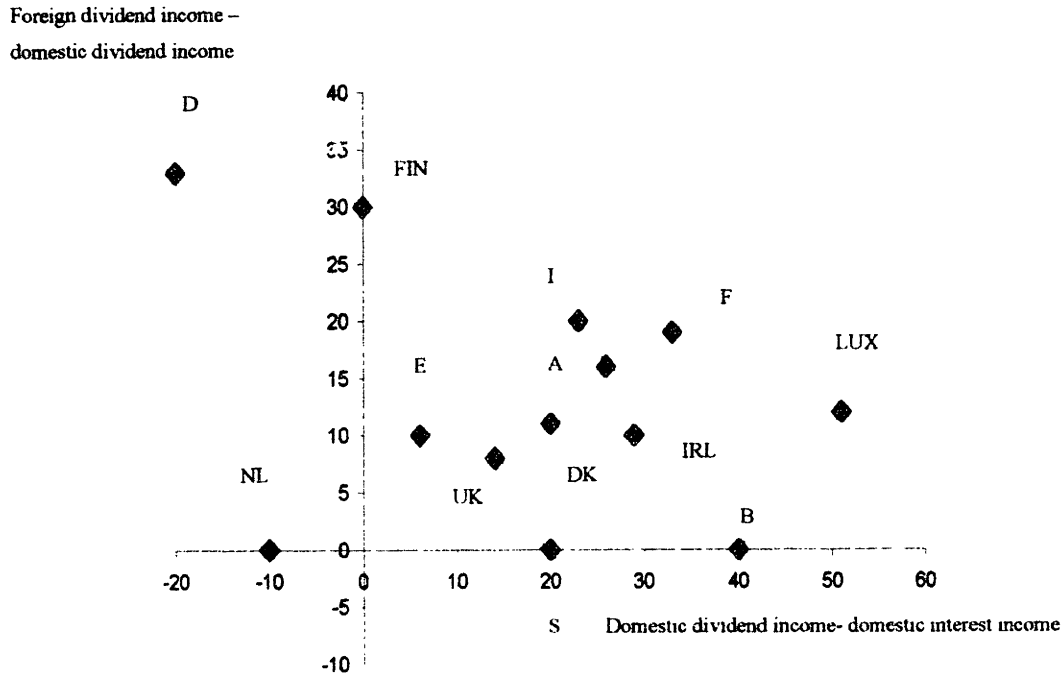


Figure 3-14: Taxation of capital income. Differences in taxation of different sources of capital income (tax rates in percent)

Source: European economy (December 1997), Advancing financial integration, based on a study carried out by the Confederation Fiscale Europeenne in 1996-97

Interest income from debt instruments (bank accounts and bonds) tend to be subject to lower rates of taxation than direct participation in companies (dividend income). This is not in line with the general objective of promoting entrepreneurship and job creation. The creation of a pan-European capital market is also hindered by the differences in taxation between foreign and domestic dividend income.

The above graph shows the taxation difference between dividend income and interest income and between foreign dividends and domestic dividends. It gives a general picture based on the basic provisions concerning the marginal rates that apply (maximum rates or withholding tax depending on the case) to domestic and foreign income from interest and dividends earned by resident individual investors.

Concerning dividends, the tax rates calculated take into account taxation on companies, on investors and, where appropriate, any tax credits. It does not take into account specific provisions for limited amounts or specific types of investments that can, in some cases alleviate the tax burden. It does not reflect either any taxation changes since December 1996/January 1997.

Capital Gains Tax (CGT)

CGT matters in two ways. Firstly, because CGT applies in the disposal of assets and hence affects the rate of return on investments. It also influences decisions by individual investors, financial institutions and venture capitalists to invest in early start-up companies.

Secondly, CGT can affect parts of remuneration packages in the form of assets or future assets. This is crucial in the case of early start-up firms, who will be unable to pay large salaries to their employees. But what these firms can do is offer stock options- in other words a promise to the managers and workforce of significant rewards for taking the risk of joining a start up company. This kind of equity pay, together with employee related ownership plans, is paying a critical role in the growth of dynamic knowledge- intensive business in the US.

The venture capital community in the European Union is firmly of the view that the current tax treatment of stock options in most Member States is acting as a significant disincentive to the development of new start-up companies, and hence the spread of risk capital. This disincentive is clear in cases where some Member States levy taxation before the sale of the shares by the stock option holder.

Other issues that need very careful examination are the overall tax regimes for start-up companies (where positive incentives are necessary); the early tax treatment of retained earnings for high tech start-ups; various forms of income tax relief for longer term risk investments- with particular attention to the needs of high tech companies.

Taxation of Venture Capital Funds

Venture capital funds will be an essential part of the European matrix of risk capital instruments available in the EU in the future. It is extremely important the Member States clarify the tax environment- thereby improving transparency and predictability for the funds and their investors. The tax treatment of those funds should be as favorable as possible, coherent with other elements of tax regimes applicable to venture capital, and be such as to act as an incentive for their overall development in the EU.

3.4.5 Financing Issues

The Community's ability to innovate depends largely on the effectiveness of its innovation-financing system. It is companies themselves and their potential partners in the financial system (banks, collectors of long-term savings, pension funds, retirement funds, venture capital firms, stock exchanges, etc.) which have to provide the bulk of innovation finance. Financing is the obstacle to innovation most often quoted by firms, whatever their size, in all Member States of the European Union and in virtually all sectors

The main shortcomings affecting the supply of risk capital financing are the following:

- A neglect of innovation on the part of institutional investors holding long-term savings (retirement funds and pension funds, far less well-developed in Europe than in the United States). This is linked in many cases to an absence of information, a lack of market transparency and liquidity and, in many countries, excessive prudence in the choice of placement.
- Less tendency for individual investors to consider companies not listed on a stock exchange, despite interesting schemes for mobilizing them in the United Kingdom and Denmark. Collectively in Europe they represent an investment volume which is deemed to be several times several times that of risk capital funds. A favorable tax system in the US, particularly under the legal form of the Research Development Limited Partnership, means that these individual investors provide half the seed capital needed by young high-technology companies.

- The lack of an electronic stock market specializing in growth or high-tech enterprise securities, similar to NASDAQ in the US. This market enables dynamic firms to be recapitalized and offers venture capital companies an investment exit mechanism, thus constantly replenishing the flow of funds to this type of firm. Despite the recent launch of several competing projects, European firms do not yet have access to equivalent services. Despite the forthcoming entry into force of the Directive on financial services, there are still many obstacles preventing such a market from functioning harmoniously (no pan-European market regulating authority, too few professional analysts and market makers, etc...).
- There is under-capitalization of SMEs. This is linked to national tax systems which privilege debt financing to the detriment of long-term financing and is aggravated by the frequent unwillingness of entrepreneurs to yield some say in their business and some of the financial fallout of success to partners who provide venture capital.
- The major commercial banks in most countries are reluctant to get involved in innovation financing. Their ability to assess the technical risks of innovation and their relationships with organizations specializing in technology or innovation are still largely under-developed. This is all the more regrettable in the light of the successful experiments which show that getting involved in financing innovative projects and networking with innovation agencies may well be profitable for the banks concerned.

3.4.6 Administrative Barriers

Starting up an SME to implement an innovation often has to be carried out very rapidly, in order to have the time advantage over competitors. Delays of over three months can be fatal to the introduction of new products or services. However, in many Member States there still are long and complicated requirements to form companies which hamper their creation. In Europe, the most favorable registration schemes can be found in the UK, Ireland, Sweden, Luxembourg, Denmark where registration prerequisites are very few, the cost of registration is limited and the time delays are minimal.

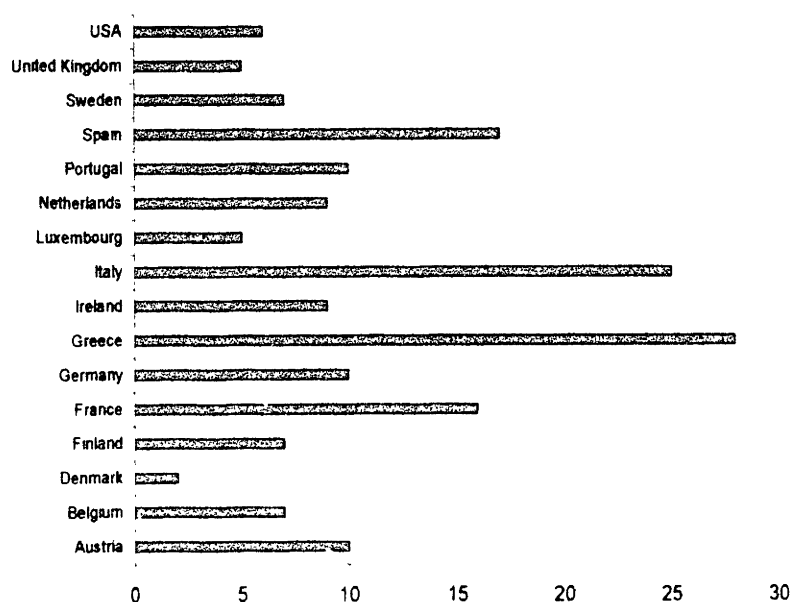


Figure 3-15: Total number of procedures for company registration.

Source: Project EIMS 96/142

The administrative environment in which companies find themselves is unnecessarily complex. It costs European firms an estimated extra Euro 180-230 billion, renders them less efficient and hence undermines their innovative capacity.

All these formalities place a very heavy burden on companies, particularly newly founded ones. The time spent on administration is often lost to innovation in a young SME with a small managerial staff.

Moreover, because of a lack of internal coordination, administration often means filing in multiple declarations and producing the same information repeatedly. In most European countries, unlike the USA, the process of setting up a business and recruiting one's first staff is very much like running the gauntlet. It often takes more than month and costs several thousand Euros.

These obstacles to start-up companies are harmful, particularly to new high-technology firms, which are essential creators and disseminators of new products and services and help renew the economic fabric and industrial structures in growth sectors.

Legal formulae ill-suited to European cooperation

The existing legal formulae do not encourage firms to cooperate or to expand on a European scale. The EEIG (European Economic Interest Grouping) is the only statutory instrument in force for European cooperation. Its purpose is to facilitate, develop or improve the results of the economic activity of the Community's economic operations. However, it remains a limited or unsuitable instrument for innovation, exploitation of research results and technology development. Each member of the EEIG is held personally responsible for the debts of the grouping, and to an unlimited extent; the EEIG may employ no more than 500 persons; its activities may be no more than auxiliary to that of its members; it may take no part or action in a member company and it may not offer shares to the public.

As stated in the Ciampi report, the European Company would be the ideal instrument to enable firms to cooperate and restructure beyond frontiers, and a means of bypassing the legislative constraints and practices of fifteen different legal systems that obstruct technological innovation.

A growing number of companies have adopted new strategies and structures so as to be quicker and more flexible in taking advantage of the new opportunities offered by the single market. Unlike US companies, however, these European firms still have to operate through a complex and costly network of subsidiaries established in other Member States. The internal

market will never be achieved unless European companies can operate more flexibly and more effectively throughout the Union.

3.4.7 Institutional and Regulatory Barriers

The European Union's institutional and regulatory framework does not provide the necessary incentives or create the required transparency, stability and predictability for the growth of pan-European risk capital. A heavy price is paid in poor job creation and sub-optimal economic growth. The Commission itself analyzed the following shortcomings in the regulatory framework, which contribute most to this sub-optimal outcome.

Absence of Community Legislation for the Venture Capital Funds

A harmonized, transparent structure is lacking at Community level which will enable venture capital funds to raise capital by marketing their units in other Member States. Currently, Member States restrict the commercialization of partner country funds by making liberal use of the "general good" or due diligence principle. This situation prevents venture capital funds from acquiring the critical mass to operate viably.

Traditional Institutional Investors (UCITS, Insurance Companies, Pension Funds)

Institutional investors are currently prevented from putting part of their massive resources at the disposal of companies needing risk capital. The nature of the underlying restrictions vary depending on whether SME equity in question is listed or not. In the first case, the emergence of some new regulated stock markets (e.g. EASDAQ, EURO NM, AIM, etc.) should be able to provide a gateway for SMEs to raise equity finance allowing investors to subscribe under the same limitations as those applying to large companies. Supervisors and policy-makers must ensure that listing conditions and other requirements encourage SMEs to make full use of these new facilities.

In the case of unlisted shares, which are considered to be illiquid, institutional investors are subject to stricter restrictions, even prohibition to invest. In practice, Community legislation on UCITS deters investment in non-liquid assets by fund managers- because investors may request at any moment the redemption of their units. Due to these constraints, channeling a

significant portion of the large pools of institutional investment towards unlisted SME equity requires the development of specialist venture-capital funds which are authorized to invest in illiquid assets. As the SME prospers and becomes large enough to list its shares in the new regulated markets, they will be able to attract interest from other institutional investors.

In the case of pension funds (where legislation has not been harmonized at EU level) and insurance companies, restrictions abound as regards the placement of funds by category of asset. This severely distorts the optimal allocation of resources in the single market. In particular, institutional investors are generally unable to incorporate the optimal quantities of risk capital and equities in their portfolios.

These regulatory restrictions are compounded by the conservative attitude of fund managers in many Member States regarding how they match assets and liabilities. Consequently, many fund managers in the EU fail to exploit their full leeway in relation to investment in equity or in non-liquid assets. What is required is sensible, prudential rules that allow pension funds to optimize their portfolio structures with appropriate allocations of pan-European equity, international equity, real estate and fixed income assets.

The disappearance of currency matching restrictions may broaden the horizons of fund managers and encourage them to enlarge the proportion of equity in their portfolios whilst protecting pension fund beneficiaries through “prudent man” regulations. It is very important the Member States ensure that investment restrictions that are allowed under the Treaty for prudential reasons are not used for discriminating against foreign assets nor as an excuse to favor privileged access for the financing of national, regional or local government.

Investment Services Directive

The Investment Services Directive (ISD) has only recently entered into force and its effects have yet to materialize. However, Article 11 currently offers a substantial margin of discretion to host-country supervisors as regards the application of business conduct rules to management companies trading in securities. As integration of equity markets gathers pace under the impulse of EMU, there may be a need to review again the host country supervisors’

role in imposing local conduct business rules. Without such adaptation, it will remain difficult for financial services and products, which are acceptable in one Member State, to be traded in other EU markets. Regulatory fragmentation has a particularly severe impact on risk capital markets.

Investors may not be willing to deal cross-border unless high quality standards for common rules are in place. Therefore mechanisms for closer co-operation between supervisory authorities will need to be reinforced. A positive step in this direction has been the creation of FESCO (Forum of European Securities Commissions) at the end of 1997. This body will concentrate on establishing procedures to deal with day-to-day cross-border matters in the field of supervision. Its work will complement that of the High-level Securities Supervisors Committee (to be substituted by the Securities Committee once the relevant directive is adopted) which concentrates on regulatory matters.

Prospectuses

Up to now prospectuses have been little used for cross-border purposes. Issuers have not shown great interest in cross-border issues/listing. With the launch of the single currency and the subsequent integration of securities markets in the Community this situation may change dramatically.

The limited experience seems to show that, in practice, large companies and SMEs may still face lengthy and costly procedures in case of multilisting or simultaneous public offers in several Member States. In addition, SMEs wishing to raise capital through an IPO prior to becoming listed on a stock exchange may not benefit from automatic procedures available to large companies. This unintentional discrimination results from the fact that at the time of adoption of the legislation, it was not expected that SMEs would seek listings on official stock exchanges in large numbers. There is clear need to bring regulation into line with contemporary market reality.

Accounting Rules

Ideally, all EU companies seeking equity financing should be able to do so on the basis of one set of accounts. This would save costs resulting from publishing different sets of accounts. It would also facilitate the simultaneous listing in different EU, or non-EU markets. However, this situation does not currently prevail.

Until now, the problem of being forced to prepare more than one set of accounts has mainly affected big EU companies wishing to raise capital in international markets. However, the problem has now also arisen for SMEs because stock exchanges specializing in high-risk stocks require SMEs to prepare an additional set of accounts based on International Accounting Standards or US GAAP.

The introduction of the Euro will require a new look at the area of accounting rules. Company accounts are not readily comparable because of the important number of accounting options contained in the Accounting Directives, because of divergences in respect of basis accounting (e.g. prudence principle), or because of a lack of harmonization on a number of important issues such as deferred taxation, pension liabilities, etc.

This discourages pan-European private and institutional investment. In the long-term, a single set of accountancy rules in Europe taking into account international standards is desirable in order to satisfy the requirements of international investors. This will probably require a modification of the directives that concern company accounting (78/660/CEE, 83/349/CEE, 84/253/CEE).

3.5 A Policy Response from the European Commission: The European Seed Capital Fund Scheme

Problems in the supply of seed and early-stage venture capital remain endemic in Europe. In the absence of professional investors or the complementary, informal investor/business angel sector, prescriptions to address the 'equity gap' issues are heavily dependent on public initiatives. The SCFS represents a European response. It is properly judged according to its objectives [Murray, 36, 1998]. Yet, as a pilot program, its findings have their greatest import in influencing subsequent EU regional and enterprise policies.

3.5.1 Introduction to the SCFS initiative

Concern at the apparent paucity and limited regional distribution of third party equity finance for European high tech start-up firms engendered a policy response from the European Commission. In October 1988, the Commission adopted a Community pilot scheme to stimulate seed capital. The stated objectives of the scheme were:

“...To foster enterprise creation in the Community by strengthening the financing opportunities available to new enterprises, through the creation of 24 new seed capital projects throughout the Community, and by improving the quality and survival rate of seed capital projects, through the services the funds will provide to the projects. This pilot scheme aims to stimulate private sector and start-up investment by providing financial incentives to these new funds” [EC document, 37, 1988]

The focus of the pilot scheme was 'new or embryonic companies that require financial and/or management support for development into companies capable of raising first round financing. Each of the supported funds in the scheme received a reimbursable, interest-free advance of up to 50% of the annual operating costs of the fund over a three to five year period.

This loan is due for repayment after 10 years when it was deemed that sufficient investment realizations would have been made to enable the return of the advance. Those funds which have not achieved net investment returns above a 'hurdle' (referenced to long term treasury

bonds plus five percentage points during the period of the fund's existence) were to be absolved from repaying the loan.

3.5.2 Conclusions and discussion about the SCFS

By February 1995, at a budgeted public investment of Euro 8.76 million, 23 funds (and a support network) had been created and had attracted Euro 41 million of institutional finance. The 188 extant, early-stage enterprises had created 2,085 direct jobs, predominantly in technology-related activities. Failed enterprises represented 17.5% of investments.

The explicit objectives of the Scheme had been successfully realized and the estimated subsidies per job and enterprise created appeared highly cost effective. EU intervention cannot be challenged on either opportunity cost grounds, or a displacing (crowding-out) established private markets for venture capital.

However, conclusions must remain circumspect until the longer-term viability of both new enterprises and the funds as economic entities are proven. The urgent need of the high-tech funds for additional finance raises serious concerns as to future viability. Without exception, the small scale of all funds prejudices viability given the penal effect of fixed-management costs.

This future viability may well be conditional on the development of what [Florida and Kenny, 38, 1988] describe as indigenous 'technology infrastructures' and by which additional finance, information and advice is efficiently provided to high tech start-up firms and their investors through symbiotic local linkages.

All funds raised institutional finance on the basis of securing an acceptable return for their investors. This return can only be met by the subsequent, profitable sale of their portfolio companies. At the end of the 10-year funding period, if the investors do not receive a risk and time adjusted return on their capital, they have in effect subsidized the social goals of enterprise creation. This is likely to severely curtail future private fund raising in addition to increasing significantly the real cost of the Scheme.

Such schemes are likely to be necessary but not sufficient catalysts for continued regional enterprise/employment growth in the absence of complementary, techno-commercial networks to assist the subsequent development of the new firms.

Furthermore, this scheme fuels the debate of pan-European solutions versus national initiatives. This chapter has listed most of the impediments to an efficient risk capital market on a European basis. However, given the economic specificities and regional disparities of each European nation, a wide-scale solution, which would not take them into consideration, would have a diminished likelihood of success.

Given the European situation, and its shortcomings, the next chapter will analyze the specific case of France.

Chapter 4: Venture Capital in France

4.1 Introduction

In the previous chapter, we have identified the main barriers to innovation, entrepreneurship and the development of venture capital in Europe. Cultural, legal, fiscal, financial and regulatory issues act as impediments to the development of an efficient risk capital market.

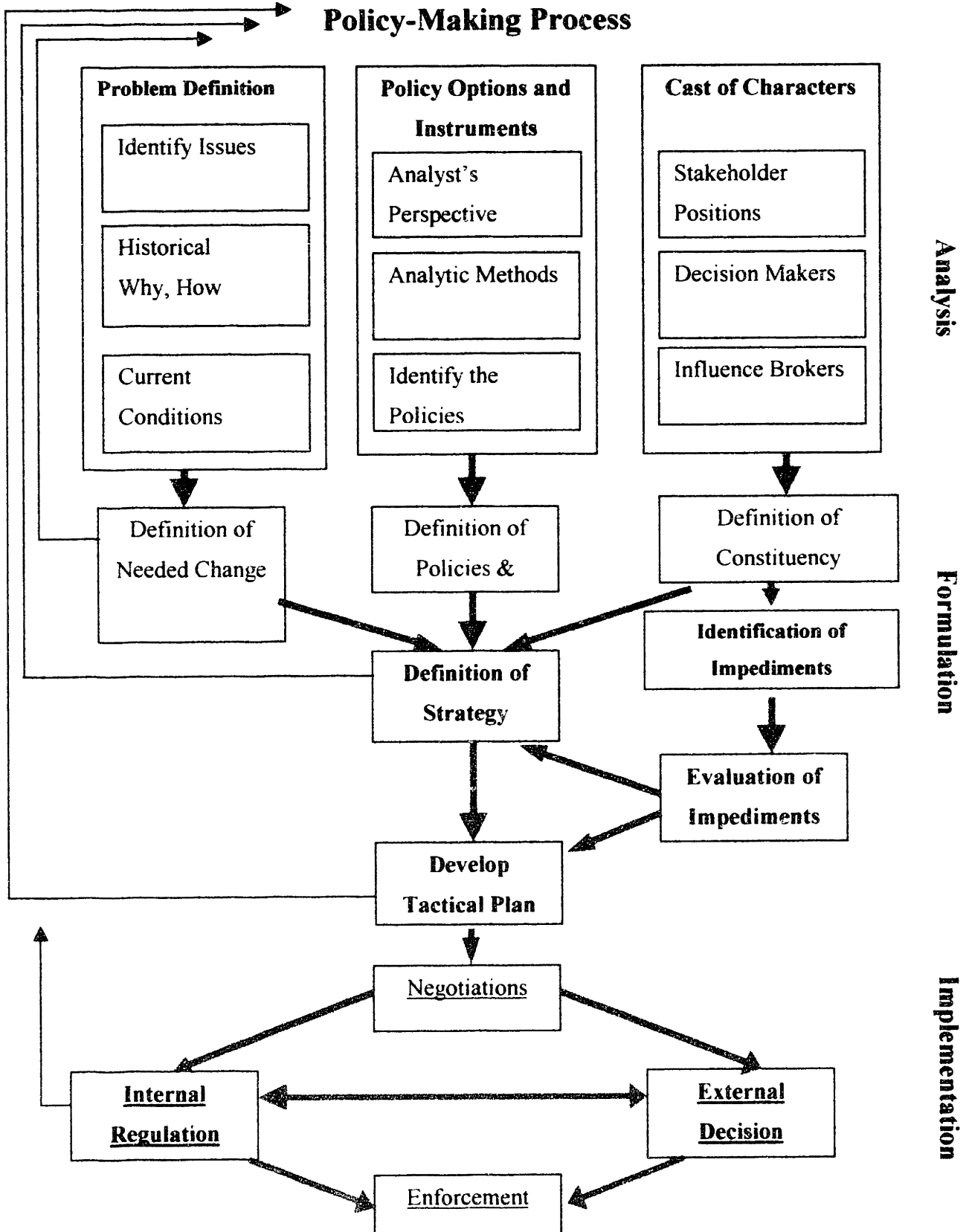
This chapter and the following will focus on the case of France. Using a methodology developed in the Technology and Policy Proseminar [Tabors, 38, 1998], we will organize these chapters in three parts: analysis, formulation and implementation (See Figure 4.1.)

Former Finance minister Dominique Strauss Kahn recently declared “France is a country without capital or capitalists”. Why should venture capital represent a key element of any French policy to promote entrepreneurship and innovation? What are the current initiatives, and how to assess them?

The importance of venture capital and informal venture capital has already been assessed in the chapter 2. However, is this model the right one for France? Given the deep-rooted tradition of public subsidized initiatives and government control, government venture capital may be the most appropriate solution. Who are the stakeholders, decision-makers and influence brokers involved in venture capital in France? This will be the next question to study for they will be key determinants of any policy initiatives.

How to develop venture capital in France given the legal and regulatory framework? What are the main barriers and impediments to this development? How to formulate a policy analysis, and finally how to implement it? Finally, we will try to establish a policy recommendation aimed to the stakeholders and the Ministry of Telecommunications and Industry in particular which will have a preponderant role to play.

Figure 4.1: Description of the Policy-Making Process



4.2 Analysis of Venture Capital in France

4.2.1 Problem Definition

History

The French venture capital history starts in 1965. The first venture capital vehicle was created in Paris by the General Doriot after he played a major role in the American venture capital industry with ARD (American Research and Development, see chapter 3). It was a difficult start because the European investors were doubtful of the success of the venture. However, after demonstrating its first striking success, its capital grew to \$22.6m, ranking first among 60 of the most famous European institutions.

Since the mid-1980s the industry has undergone a rapid development. This was mainly due to two milestones: the creation of the two structures, the FCPR (Fonds Commun de Placement a Risques) and the SCR (Societe de Capital Risque). (See page 49 for more details)

However, in 1990, the industry faced a severe crisis reaching its peak in 1992-1993. Then, it tried to focus on consolidating smaller funds. It returned back to normal in 1994, but in 1995, the French venture capital industry restructured again, followed by a collapse in investment volume.

Another important element of the 1990s is the introduction of larger banks on the investor's side. This is also why bank captives control a significant share of the French market.

A Few Indicators about Technology in France

France is undergoing rapid changes in its economy. France, which lagged behind most of the European countries in terms of high tech penetration a couple years ago, has launched several ambitious programs to bridge the technology gap. Several key indicators confirm the existing momentum. We will look carefully at these indicators, and will try to understand the current situation and its persistent shortcomings.

In order to have a clear understanding of the recent evolution of the high technology and innovative industries in France, we should first look at the market and the trends. Mobile telephony, computers and Internet users are three key indicators that show the emergence of new users and new habits that are contrasting from the traditional users.

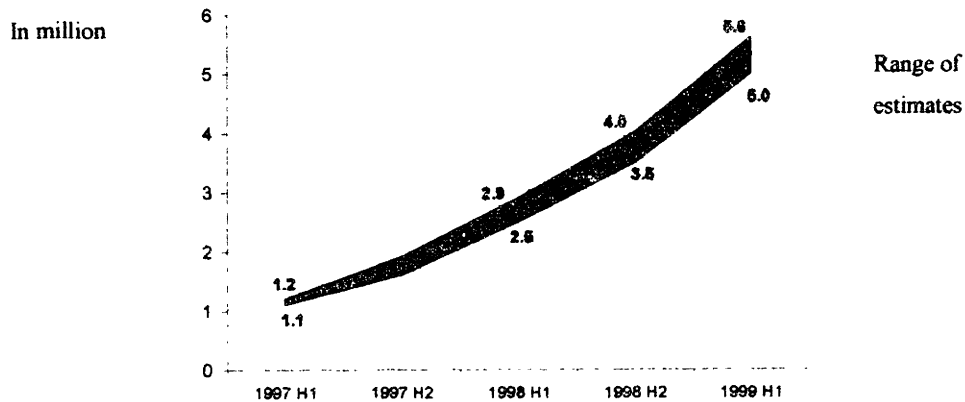


Figure 4.2: Internet Users in France. Sources: Mediangles, NOP

The growth of Internet users has been steady in the last 3 years. Currently, the Internet penetration is less than 10%. Comparatively, this penetration rate varies from 10% for Israel and Japan to more than 30% in the United States.

Another key indicator is the number of host computers in France. This number consists of the computers that have a domain name in ".fr", excluding the .com and .org types. We then compare the French figures with the rest of the world, and notice that the evolution is similar in terms of growth rate. We can also notice that France is bridging the gap with the European countries, with a growth rate of 34% in the last 6 months compared to 15% in the rest of Europe.

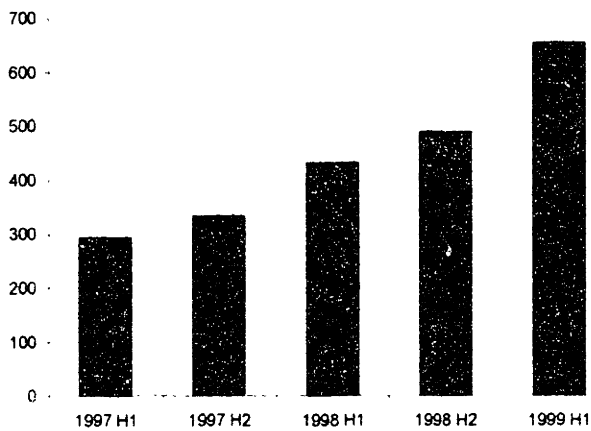


Figure 4.3: Number of Host Computers in France (in thousands) Source: Network Wizard

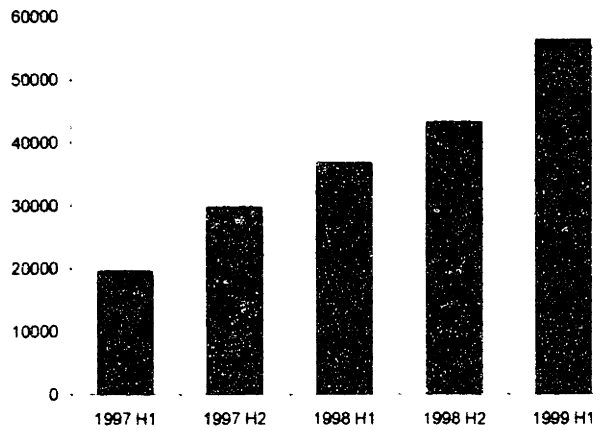


Figure 4.4: Number of Host Computers in the Rest of the World (in thousands)

The next indicator is the mobile phone users. In July 1999, one French citizen out of four has a mobile phone compared to 6% only two years ago. France has a diffusion rate of 21.4%, compared to the UK with 25.5%, Germany with 18.8% and far behind Italy with 39.9%.

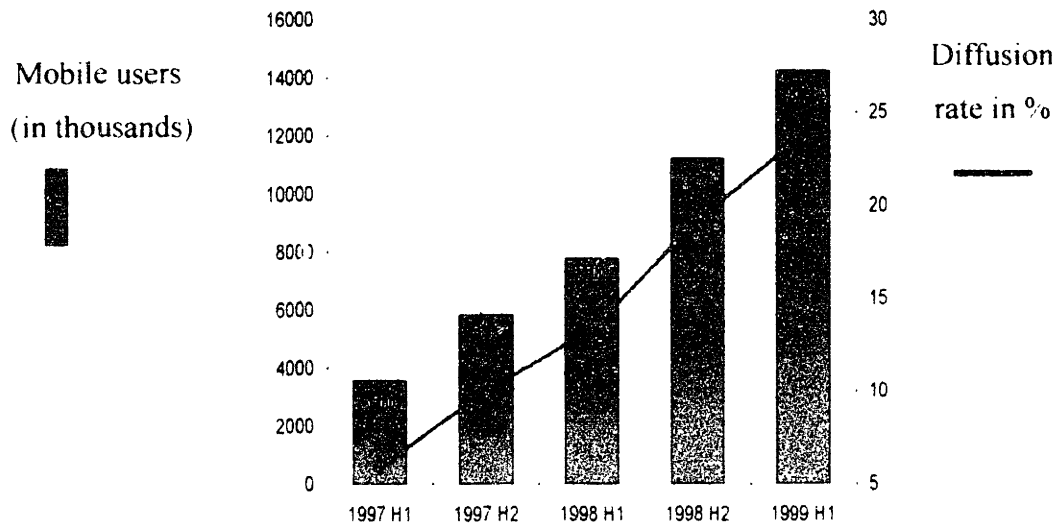


Figure 4.5: Mobile Phone Subscribers in France (in Thousands). Source: French Telecommunications Regulation Authority

The last indicator compares the revenues of a few sectors. Hence, even within technological sectors there have been significant differences in growth rate.

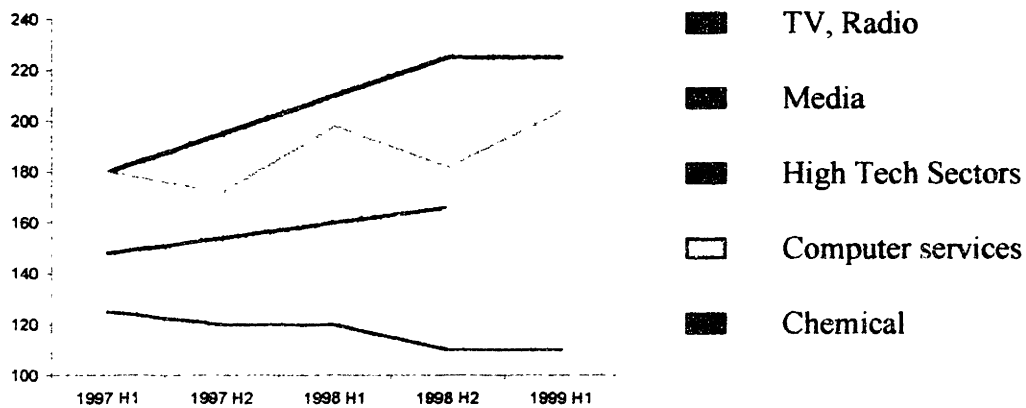


Figure 4.6: Revenues of Technology sectors based on 1990 revenues (indexed at 100)
Source: INSEE

A Few indicators about Innovation and Entrepreneurship in France

As described in the previous section, technology has penetrated France. Are there some obvious progress in terms of innovation and entrepreneurship. What are the key indicators of the situation? What are the shortcomings and the area where France still lags behind its European counterparts?

We will first focus on the new enterprise creation, and the number of companies recently listed on the Nouveau Marché. We believe these indicators show the emergence of a new phenomenon driven by innovation and risk-taking attitude.

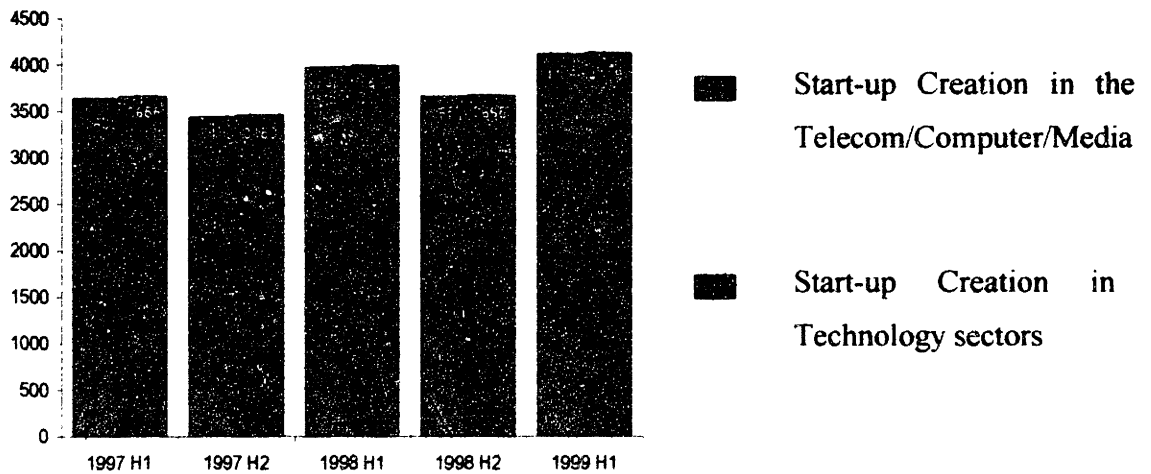


Figure 4.7: Start-up Creations in the Telecommunication/Computer/Media and Technological Sectors

We can relate these numbers of start-up creations with the IPOs on Nouveau Marché. Indeed, the more active the IPO market is, the more favorable the environment becomes for start-up creation.

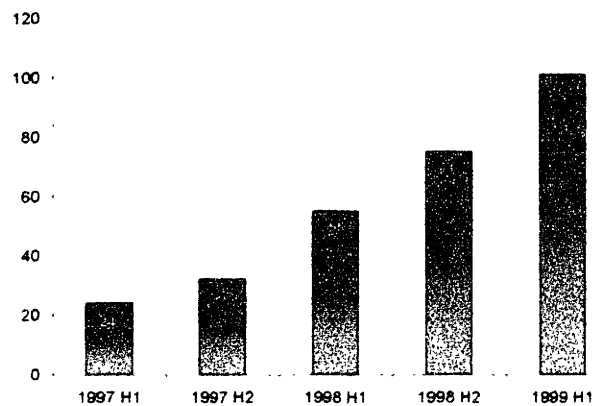


Figure 4.8: IPOs on Le Nouveau Marché

Source: Societe du Nouveau Marché

According to these figures, the IPO market is taking off on Nouveau Marché. One reason is certainly the euphoria of the stock markets, and especially for the technology companies.

We will now analyze carefully the research and innovation situation in France. It is difficult to give some measures of innovation, but some key indicators reveal important trends and shortcomings. As for innovation, patents, number of researchers, proportion of R&D spending to GNP display significant information about the situation.

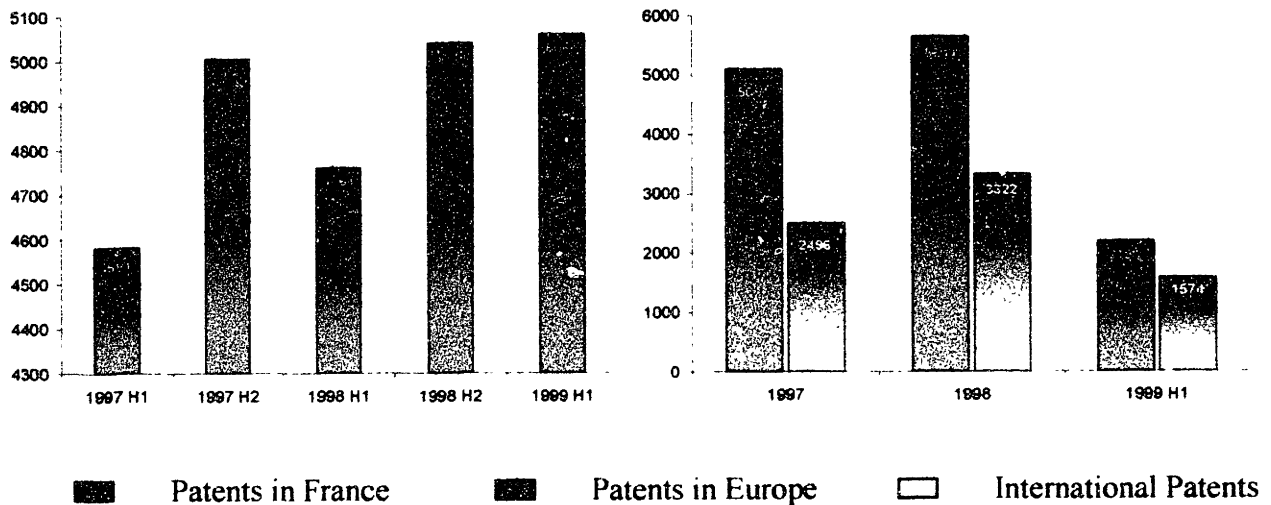


Figure 4.9: Patents Filed by French companies or French Persons

Source: INPI

For the European Patent Office, the annual growth for French patents has reached 10.9% in 1998. France is now ranked 4th after the US (28.6%), Germany (16.4%) and Japan (16.8%).

This protection can be broadened to the international level by filing with the International Patent Office which encompasses around hundred countries. France has the fastest growth rate in 1998 among developed countries. Furthermore, with 5% of the total patents, France is ranked 5th after the US (42.3%), Germany (13.6%), Japan (9.1%) and UK (6.5%).

The sectors that are the most active in patent filing are the following:

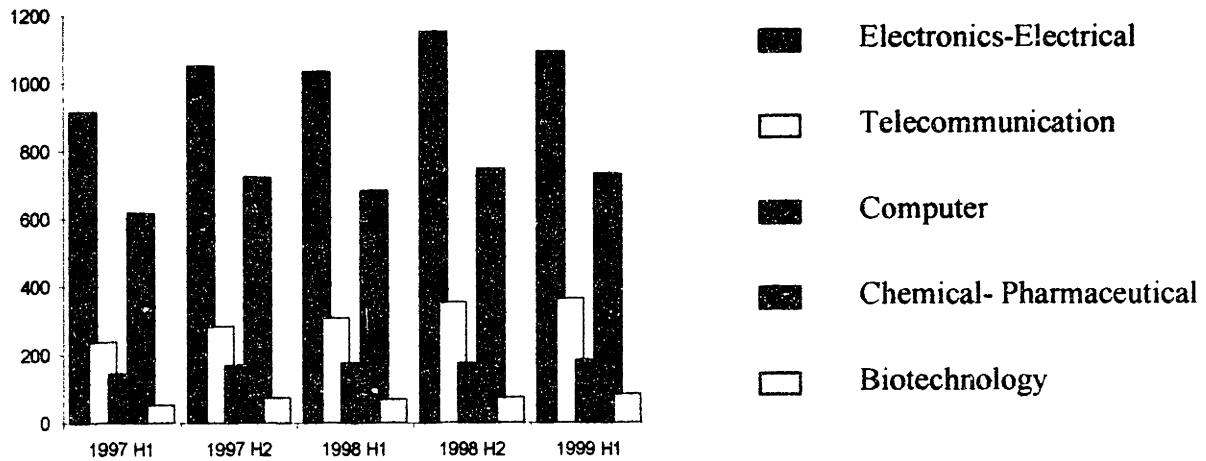


Figure 4.10: Patents Filed in France by Technological Sectors

Source: INPI

International benchmark may prove useful to understand the importance of these patents filed by French companies and researchers on the international basis.

Technological Sectors	1990		1996	
	International Share (in %)	European Share (in %)	International Share (in %)	European Share (in %)
Electronics/Electrical components	7.2	25.4	5.0	17.4
Media- Telecommunications	6.7	16.6	5.3	20.0
Computer	5.3	25.4	4.9	28.9
Instruments	10.9	22.7	7.2	18.3
Pharmaceutical	7.4	26.2	6.6	25.8
Biotechnology	5.3	17.5	6.4	21.8
Materials	8.3	21.6	7.8	18.0
Industrial Process	6.5	17.6	6.5	14.6
Environment	12.3	19.5	12.1	19.4
Transportation	10.6	18.3	12.1	22.2
Construction	11.0	20.7	5.8	16.9
TOTAL	8.4	21.6	7.2	20.2

Source. INPI and International Patent

Another set of useful indicators represent the R&D effort of France compared to other nations, as well as the number of researchers- scientists. Indeed, these people are the most likely to file patent along their research, and they should then be encouraged to commercialize these ideas.

The evolution of the ratio of national R&D expenditures to GNP over the last 25 years will picture the policies as well as trends. We will then compare the French case to developed countries to realize that France is leading other European countries in terms of National R&D expenditures to GNP ratio.

	National R&D expenditures to GNP (in %)			
	1981	1991	1994	1995
United States	2.43	2.84	2.53	2.78
Japan	2.13	2.82	2.64	2.58
Germany	2.43	2.61	2.33	2.28
France	1.97	2.41	2.38	2.34
UK	2.37	2.11	2.11	2.05
Italy	0.88	1.32	1.16	1.14
Netherlands	1.85	2.05	2.04	-
Sweden	2.29	2.89	-	3.02
Canada	1.25	1.52	1.62	1.61

Source OECD

R&D represents total public research & development undertaken by states

The number of researchers indexed to the employed population still lags behind the US and Japan, and even Germany.

	Researchers to Employed population (for one thousand)			
	1981	1985	1989	1994
United States	6.2	6.6	7.1	7.4
Japan	5.4	6.1	6.9	8.1
Germany	4.4	5.0	6.0	5.9
France	3.6	4.3	5.0	5.8
UK	4.7	4.7	4.7	5.1
Italy	2.3	2.7	3.2	3.3
Spain	1.4	1.5	2.5	2.6
Portugal	0.6	1.0	-	1.2
Netherlands	3.4	-	-	4.8
Sweden	4.1	5.0	-	6.8
Canada	3.4	-	-	5.2

Source: CECD

Another interesting indicator to study is the employer of these researchers. Do they work for private corporations, as civil servants in public research institute or in universities? The following chart gives a better understanding of the differences among countries about their national research systems.

	Break-out of Researchers by type of Employers (in %)					
	Private Companies		Public Sector		Universities	
	1981	1993	1981	1993	1981	1993
United States	73.0	79.4	8.7	6.2	14.4	13.3
Japan	62.0	69.8	9.3	5.7	26.2	21.8
Germany	61.8	51.6	14.3	15.1	22.8	25.8
France	41.0	45.9	18.4	20.0	38.2	32.5
UK	60.6	61.4	15.7	10.0	19.7	22.9
Italy	37.4	38.3	15.1	17.6	47.5	44.1
Spain	16.7	27.8	18.8	18.4	64.4	53.2
Portugal	14.1	6.3	31.4	14.0	51.8	67.6
Sweden	53.6	50.2	8.0	6.5	38.0	43.2

Source: OECD

Finally, we should also look at the sectors which receive these R&D expenditures. The following chart gives the repartition by sectors. The results are striking, and they underline the concentration of R&D expenditures in very few key sectors. Indeed, five sectors account for 65% of the R&D expenditures in France: chemical & pharmaceutical, electronics & electrical components, instruments and machinery (optics, medical...), automotive, and aerospace.

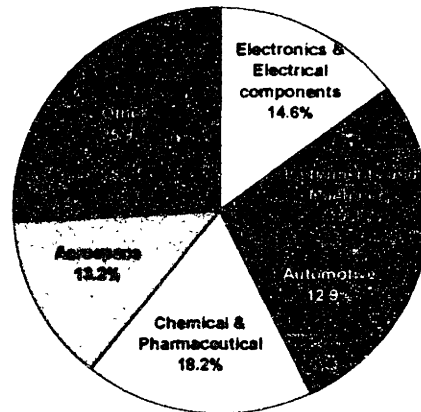


Figure 4.11: Repartition of R&D Expenditures by Sector

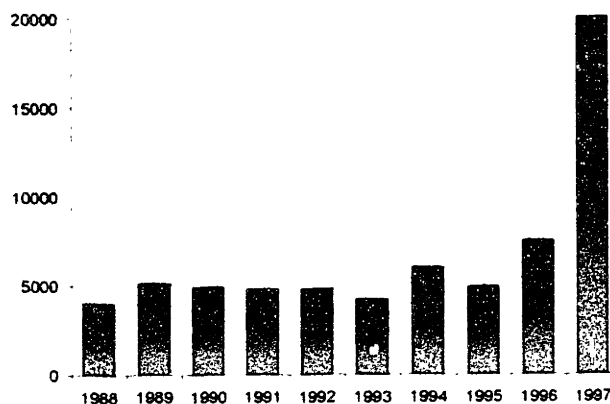
Source: Guillaume Report 1998

4.2.2 Current Situation of Venture Capital in France

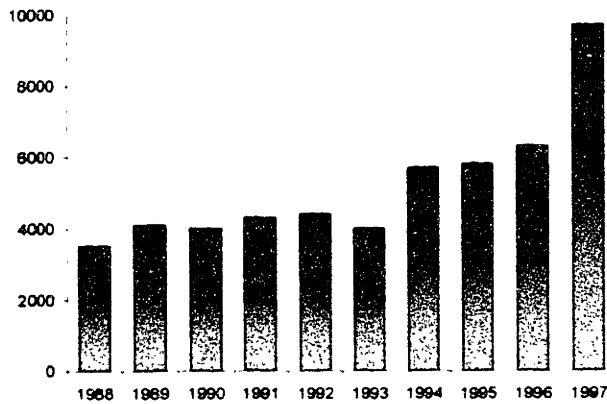
There are around 200 private equity firms in France including all types of investments. Among these firms, very few are venture capitalists, and even less early-stage investors or seed investors (for an overview of the major players, see page 50). Private equity investments have steadily increased in Europe with a surge in 1997 in both the level of investments and the level of funds raised. A new trend to be underlined is the entrance of US private equity firms in Europe, and as a consequence venture capital firms as well [Financial Times, 39, 1999].

“Private Equity funds, many of them from the US, have been bidding furiously this year for almost any business that the industrial giants of Europe have wanted to shed. Prices in the auctions for these corporate cast-offs have exceeded expectations time and again. Since competition for such unquoted investments in the US is already intense, money is spilling over into Europe and Asia”

The following figures illustrate the surge of private equity investments and funds raised in the latest years.



**Figure 4.12: Amount of funds raised
(In million Euro)**



**Figure 4.13: Amount of Private Equity
Investments (In million Euro)**

A closer look at the geographical scope of these investments shows that France comes first among the continental European countries, but far behind the UK which still attracts most of these private equity investments.

	Amount of funds raised in 1996 (in Million Euro)	Amount of funds raised 1986 - 1996 (in Million Euro)	Private Equity Investments in 1995 (in million Euro)	Private Equity Investments in 1996 (in million Euro)	Investments in 1996 (in %)
UK	3,738	25,653	2,633	2,973	43.7%
France	1,061	11,697	851	849	12.5%
Germany	340	5,168	666	715	10.5%
Netherlands	1,400	3,271	467	593	8.7%
Italy	727	4,884	253	510	7.5%
Sweden	50	1,862	86	420	6.2%
Spain	55	1,396	163	193	2.8%
Belgium	185	1,429	111	109	1.6%

We will now focus on the case of France. We will first look at the amount of private equity investments. Figure 4.15 gives an overview of the recent evolution of private equity in France. However, this recent surge mainly encompasses later-stage investments or LBO-MBO.

Another common mistake to avoid is the confusion between what Europeans name 'venture capital' and the US traditional venture capital. In the US, venture capital is an early investment, mostly in an innovative and technological private company. In Europe, venture capital most of the time refers to private equity. As already mentioned in the introduction of this thesis, we will use venture capital in its US common sense. Private equity investments and comparatives are shown to illustrate the recent surge and interest of investors towards European companies, private as well as public.

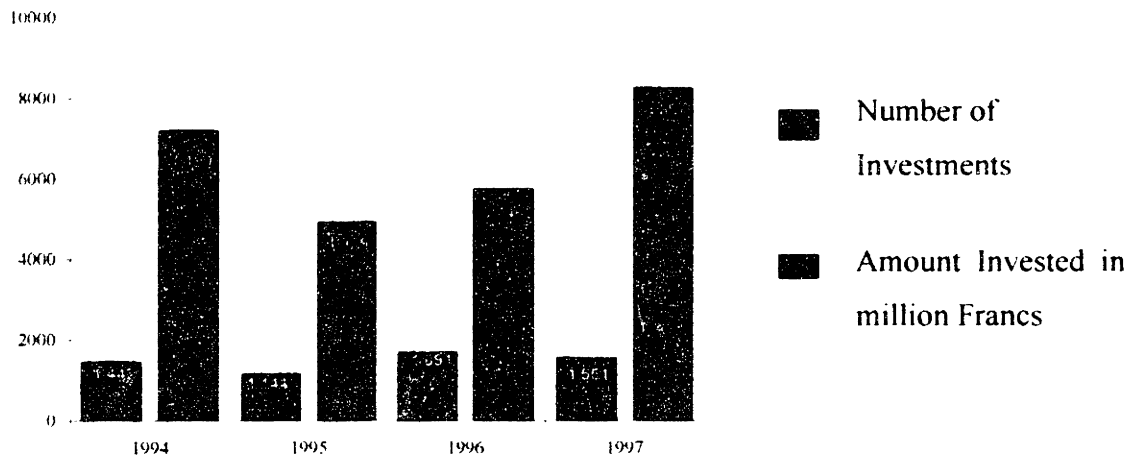


Figure 4.13: Private Equity Investments Evolution in France.

Source: Banque Magazine, March 1999

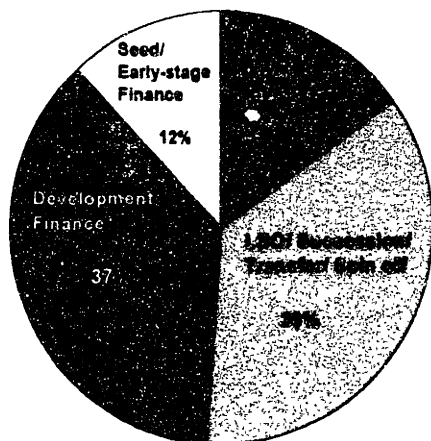


Figure 4.14: Repartition of Investments (By type)

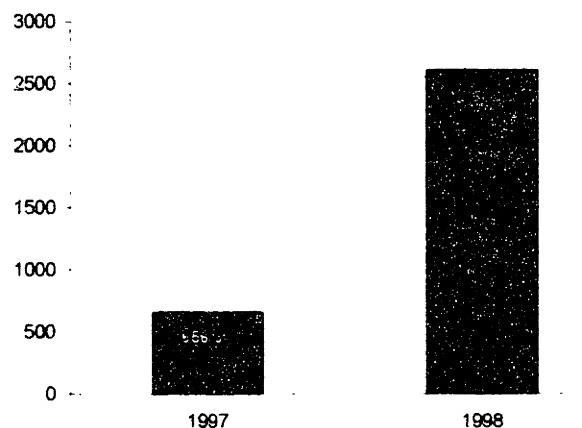


Figure 4.15: Private Equity Funds Raised in France (in million Euro)

4.2.3 Current Venture Capital Available Structures in France

France has two principal structures which are suitable for international investment funds [Venture Capital Special Paper, 40, 1998]:

1. The Fonds Commun de Placement a Risques (FCPR);
2. The Societe de Capital Risque (SCR)

In this section, we will consider the relative advantages and principal features of each of these structures against the background of the French income tax system applicable to corporations. In order to understand the available structures, a brief outline of the French Tax System applicable to the taxation of income and profits is necessary.

Outline of the French Tax System:

Income tax on the profits of a corporation

1. In France, corporations are subject to tax (the "impots sur les societes") at the rate of 33 1/3%. Long term capital gains (i.e. the asset is held for 2 years or more) are subject to a preferential rate of 18%, provided the net gain realized is set aside in a special reserve on the books of the company ("reserve speciale de plus-values a long terme"). Short-term capital gains are taxed at ordinary rates.
2. Special rules apply to gains realized by a French corporation on the securities it holds. First, the French capital gains tax rules apply only to shares, warrants, certificates of

investments and FCPR shares. The capital gains rules do not apply to any other form of investments (such as bonds and investment funds other than FCPRs)

3. Second, capital gains from the sale of “subsidiary” securities (i.e. shares, warrants or certificates of investments of a subsidiary) are taxed only when they are resold. “Investment” securities (shares, warrants or certificates of investments purchased for investment) are taxed annually on the basis of the gain or loss (whether realized or unrealized) according to the latest year end valuation of those securities. For this purpose, there is a presumption that securities are “subsidiary” securities, rather than “investment” securities, if the parent company holds more than 10% of the capital and is therefore entitled to an exemption from tax on the dividends received (regime des sociétés mères et filiales)

Dividends

1. A French company is entitled to pay dividends out of the current profits or out of its distributable reserves. The dividend will give rise to a prepayment tax (“precompte”), which is paid by the company which is paying the dividend, if
 - (a) The profits which are being distributed were not subject to corporate income tax at the normal rate when they were realized (e.g. capital gains);
 - (b) The profit being distributed was earned in a tax year that ended more than five years before the date on which the distribution was made.
2. If the shareholder receiving the dividend is a French resident, he will be entitled to a tax credit (the “avoir fiscal”) equal to the corporate tax previously paid by the French company that is paying the dividend. Thus, if a French corporation pays a FFR 66 dividend to a French shareholder, that shareholder will declare a “grossed-up” dividend equal to FFR 99, and be entitled to an “avoir fiscal” equal to FFR 33
3. As noted above, under the “regime des sociétés mères et filiales”, a parent company which is subject to French corporate income tax is exempt from tax law on dividends paid by a subsidiary (French or foreign) if
 - (a) The parent holds at least 10% of the capital of the subsidiary (however, no minimum percentage is required if the value of the shares is at least equal to FFR 150m, and

(b) The shares were subscribed to when the shares were issued or, if the shares were purchased, the parent company made a commitment to hold the acquired shares at least two years.

4. Under French law, dividends paid by a French corporation to a non-resident shareholder are generally subject to withholding tax. In the absence of an applicable income tax convention, the withholding tax rate is 25% of the gross dividend paid. In such case, the “avoir fiscal” is not available. Most income tax conventions reduce the withholding tax rate to 15% or 5% depending on the identity of the shareholder and the percentage of capital held by the shareholder. Under certain circumstances, a dividend is paid by a French company to a company resident of another Common market country is free from any withholding. Often, shareholders that are only eligible for the 15% rate are entitled to receive a reimbursement equal to the avoir fiscal to which they would have been entitled if they had been French resident taxpayers. The reimbursement of the avoir fiscal is treated as a dividend and is itself subject to withholding.

Interest

1. Interest paid by a French corporation to a French or foreign lender is normally deductible, subject to certain exceptions. The two most important exceptions are:
 - (a) The deduction of interest paid to lenders who are also shareholders of the payor corporation is capped; the maximum interest rate which may be deducted is equal to the average rate for the year paid on bonds issued by privately held companies in France; and
 - (b) The deduction of interest paid to persons who are situated in a tax haven (i.e. who have favorable tax rates) may be challenged; in such case, the payor of the interest will have the burden of demonstrating that the interest rate is not excessive
2. Under French law, interest paid to non-residents by French corporations on loans which such French corporations have contracted outside of France is not subject to any withholding tax in France. In addition, many of the income tax conventions between France and its trading partners provide that French source interest is not subject to any withholding tax (whether paid by a French corporation or a French individual)

Capital Gains

Provided the non-resident is not carrying out a trade or business in France (“entreprise exploitée en France”) the non-resident will normally not be subject to French capital gains tax on the sale of shares of a French company unless the non-resident owns (or has owned in the past 5 years), directly or indirectly, more than 25% of the French company being sold. Many income tax conventions override this rule and establish that, in the absence of a trade or business carried out through a permanent establishment, the capital gains realized by a non-resident of France on the sale of shares of a French company are subject to tax only in that non-resident’s country of residence.

Capital Duty

A contribution of cash to a French corporation (“apport simple”) is subject to a nominal “droit d’apport” of FFR 500

Permanent Establishment

1. Under the French Tax Code, French corporate income tax generally applies only to profits of businesses carried out in France (“entreprises exploitées en France”). This term is not defined in the Tax Code but the scope of its application has been defined by case law
2. If the non-resident company is a resident of a country which has concluded an income tax convention with France, the non-resident will be taxable in France only if it carries on business in France through a permanent establishment situated in France. The term “permanent establishment” is normally defined in the applicable treaty.
3. Assuming the investor does not participate in the management of the FCPR or SCR, an investment in such an FCPR or SCR will not, in and of itself, give rise to a permanent establishment in France.

The Fonds Commun de Placement a Risques (FCPR)

1. The Fonds Communs de Placement a Risques (FCPR) legislation was initially enacted in 1983. It was significantly modified in 1988 (Law #88-1201 of December 23, 1988) when

France created a unifying legislation applicable to all UCITS (Undertakings for Collective Investment in Transferable Securities).

2. The FCPR is defined in the law as a “copropriete de valeurs mobilières” (a joint ownership of shares). It is not a separate legal entity (i.e. it does not have a “personnalite morale” under French law) and, for this reason, does not have the legal capacity to enter into contracts.
3. Each FCPR is created by two founders, the Societe de Gestion (Management Company) and the Depositaire (Custodian)

The Societe de Gestion has sole responsibility for the management of the FCPR including all decisions to make or to sell investments of the FCPR. The Societe de Gestion, which must be approved by the Commission des Operations de Bourse, is generally a French societe anonyme (S.A.). Before granting approval, the Commission des Operations de Bourse will require:

- **Adequate capitalization**

The minimum capitalization of the Societe de Gestion is the higher of FFR 500,000 or 0 5% of the assets managed by the Societe de Gestion up to a maximum of FFR 5,000,000 (there are certain exceptions if the Societe de Gestion is owned by a French bank, insurance company or the like)

- **Adequate technical and organizational resources**

In particular, the COB will normally require that the persons who are at the head of the Societe de Gestion have prior experience in venture capital

- **A corporate purpose clause** which is strictly limited to the management of fonds communs de placement and SICAVs. Outside consulting activities cannot be carried out through the Societe de Gestion

The Depositaire is the “custodian” of the assets of the FCPR. It carries out the instructions of the Societe de Gestion but must at all times determine whether the transactions it is carrying out on behalf of the Societe de Gestion are in conformity with French legislation. The Depositaire is generally a bank, a stockbroker or an insurance company

4. The Societe de Gestion and the Depositaire must establish a reglement which is similar to a partnership agreement. This must be submitted to the Commission des Operations de Bourse for approval. The reglement must set out:
 - (a) The terms and conditions under which the investors will subscribe:
 - (b) The manner in which the fund will operate; and
 - (c) The manner in which income and capital gains are allocated and distributed

5. In order to qualify as a Fonds Commun de Placement a Risques, a fund is required to invest at least 40% of its assets in shares of companies which are not quoted on a stock market in France or abroad. At least 50% of these unquoted shares must be issued by French companies. The FCPR has two years to meet this requirement. In addition, in order to obtain important tax benefits for its French investors, an FCPR must invest at least 50% of its assets in shares , convertible bonds and titres participatifs of EU companies which meet the following requirements:
 - The companies are not listed or quoted on a French or foreign stock market;
 - The companies are engaged in industrial or commercial activities; and
 - The business activities of the companies are subject to French corporate income tax or would be subject to such tax if their activities were carried out in France

The FCPR has one year to reach this 50% limit. We will herein call a FCPR which meets this 50% limit an "eligible" FCPR.

6. The creators of a FCPR may seek investors only by way of private placement. French law forbids the use of advertising or marketing (demarchage) of any kind.
7. All investors are eligible to subscribe in a FCPR, including individuals. Subscription is not limited to "institutional investors" or "sophisticated investors". Investors in a FCPR may be French or foreign
8. Investments made in a FCPR are not subject to a capital duty in France. When an investor subscribes to a fund it receives parts (shares) which are similar to partnership shares. The liability of the investors is limited to their investment in the fund.
9. Although this is not a legal requirement, most FCPRs require investors to subscribe to the fund at its inception during a short subscription period. The FCPR can block the

redemption of shares for a period which cannot exceed ten years. Transfers of shares are normally restricted by the terms of the reglement of the FCPR.

Taxation in General

10. The FCPR is “transparent” for income tax purposes. In other words, the FCPR is not itself subject to any taxation and the tax authorities “look through” the FCPR for the purpose of determining the type of income received by the investor. For the purpose of the following discussion, we will assume that the FCPR is an “eligible” FCPR.

Taxation regulations Specific to French Investors

French Individuals

11. Under current French tax law, if the FCPR is an “eligible” FCPR (i.e. it meets the 50% test), French individuals who are investors in a FCPR are exempt from tax on any ordinary income received from the FCPR and any capital gains realized with respect to the FCPR shares, if certain other conditions are met. The rules have changed considerably between 1983 and 1993. We will discuss herein only the rules applicable to FCPR shares issued after January 1, 1993. The three conditions are:

- (i) The investor, together with his/her spouse, ascendants and descendants, must not own, directly or indirectly, (or have owned during the past five years) more than 25% of the capital of any of the portfolio companies of the FCPR;
- (ii) The investor must undertake to hold his/her FCPR shares at least five years before selling them, and
- (iii) The shareholder must immediately reinvest in the FCPR any income or capital gains he/she receives from the FCPR during this five-year period

If these three conditions are met, the shareholder is exempt from tax on any income or capital gains redistributed by the FCPR and on any capital gains realized when the shares are sold or redeemed.

French Companies

12. Ordinary income: the distributable income of the FCPR is defined as the net ordinary income of the FCPR (primarily dividends and interest) less the management fees payable to the Societe de Gestion and the Depositaire. The FCPR must distribute this income within 5 months after the close of the fiscal year.
13. Because of the fiscal transparency of the FCPR, the different kinds of income received by the FCPR (primarily interest and dividends) retain their identity when they are redistributed to the FCPR's shareholders and are taxed accordingly. In other words, dividends received by the FCPR are taxed as dividends in the hands of the shareholders and the shareholders are each entitled to their pro-rata share of the avoir fiscal and other credits which relate to such dividends. Similarly, interest received by the FCPR is taxed as interest in the hands of the shareholders and the shareholders are each entitled to their pro-rata share of the credits that relate to such interest.
14. Despite the fiscal transparency of the FCPR, French shareholders are not taxed in the year in which the FCPR receives the income from its portfolio companies but in the year in which this income is redistributed to the shareholders. At the time of distribution, the French shareholder is taxed on a pro rata share of each type of income being redistributed.
15. Capital Gains: If the FCPR is an "eligible" FCPR, a corporate investor is not taxed when the FCPR realizes the capital gain but when the gain is redistributed or when the investor redeems or sell its shares in the FCPR, provided only that the investor holds its FCPR shares for more than five years. This minimum holding period can be reduced from five years to two years if at least 90% of the FCPR's assets are shares and certificates d'investissement (non-voting shares) of unquoted EU companies which meet the other conditions set out in paragraph 2.5

Taxation Regulations Specific to Foreign Investors

- 16 An investment by a foreign investor in an FCPR will not create a permanent establishment in France. Furthermore, we will assume throughout the following discussion that the FCPR shares are not being held by the foreign investor through an existing permanent establishment in France

Ordinary Income

17. For foreign shareholders will depend on the source of the income received. French source income is subject to withholding tax to the extent that the underlying income received (e.g.- dividends or interest) would have been subject to withholding. Such withholding may be reduced by applying the provisions of the income tax convention between France and the country of residence of the relevant investor.
18. Foreign source income (i.e. income from sources outside of France) is not subject to any income tax or withholding tax in France when it is redistributed by the FCPR to a foreign investor. If there has been any withholding tax in the source country, the investor must request reimbursement under the treaty (if any) between its country of residence and the source country of the income. The FCPR can be used to centralize any requests for reimbursement of withholding taxes

Capital Gains

19. Generally, foreign investors are not subject to capital gains tax in France unless they own 25% or more of the capital of the company being sold. The percentage of ownership is computed on a "look through" basis, i.e each shareholder is deemed to own his/her pro rata share of each portfolio company.

<u>Advantages</u>	<u>Disadvantages</u>
1 Limited liability for the investors	1 The FCPR is a regulated entity for example, the investments which the FCPR can make are subject to certain restrictions.
2 Fiscal transparency	2 The management of the FCPR, the Societe de Gestion, must be in France
3 Despite its fiscal transparency, French investors are not normally subject to tax until they receive the relevant income from the fund thus, if it is reinvested by the FCPR, such investors are not taxed at that time	3 The tax treatment of the carried interest received by the managers has never been clarified by the French tax authorities
4 Flexibility in management	

The Societe de Capital Risque

1. The Societe de capital risque (“SCR”) legislation was initially enacted in 1985. This legislation was substantially modified in 1990 and 1991 and has recently been the subject of a decree (Decree #91-1329 of 30 December 1991) and new regulations (Instruction of 14 January 1992)
2. The SCR must take the form of either a French societe anonyme or a French societe en commandite par actions. The SCR is therefore subject to all the rules applicable to such companies. However, provided the SCR opts for special tax treatment and further provided the SCR meets the requirements described below, it is entitled to certain tax exemptions.
3. In order to qualify for tax benefits, the SCR must invest at least 50% of its assets in shares, warrants, convertible bonds and titres participatifs of EU companies which meet the following requirements:
 - (a) The companies are not listed on a French or a foreign stock market;
 - (b) The companies are engaged in industrial or commercial activities; and
 - (c) The business activities of the companies are subject to French corporate income tax or would be subject to such tax if their activities were carried out in France

Holding companies which are in the portfolio of the SCR may be included within the 50% quota only under certain restricted circumstances. A shareholder loan made by the SCR in a portfolio company may also be included within the 50% quota if the SCR undertakes to transform it into shares within one year or into convertible bonds within two years. The SCR must comply with this 50% test within three years after it has opted for SCR status

4. The SCR is not permitted to own, directly or indirectly, more than 40% of the vote of any target company and a shareholder of the SCR is not permitted to own, directly or indirectly through the SCR (or through a spouse or through descendants and ascendants), more than 40% of the vote of any target company. If either 40% threshold is passed, the entire investment is treated as an ineligible investment and is not included in the 50%

quota for the purpose of determining whether the SCR meets the test set out in paragraph 3.

5. The SCR cannot invest in any one target company an amount which exceeds 25% of the net asset value of the SCR
6. The SCR is managed internally either by a Board of Directors (for societies anonymes) or by one or more managers (for societies en commandites). There is no independent management company.
7. All investors are eligible to subscribe in an SCR, including individuals. However, no individual can own, directly or indirectly (through a spouse or through descendants and ascendants) more than 30% of any SCR. Investors in an SCR may be French or foreign.
8. Cash investments made in an SCR are subject to a flat FFR500 capital duty in France. When an investor subscribes to a fund it receives actions of the societe anonyme or societe en commandite. The liability of the investors is limited to their investments in the fund.

Taxation of the SCR

9. If the SCR meets the different requirements set out above, it will be exempt from tax on income received from its investments (e.g. dividends and interest) and any gains realized on the sale of such investments. This exemption applies to all investments made, including investments which are excluded from the 50% quota (such as companies which are quoted on a stock exchange)
10. Other income, such as fee income, remains fully taxable

Taxation of French Investors

11. The distribution of items of income (such as fees) which have been taxed at the level of the SCR are subject to the normal tax rules applicable to the distribution of dividends. These rules have already been discussed.
12. For the distribution of items of income which were exempt from tax in the SCR, the basic rule is to “look through” the SCR both for French companies and for French individuals.
13. *French companies*: if the SCR distributes to a French company current income (dividends and interest) which was exempt from tax in the SCR, that company is taxed at ordinary rates. If the SCR realizes a long-term capital gain (i.e. the asset was held at least two

years) and distributes such gain less than four years after the realization of the gain, the distributed gain is also taxed as a long term capital gain in the hands of the shareholder recipient. Finally, all other gains are treated as short-term gains and taxed as ordinary income.

14. *French individuals:* If the SCR distributes to a French individual current income (dividends and interest) which was exempt from tax in the SCR, that individual must include such distribution in its income and is taxed at ordinary rates. If the SCR distributes capital gains, the recipient is taxed at rates applicable to capital gains (currently 19.4%). Individuals can be totally exempt from any tax if certain conditions are met and if the gain or current income is distributed by the SCR less than four years after its realization. The conditions are similar to those applicable must undertake to hold the SCR shares for at least five years and to reinvest immediately in the SCR any distributions received.

Taxation of Foreign Investors

15. For the distribution of items of income which were exempt from tax in the SCR, the “look through” rule is generally not respected for foreign companies and for foreign individuals.
16. *Foreign Companies:* If the SCR distributes current income (dividends and interest) to a foreign company, that distribution is normally subject to withholding tax at the rate of 25%. If the SCR realizes a capital gain and distributes such gain to a foreign company, such gain is normally subject to withholding tax at the rate of 18%. If the company is a resident of a country that has concluded an income tax convention with France, these rates will normally be reduced to 15% or 5%. If that resident of a country which has concluded an income tax convention with France is a tax exempt entity in its country of residence and if the SCR distributes a long-term capital gain (i.e. the asset was held at least two years) less than four years after the realization of the gain, the distributed gain will be exempt from withholding tax.
17. *Foreign Individuals:* If the SCR distributes current income (dividends and interest) to a foreign individual, that distribution is normally subject to withholding tax at the rate of 25%. If the SCR distributes capital gains, the recipient is normally subject to withholding tax at the rate of 16%. If the individual is a resident of a country which has concluded an income tax convention with France, this rate will normally be reduced to 15%. Foreign

individuals can be totally exempt from any tax under the same conditions as French individuals (see paragraph 14)

18. Many foreign countries (e.g. the UK and the US) treat the SCR as a corporation rather than a tax transparent entity. As a result, the special tax avoidance rules applicable to controlled foreign corporations or passive foreign investment companies may apply to the SCR.

<u>Advantages</u>	<u>Disadvantages</u>
<ol style="list-style-type: none"> 1. Limited liability for the investors 2. Fiscal transparency for French investors 3. Despite its fiscal transparency, French investors are not normally subject to tax until they receive the relevant income from the fund, thus, if it is reinvested by the SCR such investors are not taxed at that time 4. Flexibility in management 	<ol style="list-style-type: none"> 1. It is not truly “transparent” for tax purposes. As a result it is quite likely that foreign jurisdictions such as the United States and the United Kingdom, will treat the SCR as a corporation. This may have an unfavorable fiscal consequence for such investors. 2. Because the SCR is a corporation, it may find it difficult to immediately distribute the proceeds of the investment it sells. If it wishes to distribute an amount that is greater than its earnings and profits, it will have to carry out a capital reduction. Such a capital reduction can be a cumbersome procedure in France.

Other Structures:

FCPI: The “Fonds Communs de Placement dans l’Innovation” were recently created by the government. They have to be certified by ANVAR (Agence française pour l’innovation). Their capital must be invested at least at 60% in equities of non-quoted small businesses (less than 500 employees). Furthermore, the small businesses must be innovative, or “PME innovantes”. On the other hand, the tax-advantages are greater. Otherwise, they have very similar features to the FCPR.

SFI: The Sociétés Financières d’Innovation were created by the law of July 11, 1972. The oldest is SOFINNOVA that was created by the Credit National. They must invest at least 80% of their capital in innovative firms that have a turnover of less than FFR 50m, and whose capital is not controlled at more than 50% by firms over FFR 50m. They have to withdraw

every three year at least 33% of the invested capital to reinvest it in other firms. There is a minimum capital requirement and none of the investors is allowed to own more than 30% of the SFI capital. In exchange they benefit from a guarantee from SOFARIS. The shareholders also have a tax reduction of 50% on equities they have been holding for more than 3 years, and a tax exemption for capital gains within these 50%.

Overview of the UK and German Tax systems

	<u>UK System</u>	<u>German System</u>
Corporation tax on profits	Both income and capital gains are subject to corporation tax in the UK at the same rate. The normal rate is 33%, though there is a lower rate of 25% where profits do not exceed GBP 300,000 in a company's financial year	A tax on corporate entities (such as AGs and GmbHs) Since January 1994, the tax rate for distributed profits is 30% and for non-distributed profits is 45%
Dividends	A dividend paid by a UK resident company will give rise to a liability in the hands of that company to pay advance corporation tax (ACT). From 1994, this has been charged at a rate which amounts to 25% of the actual dividend received.	Dividends are paid net of withholding tax by the company, and the shareholder receiving a dividend obtains a tax credit for the withholding and corporate income tax paid
Interest	Annual interest paid by UK companies is generally payable under the deduction of tax rate at the basic rate unless the interest is paid to a bank on a bona fide banking business in the UK	Since 1993, there has been a withholding tax at the rate of 30% which will be credited against the income tax owed by the recipient
Capital Gains	The UK does not subject non-residents to tax on chargeable gains, unless the non-resident is carrying on a trade in the UK and dispose of an asset held in connection with that trade	There is no specific tax for capital gains in Germany. Capital gains are subject to normal corporate income tax. However, for capital gains not exceeding DM 30 million, the tax rate is reduced to 50% of the standard income tax rate. Capital gains in excess of DM 30 million will be subject to a tax rate of 53%

Comparison with the UK and German venture capital structures

A short comparison with the UK and German systems will prove helpful to understand the main shortcomings of the French structures and its taxation issues

Available structures in the UK

The principal structures used for the venture capital funds in the UK are as follows:

(a) Limited Partnership

This structure allows investors with different financial requirements and from different countries to invest side by side in investee companies as if they owned the shares directly. The result, from a UK point of view, is that each investor will receive the income and gains arising from the investee company which are allocated to it through the partnership as its own income and gains, taxable as if it had received them directly itself. Losses are allocated in the same way and their deductibility will depend upon domestic laws of each investor.

<u>Advantages</u>	<u>Disadvantages</u>
1. It is transparent to tax	1. As it is transparent to tax, investors in the partnership are liable to tax when gains or income are received by the partnership. If, therefore, the proceeds are reinvested the investors may still be liable to tax on the gains, without having received them
2. It provides limited liability to the investors	2. There is a limit of 20 on the number of persons who can be partners in the limited partnership
3. It is subject to fewer investment restrictions and other regulations than most other venture capital vehicles in Europe	3. Limited partnerships cannot be marketed under the Financial Services Act to individual investors
4. The general partner's management charge taken as a profit share is outside the scope of VAT	4. The interests in a limited partnership cannot be quoted on a stock exchange
5. It provides a tax efficient means of paying the carried interest to UK based executives	

(b) UK investment trust company

This is a company which invests in securities and whose shares are quoted on the London Stock Exchange. It also has to comply with the Income and Corporation Taxes Act of 1988 that provides that it is not permissible to distribute capital gain by way of dividend. An

investment trust is exempt from corporation tax on chargeable gains. As regards income, it is taxed as any other UK resident company.

<u>Advantages</u>	<u>Disadvantages</u>
1. It provides limited liability to its investors	1. It cannot distribute capital gain by way of dividend
2. It is exempt from tax on chargeable gains	2. It is taxed on income as any other company
3. Management charges are deductible	3. Management charges are subject to VAT if they are not paid to a company in the same group or if the executives are not employed by the investment trust itself
4. Management charges are not subject to VAT if they are paid to a company in the same group or if its executives are employed by the investment trust itself	4. It cannot benefit from double taxation treaties where being subject to tax on capital gains is a condition precedent for the obtaining of relief under the treaty
5. It can benefit from double taxation treaties where being subject to tax on the capital gain is not a requirement for obtaining relief under the treaty	
6. Its shares will be quoted	

(c) Venture capital trust

The UK government has created a new fund structure, the venture capital trust. This is a variation on the investment trust structure providing tax-free income and capital gains to individual investors but with restrictions on the types of company in which it can invest. The key features of the venture capital trust are as follows:

1. the shares are listed to allow an easy exit route for investors
2. they generally are subject to the same tax rules as investment trusts. In particular, they are exempt from corporation tax on capital gains
3. a substantial proportion, possibly 80%, of their assets are in unlisted trading companies meeting certain requirements
4. Not more than 15% of their assets at the time of making an investment will be in any one company or group of companies
5. The proportion of their assets invested in unlisted trading companies may include both equity and debt but at least half of the assets must be equity.

Available Structures in Germany

The most suitable and popular structures that are available for venture capital funds in Germany are as follows:

(a) The Gesellschaft mit beschränkter Haftung (GmbH) or limited liability company

The GmbH is a legal entity separate from its shareholders, which may be commercial partnerships, corporations and individuals. Shareholders' liability is limited to the amount of their respective subscriptions. Due to the flexibility accorded to GmbHs under the law, they are popular vehicles for venture investment.

The GmbH is relatively easy to establish and operate. Its constitution can be tailored to the venture capital vehicle's requirements. The GmbH must observe accounting and public disclosure requirements.

The GmbH is not transparent for tax purposes. Profits of the GmbH, including capital gains, are subject to corporate income tax. Retained profits are subject to corporate income tax at a rate of 45%. Where profits are distributed, a reduced tax rate is levied on the GmbH, thereby making the effective tax rate on such distributed profits 30%.

The GmbH is also subject to trade tax on its income, and on its capital gains, both of which are levied by local municipalities. Dividends received by the GmbH are taxed as income. Interest received by the GmbH is treated as income and is taxed accordingly. Finally, there is no specific tax for capital gains in Germany. Capital gains are subject to normal corporate income tax. Gains from the sale of shares in a foreign corporation domiciled in a tax treaty or other qualifying foreign country are exempt from taxation if the shareholding is of at least ten per cent.

<u>Advantages</u>	<u>Disadvantages</u>
1 It provides limited liability to the investors,	1 It is not transparent to tax,
2 It is relatively easy to set up and operate,	2 Tax credits are not available to non-resident investors
3 Tax credits are available to resident investors	

(b) The GmbH & Co. Kommanditgesellschaft (GmbH & Co. KG) or partnership with limited liability

A Kommanditgesellschaft (KG) is a commercial partnership established by one or more limited partners (Kommanditisten) and a general partner. The liability of the limited partners is limited to the amount of their respective subscriptions. Although the Komplementar (general partner) has unlimited liability, in the GmbH & Co, the general partner is a GmbH: as such, it too has limited liability.

The GmbH & Co. KG conveniently combines the flexibility of a partnership with the limited liability of a corporation. Partnership shares may be transferred without notarisation. The GmbH & Co. KG must be listed on the Commercial Register. Accounting and public disclosure requirements have not, in the past, been as strict for the GmbH & Co. KG as for the GmbH: this advantage will be eroded in the future, however.

The GmbH & Co. KG is tax transparent except to trade tax on income and gains. Therefore, the partnership itself is not subject to tax, with the exception of trade tax on capital and income. Investors in the partnership are liable to tax when gains or income are received by the partnership. If, therefore, the proceeds are reinvested (or otherwise not distributed), the investors are still liable to tax on the gains without having received them.

Where income received by the GmbH & Co. KG from German corporations has had withholding tax deducted at source, then the Fund will receive an appropriate tax credit for its German investors which is passed on, pro rata, to these investors. German investors also receive tax credits for the underlying corporate income tax paid by GmbHs in which the Fund has invested and from which it receives distributions: such tax credits amount to 3/7 of the distribution made.

Advantages

1. It is transparent to all taxes with the exception of trade tax on income and capital;
2. It offers limited liability to its investors
3. It offers flexibility in management;
4. Capital gains arising from the sale of a stake in the partnership by a private individual are taxed at half the normally applicable rate for a gain of up to DM 30 million
5. Losses can be offset against profits at the investor level

Disadvantages

1. It is not transparent to trade tax on income and capital
2. As it is transparent to tax (with the exception of trade tax on income and capital), investors in the partnership are liable to tax when gains or income are received by the partnership. If, therefore, the proceeds are reinvested (or otherwise not distributed), the investors are still liable to tax on the gains without having received them
3. It is not suitable for foreign investors

4.2.4 Cast of Characters: Who are the Stakeholders in France?

There are numerous stakeholders in France related to the development of risk capital. Indeed, such a development is linked to innovation and entrepreneurship, which tackles many players of the French economy. In order to understand the current picture and before giving any recommendation, the goal is to envision who these stakeholders are, what their current position is, as well as their stake, the major impediments to these goals, and the intricate relationship between each other.

France, like most European countries, has built its economic and political structure based upon the history, some key institutions and decades of tradition. In the following section, we will analyze each of the major stakeholders, and describe their situation as well as goals.

The Stakeholders

Government

The French government has recently emphasized the importance of innovation and technology, as national economic drivers. The Guillaume report was initiated to assess the position of France in these areas, and deliver some key recommendations. The current government has stated that innovation was key to the sustainability of the economy, and to the competitive advantage of France in Europe.

This theme has become a priority since it has some direct impact on the unemployment rates. Besides, both parties anticipating the 2002 election know that technology and the new economy will be key topics to convince the voters. However, the current socialist government has to overcome internal barriers. Recent laws about the 35 hours are not favorable to an entrepreneurial environment for instance. Hesitation about stock options legislation impede the implementation of an efficient program.

European Union

Similarly the European Union has stated entrepreneurship and innovation as one of the main priorities. At stake is the question of staying competitive compared to the US economy. However, some impediments will have to be overcome: fragmentation and lack of consensus at the European level, deep-rooted tradition and culture not necessarily oriented towards innovation. Finally, how much involved should the European Union be and what role should it play vis a vis governments is another question to resolve

Investors

For a long time, investors have been lobbying to reform the legal and fiscal rules of venture capital in Europe. Less fragmentation, more consolidation, and easier flow of investments across Europe are among their claims. Besides, until recently there was no NASDAQ equivalent in Europe which made exiting a more dubious process. Despite recent progress, investors still have to face a set of barriers ranging from cultural and legal to fiscal issues. In the past 12 months, there has been a surge in the number of US investors, and venture capital firms taking advantage of the still untapped European markets and the new mindset.

Entrepreneurs

"Europe is a continent searching for its own e-identity," said Andreas Schmidt, President and CEO of AOL Europe. Entrepreneurs are still a marginal population, although increasing at a fast pace. Lack of social recognition, labor and fiscal impediments, lack of common legislation about stock options are slowing their efforts. However, as demonstrated in the US, innovation is fueled by visionaries and entrepreneurs who can take this vision and turn it into a company.

Education System: Universities and Grandes Ecoles

French educational system is widely praised. The quality of its engineers acknowledged. However, Eric Benhamou (a graduate of a Grande Ecole) recently declared at MIT: “French educational system prepares you the best way in entrepreneurship: it teaches you how to not become an entrepreneur”. Certainly, both Grandes Ecoles and Universities have to cooperate and reform their curriculum to insert a stronger emphasis on technology, innovation and company creation. What is at stake for the very elitist system is its own survival.

Traditional national and large French companies

Despite their prevalence in France, these companies are threatened by the international competition. No longer can they consider France as their own and only territory. At stake are their competitive edge, and their ability to survive in a fast-changing environment. These companies, and their R&D departments, often struggle competing with smaller and more innovative start-ups. Stock-options and incentive programs have yet to be implemented. No doubt that in the near future, they will find new ways to adapt themselves to the fast changing environment.

Stock Markets

Lack of NASDAQ type market in Europe has delayed the liquidity and amount of investments experienced in the US. However, in the last years new markets have emerged. Although it is too early to understand completely this new and still evolving landscape, these markets have already fostered a new equity culture in Europe.

	Current Position	What is at stake?	Major Impediments	Comments
Government	<ul style="list-style-type: none"> ▪ Initiation of entrepreneurship/innovation favorable measures (Guillaume report) ▪ Understanding of the private sector benefits (the <i>Mittel</i> syndrome) 	<ul style="list-style-type: none"> ▪ National Economy Sustainability ▪ Presidential election of 2002 ▪ Competitive advantage of France in Europe (vs UK and Germany for instance) ▪ Unemployment rate 	<ul style="list-style-type: none"> ▪ Socialist government cannot seem too liberal ▪ Burden of public sector tradition ▪ Contradiction with other measures passed by the same government (35 hours- M. Aubry) ▪ Governmental coalition with Environmentalists and Communists 	<ul style="list-style-type: none"> ▪ How much should the government be involved in innovation/entrepreneurship? ▪ Can the French government adopt the US model? ▪ Can governments act as Venture capitalists? ▪ How to prioritize?
European Union	<ul style="list-style-type: none"> ▪ Clear statement: Develop innovation and entrepreneurship as well as venture financing 	<ul style="list-style-type: none"> ▪ The New Economy ▪ Stay competitive with US economy ▪ European unemployment 	<ul style="list-style-type: none"> ▪ Fragmentation/ lack of consensus ▪ National interests do not necessarily match European interest as a whole ▪ Overcome tradition and culture 	<ul style="list-style-type: none"> ▪ Too much involvement of European Union in what should be led by private sector ▪ European Union has yet to position itself
Investors	<ul style="list-style-type: none"> ▪ Ask for legal/ fiscal reforms ▪ Lobby for more liquid and active NASDAQ-type European Stock markets ▪ In UK for instance, already pro-active in fueling the new Economy 	<ul style="list-style-type: none"> ▪ Wish to benefit from the New Economy opportunities ▪ Win-win situation where innovation benefits from flux of private money ▪ Emergence of an equity-based economy 	<ul style="list-style-type: none"> ▪ Reluctance of governments to give private investors a free ride ▪ Structure of balance between existing involvement of public sector and massive influx of private investors ▪ No NASDAQ in Europe ▪ Overcome cultural, labor, legal, fiscal issues 	<ul style="list-style-type: none"> ▪ Is the US model the right one? ▪ How can investors operate with existing structures and French particularities? ▪ Can a US VC firm be successful in France?

<p>Entrepreneurs</p>	<ul style="list-style-type: none"> ▪ Seek legal, fiscal and labor reforms ▪ Wish social recognition for risk-taking 	<ul style="list-style-type: none"> ▪ The essence of competitive advantage through technological innovation 	<ul style="list-style-type: none"> ▪ Administrative/ legal/ fiscal/ cultural barriers ▪ Difficult to hire and fire people in France ▪ Lack of incentives in terms stock options 	<ul style="list-style-type: none"> ▪ How to turn education an society into a system conducive to entrepreneurship?
<p>Education System: Universities Grandes Ecoles</p>	<ul style="list-style-type: none"> ▪ High quality educational systems needs to develop entrepreneurship and innovation ▪ Universities are promoting start-up creation as well as technical applications of science ▪ Grandes Ecoles have started a reform of their curriculum, more conducive to innovation 	<ul style="list-style-type: none"> ▪ The survival of the elitist system of Grandes Ecoles ▪ Education and its inherent quality as well as its gratuity 	<ul style="list-style-type: none"> ▪ Prestige of the Grandes Ecoles ▪ Recognition based on power & authority, not upon entrepreneurial achievements ▪ Science is Prestige. The application of Science, technology, is not. ▪ Powerful Grandes Ecoles network in large companies and government 	<ul style="list-style-type: none"> ▪ How to make Grandes Ecoles and universities cooperate? ▪ How to adapt a 250-year old system to a new economy?
<p>Large French Companies</p>	<ul style="list-style-type: none"> ▪ Reposition themselves as a key intermediary between government, public R&D centers and start-ups ▪ Some have created their own corporate venture capital arm to sustain competitive edge 	<ul style="list-style-type: none"> ▪ Competitive edge ▪ Ability to create keiretsu type of network within an established company 	<ul style="list-style-type: none"> ▪ Clash of corporate culture vs. Start-up culture ▪ Internal politics. compensation? Stock-option programs? 	<ul style="list-style-type: none"> ▪ Synergies must be found between corporations and entrepreneurial ventures
<p>Stock Markets</p>	<ul style="list-style-type: none"> ▪ The "missing piece" ▪ Consolidation/ alliances/ marketing 	<ul style="list-style-type: none"> ▪ Become the European NASDAQ 	<ul style="list-style-type: none"> ▪ Fragmentation/ competition ▪ Foster equity culture for retail investors 	<ul style="list-style-type: none"> ▪ Despite 5 years of existence, n stock market emerged yet as th NASDAQ counterpart

A snapshot at the Venture Capital players in France¹

In this section, we will analyze the existing players of the Venture Capital industry in France. Where do they come from? Who are they? What type of vehicles? How do they differentiate themselves from their US counterparts for instance? What is the size of their investments, and their focus? We will also give a few examples for each of them of their portfolio and their activity overall. In 1998, there were about 200 venture capital firms, with a very small number of these firms specializing in early-stage high-tech investments. However, the situation has evolved rapidly to benefit from the technological breakthroughs and the penetration of Internet in France.

We have defined several categories for these players:

- Econets (CMGI, ICG or Softbank type of conglomerates that are emerging in France)
- Corporate Venture Capitalists
- Traditional Venture Capitalists
- Foreign Venture Capitalists
- Merchant Banking Groups & Private Equity groups
- Incubators
- Business Angels
- French Supporting Institutions
- European Supporting Institutions

ECONETS:

A definition of ECONETS

“They were created to fund start-ups, but they are swiftly becoming a different beast- one that suggests how businesses will be organized, structured, and operated in the early decades of the 21st century. They started out with a single mission: to incubate Internet companies, accelerate them to market, and prepare them for lightning –speed IPOs. The theory behind the traditional incubator was that it was time- not money- that was the critical resource. It made

¹ The information compiled about the investments and VC firms in France is derived from the public information available about these firms. However, this evolving environment combined with the lack of publicly available information has often impeded the research

sense to finance a collection of start-ups, offer them management advice, and prepackage their business needs. Almost by accident, these collections of companies formed what the Japanese call a *Keiretsu*- a group whose members rely on each other for synergy. But, the point was to spin out the members as soon as the markets would have them. Now the most aggressive incubators have taken to retaining control of start-ups after their IPOs. They have begun spinning companies into their networks and gluing together tightly knit, yet loosely controlled, conglomerates” [Red Herring, 41, 2000].

Europ@Web (Groupe Arnault)

Created in Spring 1999 by Bernard Arnault (CEO of LVMH) with a fund of about \$3 billion, Europ@Web has become the “French Softbank” or CMGI. Recent investments include Datek online, Webvan, QXL, Ebay, 1-800-flowers, MP3.com, Aucland.fr (the French Ebay), Libertysurf (free ISP in France) or Boo.com.

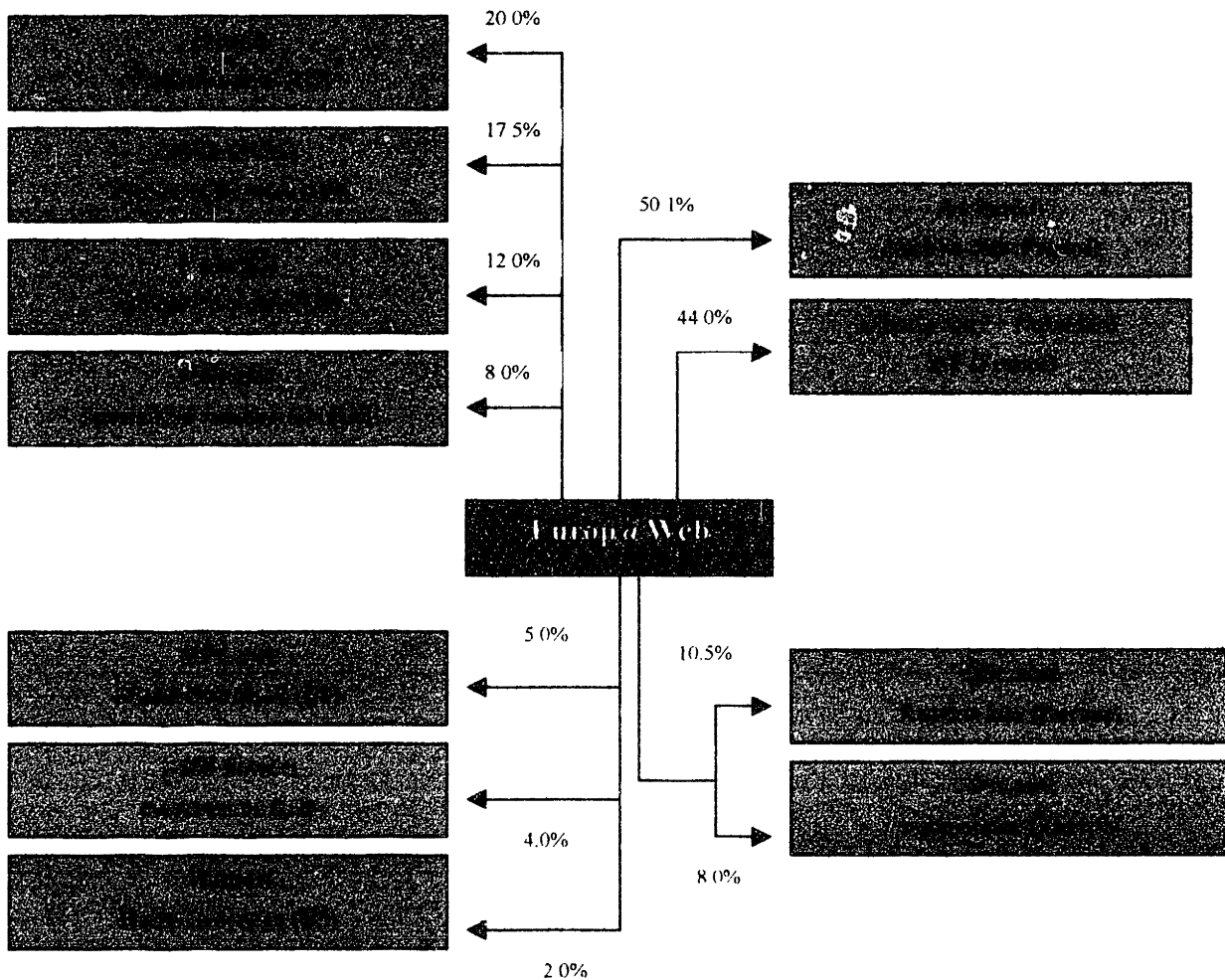


Figure 4-16: Europ@Web main investments

The outfit has exhibited a willingness to act quickly with its investments and to help them migrate their business to Europe. However, the latest investments showed how connected Arnault's investors have become in a few months' time. By aligning itself with CMGI on the East Coast and some of Silicon Valley's largest venture capital firms, Arnault's team has obtained access to emerging category leaders in the pre-IPO stage.

Viventures (www.viventures.com)

Set up in September 1998, Viventures is a venture capital fund with a presence in the United States (San Mateo) and in Europe (Paris). The Fund was established to provide capital for innovative telecommunications and Internet businesses. Created by the Vivendi Group, the Fund's largest investor, it now counts 18 leading financial and industrial corporations with substantial interests in the high-tech industry.

Viventures invests in start-ups or expanding businesses with innovative Internet and telecommunications strategies. The Fund provides seed capital and supports these newly founded companies in order to ensure their long-term development in Europe as well as in the United States. The Fund's ultimate goal is to enable these companies to go public on one of the Stock Market's "new markets".

Companies which have invested in Viventures:

Vivendi SA, SGAM (SG Asset Management), la Compagnie Nationale à Portefeuille (Albert Frère group), Audiofina, Compagnie Financière et Industrielle Gaz & Eaux, BT (British Telecom), Mannesmann, Siemens Venture Capital, Nokia, Cisco, Sojecci Ltée, DLJ (Donaldson, Lufkin & Jenrette), EDB-Singapore funds, Viel & Cie, Europatech, Net Fund Europe, and private investors.

Investments include in the US:

Adauction (Auction Marketplace), CollegeClub (Online community), Cyras (Solutions for optical network management), DirectHit (Web Search engine), Telesoft (Venture Capital fund), Netonomy (Self-service customer care for telecommunications solutions), Xpedion (Design automation software to the wireless communications industry).

And in Europe:

Château Online (Wine industry Business to Consumer), Imediation (Internet commerce solutions for online distribution), QXL (auction online), Solsoft (Global solutions for managing IP filtering devices in networks)

When naming Viventures an Econet, the only concern that may arise is the perception of Viventures as a corporate venture entity. However, given the breadth and diversity-geographical and sector, of its investments, we can legitimately assume this vehicle may be spun off from Vivendi and listed on public markets as a conglomerate. Besides, new managers of this fund come from either operating businesses or have financial experience in investment banks.

Corporate Venture Capital in France

The tradition of large companies in France certainly made it easier to create the venture capital subsidiaries of these corporations. If the initial investments were considered as complementary to the company businesses adding synergies, some of these vehicles are currently investing in more diversified portfolio. However, they remain under the control of the parent company, and most managers come from the parent main businesses unlike the Econets conglomerates.

Innovacom (France Telecom): www.innovacomvc.com

INNOVACOM was founded ten years ago on France Telecom's initiative to foster technological innovation in the telecommunications and information technology space in France through equity capital. Since then, it has contributed to the creation and expansion of over 250 companies, including most of the successful French technology start-ups in the telecom sector, such as Gemplus Card, Business Objects, Chorus Systemes, Com 1, Experdata, Arche Communication, Picogiga, Inforealite, Vox, Generix.

Over the past five years, INNOVACOM has also been investing throughout Europe, to become involved with electronics companies such as Micronas in Germany and SEZ in

Austria, both of which are now listed on the Zurich Stock Exchange. In 1996, INNOVACOM launched a direct investment program in the United States, mainly in the Internet sector, with an investment manager based in San Francisco. It has since invested in companies such as Four11 Corporation, Tumbleweed Software, eFusion and Intershop Communications now listed on the Neuer Markt in Germany.

INNOVACOM invests exclusively in software publishing, electronic components and hardware and services related to public or private telecommunication networks. INNOVACOM has built an international network of venture capital partners in Germany, Canada and the United States, enabling a better evaluation of innovations and better management of its affiliates' international growth. INNOVACOM funds have a diversified shareholder base of institutional or private financiers alongside France Telecom. In both cases they are entirely dedicated to the commercial and financial performance of the businesses financed, and seek to establish mutually beneficial relationships with the relevant operational units of France Telecom.

Dassault Développement (Dassault Group): www.dassault-developpement.fr

Dassault Développement plays an active role in France to foster the innovation-based entrepreneurial model which is today a major driver of superior economic growth. Dassault Développement is a founding member of the Croissance Plus lobby and network of high-growth companies in France and has been instrumental in redefining national regulations of the start-up and early stage companies segment.

Dassault Développement is also active in the USA, striving to create a network of partners to offer access to its portfolio companies and support of the industrial group and its partners. Dassault Développement is a sponsor and founder of the seed-money and very early stage, Silicon Valley-based, Ridge Ventures fund.

Alcatel Fund: www.alcatel.com

Alcatel announced on January 20, 2000 the formation of Alcatel Ventures Fund I Limited Partnership, an information technology venture capital partnership, investing primarily in Internet and related high technology emerging and "start-up" companies in the US and in other high growth countries. Alcatel Ventures will be a limited partnership company and it is planned to have an eventual target fund of \$150 million. Alcatel, as the largest and majority limited partner, will be the lead investor.

The Fund's general investment strategy is to maximize returns through both leveraging established operations and in new start-ups, focusing on telecommunications, software, technology services and the Internet. Companies within the portfolio of the Fund will also be able to explore synergies with Alcatel. "This new investment vehicle widens our ability to acquire critical technologies quickly and to ensure that we have a finger on the pulse of the latest telecom developments." The CEO of Alcatel declared.

Thomson CSF Venture (www.ventures.thomson-csf.com)

Thomson-CSF Ventures, whose parent is the European company Thomson-CSF, a leader in defense and professional electronics, has broad expertise in using its parent's resources and potential in making investments. Since 1986, this company has selectively invested in new ventures which offer significant opportunities for synergy and sharing with Thomson-CSF's own strategy.

In technologies such as optronics, neural networks, microelectronics, computer-aided software engineering, virtual reality, and others, Thomson-CSF Ventures is using its \$60 million in capital to aid high technology companies and innovative start-ups throughout the world.

Other companies such as *Sanofi* in the healthcare sector, *Groupe Pinault Printemps Redoute* and *Gemplus* have been active in corporate venture capital lately.

Traditional Venture Capital Players, FCPR and regional funds: [Tabourin, 42, 1988]

Traditional venture capital players have been investing in France for a number of years, but these investments have recently increased. Besides, these traditional players- which are not very active outside France except Sofinnova, there are some regional funds which leverage their local presence and knowledge to create a network of entrepreneurs and start-ups.

It is useful to notice that France lacks the traditional VC players that are highly influential in the US such as Kleiner Perkins, Sequoia Capital or Hummer Winblad. However, these venture capital firms tend to adopt a similar role and approach towards their investments.

Sofinnova (www.Sofinnova.fr)

Sofinnova S.A., was founded by major institutional investors in 1972, making it the first "American Style" venture capital firm in France. Investments in France include Multimania, Nomade or Letsbuyit.com in Europe.

Sofinnova S.A. launched US investment funds in 1974, making it the first European venture company to enter the U.S. market. In 1984 Sofinnova S.A. created the current generation of US Funds (Sofinnova Venture Partners I, II, III...) to leverage Sofinnova's Trans-Atlantic positioning.

In 1997 the global Sofinnova organization restructured into two independent management teams, Sofinnova Partners in Paris, and Sofinnova Ventures, in San Francisco. Each firm is an independent venture capital firm with independent funds, investment decisions and partnerships. The current fund in the US amounts \$200 million

Siparex (www.siparex.com)

Siparex was founded in 1977, and has become one of the leading independent providers of later-stage financing to Small-Medium companies. Siparex manages several funds of about FFR 1 billion.

Galileo Partners (www.galileo.fr)

Galileo Partners is a venture capital company serving entrepreneurs in the fields of information technology and internet applications.

Mars Capital

This young and active fund has invested almost FFR100 million in the first year of its inception, with a portfolio of companies in the US and in France. Investments include Ukibi, Buy.com.

Other French traditional players include *Walter Butler Finance Partners, Alternative Ventures, Financiere de Brienne, Financiere St-Dominique, and Idianova.*

Foreign Venture Capital Players in France

Several reasons have encouraged foreign venture capital firms to invest in France in the recent past. Europe, which still lags behind the United States in terms of technological penetration, has entered a rapid growth phase. The adoption of new technologies, such as wireless, Internet and the rising use of PCs has set Europe to become one of the leading players in the technological arena. Aware of the opportunities, as well as the intricacies of doing business in continental Europe, foreign VC firms have entered progressively countries such as France in order to position themselves early, create a network and anticipate the future trends.

Very few traditional US venture capital firms have entered France so far, but most of them plan to do so or to partner with local players. However, there is a pool of international venture capital firms, mostly European or Trans-Atlantic, which have built a significant presence.

Atlas Venture Partners (www.atlasventure.com)

Atlas Venture invests in fast-growth, technology-driven markets. They focus on business-to-business and business-to-consumer e-commerce, Internet software and services, communications, semiconductors, e-health, biopharmaceuticals, and medical devices. They are currently investing from Atlas Venture V, formed in January 2000, a \$750 million fund.

Atlas venture makes investments at all stages of growth from seed investments starting at \$500,000 to mezzanine investments up to \$20 million. A typical first round financing is \$5 million.

Investments in France include Business Objects (Marché a Reglement Mensuel), Ilog (Nouveau Marché), Laboratoires Effik (Nouveau Marché), Netonomy (Nouveau Marché)

3i (www.3i.com)

3i is Europe's leading venture capital company. 3i makes share and loan investments in growing businesses. The main activity is investing in start-up companies, growing businesses, management buy-outs, management buy-ins and share purchases. The overall funds are estimated around \$3 billion. Investments in France include Visiware (FFR 15 million), Spine Next or IndustrySuppliers.com.

Apax Group (www.apax.com)

Apax Partners is a leading international investment group. It recently announced the launch of a new Pan-European fund, Apax Europe IV, which is the first private equity investment fund ever to be denominated in Euros. 1.8 billion has been raised from US and European institutional investors, bringing Apax Partners' total funds under management to over Euros 5 billion. Around 80% of the capital in Apax Europe IV has been raised from existing investors in Apax funds, with 60% from US investors and 40% from European investors.

Apax Europe IV will follow a balanced investment strategy, investing in companies at all stages of development, from start-ups to buy-outs. Euros 600 million will be invested in early-stage growth companies across Europe. This represents the largest ever allocation to European early-stage companies.

As for France, Apax Partners recently announced the launch of Apax France V, which has raised a further Euros 300 million for investment primarily in France. Investments include French e-commerce software publisher, iMédiation, CCMX in the software industry, or Metrology a computer wholesaler.

Other firms include *Bain Capital Partners, The Cinven group, Advent International and Partech International.*

Investment Bank Private Equity Groups

Along with the previous investors, many investment banks with large capital have dedicated special teams to invest in later-stage, mezzanine financing. They are usually not involved in the daily management of these companies. Following the major US investment banks, they tend to follow their investments until the IPO, in which they are usually involved.

Banexi Ventures (BNP Private Equity) www.banexiventures.com

Banexi Ventures 2 is a French venture capital fund which closed on July 8th, 1998. Its main characteristics are: Investment in high tech companies at an early stage, FRF 400 million (Euro 61.5 million) raised; Fund's life span: 10 years; Investment Period: 5 years; Sponsor of the fund: Banexi with an investment range of 30%. Banexi Ventures Partners focuses on emerging and early-stage companies with a priority given to high technology companies with high growth profiles. Investments include Ilog, Lexiquest.

Paribas Principal Investment (www.paribas.com)

Paribas Principal Investments (PAI) manages Paribas' equity holdings in manufacturing and service companies, with one of the largest investment portfolios in Europe. Over the past several years, PAI's business and portfolio have been fundamentally refocused. PAI favors investments in medium-sized businesses with annual sales ranging from FRF 500 million to FRF 5 billion and actual or potential leadership in their respective sectors.

SPEF (Groupe Banques Populaires) www.spef.fr

Venture capital arm of the commercial Bank, it has actively positioned itself as a dynamic vehicle to foster innovation and growth.

CDC innovation (www.cdcinnoy.com)

Subsidiary of the state-owned Caisse des Depots et des Consignations, CDC Innovation goal is to foster innovation in France while investing in high growth companies. The overall fund

amounts to FFR400 million, and is active in Information technology and life sciences. Investments include Integra, DrugAbuse, and Neurotech.

Other investment banks include *SG Capital Developpement*, *ABN-AMRO (Rotschild &Co)* *Credit Agricole Indosuez*, *AXA-* and its subsidiary *the Sprout Group through DLJ, CIC*.

We have also noticed the very recent and powerful entry of US investment banks in France such as *Goldman Sachs Principal Investment*, or *Morgan Stanley Venture Partners*.

Incubators

Incubation is a business approach that supplies hands-on management, real estate, legal services and technical teams as well as access to business leaders. This process aims to accelerate the growth of start-ups, and to refine their business models. This is a very recent trend in France, which followed the US myriad of such incubators- and now the accelerators. However, there is a distinction to make between public and private incubators.

Public ones have been encouraged recently by the French government (July 1999), which decided to set aside FFR 100 million for the emergence of such entities. Early November 1999, 13 projects had been selected. Henri Guillaume declared: "Risk-taking is not culturally entrenched, but the change has been initiated".

As for private ones, it is difficult to analyze the current picture, but a few players seem already positioned to gain recognition in this new space. [Tornado, 43, 1999]

Defi Start-up (www.defi-startup.com)

Defi Start-up was created in 1998 as a seed capital fund committed to Internet and high-tech start-ups in France. In February 2000, they announced the launch of a European incubator, with a first office in Paris. This incubator is associated with Mars Capital, a venture capital fund of FFR 100 million. This incubator offers legal, management, human resources, real estate services to start-ups and will accompany them until the second round of financing.

E-Start (www.E-start.com)

The first pan European site providing networking, resources and capital online for Internet entrepreneurs.

StartupAvenue (www.startupavenue.com)

Recently founded, this incubator focuses on B2B companies with extensive connections in the US.

Business Angels

According to a recent article in Le Monde [Le Monde, 44, 1999], there are about 60,000 business angels in France compared to 250,000 in the US. They usually invest an average amount of FFR 100,000. The overall investment in 1999 has reached almost FFR 6 billion compared to FFR 120 billion (\$20 billion) in the US with 30,000 start-ups.

Clubbusinessangels (www.clubbusinessangels.fr)

This association of business angels offer its services to young start-ups in order to raise seed fund, and provide network of managers and potential employees.

Leonardo Finance (www.leonardofinance.fr)

Created in November 1995 in the form of a joint stock company with a current capital of 3.740.000 FF, Leonardo Finance is an original company concept that functions according to a network model, bringing together some hundred very high level "shareholder-experts" who also often hold key positions in business. Thirty of them are graduates of the Stanford Business School in California.

Apollo Invest (www.apollo-invest.fr)

Around 30 business angels (some of them former CEOs of large companies) who invest jointly in a fund that is worth about \$10 million.

Supporting Organizations

ANVAR

ANVAR is a state-owned institution under the management of the three ministries, Ministry for the Industry, Small Businesses and Research. It was created in 1979, and its role then was to gather, protect, and exploit technological applications that were issued from the French public research. Today its role is to escort and finance innovative projects. Among its tools are aids for innovation and loans with a zero rate that is to be reimbursed in case of success. Its scope breaks down in 24 regional delegations, which are closer to the entrepreneurs. It behaves like a venture capitalist even if it does make any profit. Since its creation, it has escorted more than 20,000 new ventures.

BDPME

Banque du Developpement des PME (BDPME) mainly guarantees up to 75% of the credit risk of the small businesses. It offers various other products for small businesses like loans with preferred interest rate.

SOFARIS

The role of SOFARIS is to guarantee risky investments of venture capitalists. It was created in 1982. Currently there are two funds of guarantee: the “fonds de developpement technologique” doted by the government, and the “fonds garantie capital PME” doted by the CDC. Each of these funds guaranties 50% of the investments of venture capitalists. It even guaranties 70% in case of creations of start-ups.

The “fonds developpement technologique” is a stop-loss fund. It attracts first the large investors with large operations. As soon as the actor is certified, all his investments are certified and warranted, whatever their amounts may be. On the other hand, SOFARIS reimburses only losses with a cap at 15% of the total amount of investment.

The “fonds capital PME” aims at smaller operations and ventures. It has no such cap as a percentage of the total investment. However, the potential value of the risk to be covered cannot overcome FFR 5m.

European Institutions involved in France

The history of European venture capitalist is recent and turbulent. It has started around the 60s with the European Enterprises Development (EED).

Because of the recession in the 70s which discouraged European venture capitalists, European governments took steps to help venture capitalists. This is one of the reasons why each European country that underwent this economic recession, undertook governmental actions. Later, the European Community (EU) also tried to play the role of coordinator between the different national venture capital industries.

European Union Policy (EU)

The goal was that larger scale European initiatives would be either more efficient than or complementary to national efforts. In 1985, the EU started the program *Venture Consort*. Its purpose was to promote co-financing of new ventures by the venture capital industry. It also participates in the creation of transnational financial Unions. In 1988, the European commission created the experimental action *Eurotech Capital*, which focuses on high tech projects.

There are principally three kinds of aids that are offered to venture capitalists. First is a preferential access to Eurotech services, which are made of two kinds: Eurotech projects, a service that identifies high-tech projects and communicates their results to the venture capitalists. The second service, Eurotech data, helps in the assessment of the marketing and technological value of projects by providing information. It also creates a network of venture capital funds, which in exchange are committed to putting 20% of their investment into these kinds of operations. Finally, these new ventures receive a small financial contribution from the EU.

In 1989, the EU created the European Seed Capital Fund Network (see chapter 3). The *Venture Consort* founded the EVCA in 1983, which was then the organization in charge of developing the network of the European Seed Fund.

European Investment Bank

The European Investment Bank (EIB) is the European Union long term lending institution. It was created by the Treaty of Rome, and its members are the State Members of the European Union, which all subscribed to the Bank capital. Its board of directors is composed of the Finance Ministers of these states. It grants long-term low-rate loans to SMEs, in order to support less-favored regions or creating infrastructures for business in less-advanced ones.

The “Amsterdam Special Action Program” was setup in 1997. It has various features among which is the participation in hedging risk by the EIB in favor of innovative SMEs. One of its operations was to entrust the management of a fund endowed with FFR 300m to CDC, the EIB venture capital fund.

This fund joins the existing FCPR that is managed by the CDC, which brings its capital to FFR 900m. IEB and the French State will participate in the fund evenly for FFR 200m over the next three years. This is in addition to FFR 100m made available by EIB to SOFARIS in 1997 for guaranteeing operations carried out by venture capitalists in innovative SMEs.

An annex to this chapter identifies the latest venture capital financing of innovative start-ups in France as well as the exit strategy.

The next chapter will continue using the Policy model exposed at the beginning of this chapter, and will tackle the main impediments to the development of venture capital in France- and entrepreneurship, the current implementation and initiatives in France to promote and develop venture capital. Both sides will be covered: the supply side as well as the demand for venture capital side. We will then deliver some policy recommendations.

Chapter 5: Overview of Venture Capital in the UK and Germany

5.1 Introduction

In order to understand the shortcomings of the venture capital situation in France, it may prove useful to have a European perspective in order to compare different markets. Although we have introduced the US venture capital market in chapter 3, it is certainly too advanced and currently too sophisticated to compare it with the French market. However, the US market provides important milestones to achieve for the European ones.

5.2 The Venture Capital industry in the UK

The UK venture capital industry continues to be the largest and most developed in Europe, accounting for 49% of total annual European venture capital investment in 1998. But UK ranks third, behind Germany and France, in early-stage investments made in Europe, according to the EVCA. Since 1984, the amount invested by the industry totals almost £28 billion in up to 18,000 companies worldwide. Over the period, nearly three-quarters of investments have been into start-up and expanding companies.

The British Venture Capital Association (BVCA) was formed in 1983. In 1984 there were fewer than 50 full members and in that year they made 350 investments totalling £140 million. In 1998, there were 117 members of the association who invested £4.9 billion in 1,332 companies (£3.8 billion in 1,122 UK companies). Of those UK businesses invested in, 56% received amounts of less than £1 million.

Towards the end of the 1990s, the venture capital industry is widely perceived as having entered a more mature phase in which it is increasingly considered a key source of growth finance. It has attracted considerable interest and support from the UK government and from across continental Europe.

A recent survey from BVCA shows that from July 1992 to December 1998, 37% of trading company IPOs on the Official List of the London Stock Exchange have been venture backed. Since the inception of AIM (June 1995) to December 1998, 19% of all IPOs have been venture backed. In the four years to 1997/98, annual sales growth rates for venture backed firms were two and half times higher than those for FTSE 100 companies. Growth in pre-tax profits was also higher. Looking at the future, 39% of venture backed companies surveyed were anticipating obtaining a stock exchange IPO. Of these, 29% expected to list within one or two years and a further 37% in three or four years. 53% expected to seek quotation on the Official List of the London Stock Exchange, 27% on the Alternative Investment Market (AIM), 10% on NASDAQ and 4% on EASDAQ.

The survey finally points at the economic impact of the venture capital industry itself. Some 120 venture capital companies employ several thousand people, with over 1,000 executives in the UK alone.

The venture capital industry has made a major contribution to the restructuring of British industry which has taken place at increasing speed over the past 20 years or so. It continues to provide the capital which enable entrepreneurs and management teams to start new businesses, expand existing ones or buy the companies they already manage to allow them to be revitalized and to fulfill their potential.

5.3 The Venture Capital Industry in Germany¹

Germany has emerged as one of the leading European nations in the development of high technology, Internet penetration and venture capital funding. Although the purpose of this chapter is not to analyze the reasons that account for this lead, some major factors have enabled Germany to be at the forefront of this new technological race. The launch of the Neuer Markt has generated an unprecedented momentum for technology and entrepreneurship growth in Germany, as well as a new perspective for traditional investors. German education based on apprenticeship has fostered a sense of entrepreneurship, risk-taking and initiatives

¹ This section is inspired from the following survey. www.smallfirm.org

fueled by the rise of new entrepreneur models. As a consequence, venture capital firms have emerged, and British venture capital firms and US ones have sought a part of this market.

Next to the apparent necessity for bootstrapping and personal collaterals, the relatively widespread participation in state and federal programs by German Internet start-ups is noticeable. Speakers from the German venture capital community have repeatedly pointed out the importance of these schemes, especially the BTU 'co-venturing' program. This scheme was created to support new technology-based firms and, indirectly, the growth of the German venture capital industry.

5.3.1 The BTU Venture Capital Program

The parapublic "Technologie-Beteiligungs-Gesellschaft" (TBG), an affiliate of the German Equalization Bank (DtA), was set up especially to promote equity investments in young technology firms. The responsibility for this program lies with the Federal Ministry of Education, Science, Research and Technology (BMBF). In the program, called "Business Investment Capital for New Technology-Based Firms" (BTU) and its predecessor "Business Investment Capital for New Technology-Based Firms" (BJTU), the funds of a lead investor are doubled. The investor's risks are lowered as well. The firm can exit from the arrangements at will, needing to pay only a minimal interest rate on the funds.

In 1997, 44% of the lead investors in the BTU scheme were VC companies and 20% were private persons, so-called 'angels'. Wealthy private individuals, who in the USA are active investors at a seed stage of a firm, used not to be common investors in Germany. In the recent years, this trend seemed to reverse.

From 1989 to 1994, approximately DM 170 million were invested in technology start-ups by the TBG and its co-investors. In addition to this program, the parapublic bank Reconstruction Loan Corporation (KfW) refinances venture capital companies. Including the investment activated by the refinancing scheme, the total investment through BJTU amounted to DM 314 million over 6 years, with a total of 336 firms invested in.

The BJTU program prides itself with the low failure rates of its firms. However, The low failure rate of 17% may also reflect an overly cautious approach by the program administrators. The two programs run by the DtA and the KfW together can be held responsible for initiating greater interest in seed and start-up investment phases by VCs in Germany.

5.3.2 Venture Capital in Germany

Introduction

The Economist hinted at a German “venture capital revolution” in June 1997. With DM 181 million investments in seed and start-up phases in 1996 and DM 394 million in 1997, Germany has positioned itself as an early leader in Europe. This growth in venture capital is even more surprising given general investment trends for Germany in 1996 and 1997. Reunification had caused an investment boom, which had abated, however, and from 1993 to 1997 investment in Germany overall was stagnant.

Next to the TBG, another positive influence on the venture capital market is the appearance of several corporate venturing schemes. Significant corporate ventures have been set up in Germany recently by firms such as Deutsche Telekom, Siemens, and Bertelsmann in part to achieve a window on technology. Lastly, the German stock exchange in March 1997 launched an alternative market for technology high-growth stocks called ‘Neuer Markt’ which has in its months of existence developed into an attractive complement or even substitute to NASDAQ and EASDAQ. The importance of an added exit opportunity for venture capital firms in Germany should not be underestimated, because it is mostly through a stock market listing that investments in seed and start-up firms pay off for the investor.

Characteristics of the Venture Capital market

Although the German venture capital market is growing, large differences still exist when it is compared to the more established markets in the USA or UK. The main differences are in the sources of capital, the public origins of a significant number of venture capital firms and the uses of capital.

Germany is characterized by the lack of participation in start-up private equity by institutional investors such as insurance companies or pension funds. According to the EVCA 1998 yearbook, banks accounted for 58% of funds (in the UK, 16%). Pension funds and insurance companies together accounted for only 23% of total venture capital in Germany (in the UK, 53%). The competitive landscape in Germany insurance companies and pension fund is much less intense than in the USA, apparently resulting in a less pronounced emphasis on return on investment. This seems to be changing slowly, however, as the proportion provided by insurance companies and pension funds is increasing steadily.

In Germany, venture capital firms involved in seed and start-up financing need to be divided into parapublic and profit-oriented firms, with of course, only the latter fitting the US and UK model. Parapublic “Mittelstandische Beteiligungsgesellschaften” (MBGs) were started in the 1970s and 80s by business initiatives and local chambers of industry and commerce with state-level public support. The most active MBGs are in Bavaria, Baden-Wuerttemberg, Hestia, Saxony and Thuringia. They provide equity capital for SMEs in the form of silent partnerships. For their partnerships, the MBGs are rewarded with a non-profit dependent interest component at a low interest rate.

The performance of the MGBs appears to be greatly under that of profit-oriented venture capital firms, however. An assessment of the BJTU scheme, in which MBGs also participated, revealed that their portfolio firms had the lowest results in turnover of all participating firms and were generally dissatisfied with their investor. Firms that profit-oriented venture capital companies had invested in sported the fastest turnover growth and were very satisfied with their investors².

Among the most active VCs in Germany, we can find: Atlas Venture, 3I, Apax Partners, TVW Technoventure Management Munich, Technologieholding VC GmbH, iNETiative Venture Capital Neuemedien GmbH and EarlyBird.

² Kulicke and Wupperfeld, 1996

German venture capitalists have started believing in their local icons and are funding startups at the fastest rate in Europe. Germany invested the most money in startups of all European VCs in 1998, the most recent year for which the EVCA has statistics. That year Germany led Europe with 28 percent of the \$1.6 billion in total early-stage investments made by European VCs. France came in second with 16 percent, and the UK came in third with 11 percent. German VC firms, along with the government, started investing vigorously in Internet startups in 1999. "Last year was the inflection point, and we've switched into hyper-growth," an EarlyBird partner says. Ideas for Internet startups in Germany mirror those in the United States, such as Internet auction house Ricardo, health and fitness Web site VitaGO, and Dooyoo.de, a lifestyle portal for Germany.

Figures about Venture Capital in Germany

Figure 5.1 shows the repartition of venture capital funding by type, and figure 5.2 indicates the repartition of funding by phase.

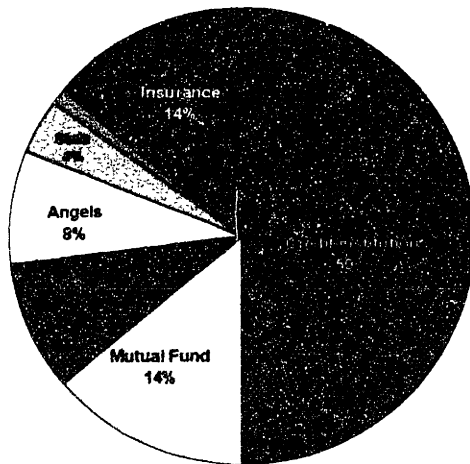


Figure 5.1: Repartition of venture capital funding by sources 1999
 Source: BVK German VC Association

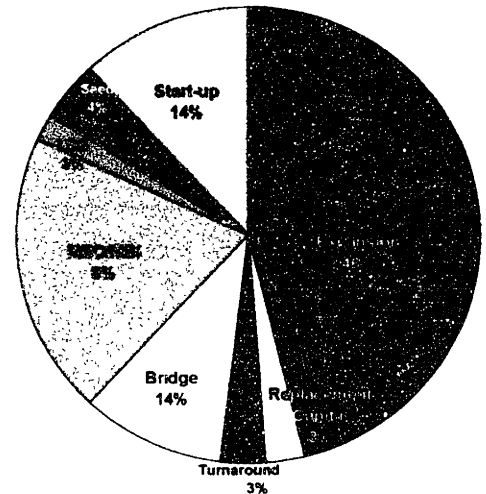


Figure 5.2: Repartition of venture capital funding by phase 1999
 Source: BVK German VC Association

The Neuer Markt, Germany's version of the NASDAQ exchange, is the place where VC firms want shares of their high-tech portfolio companies trading. More than 200 companies are listed on the Neuer Markt, which was founded three years ago. It added 139 new listings last year alone, 24 of them from outside Germany.

It is clear that Germany not only is changing quickly and is a leading force in Europe's VC community, but that other European nations are looking to it for leadership.

Chapter 6: Policy Recommendations

6.1 Introduction

This chapter intends to point out the main impediments to innovation and the flux of venture capital in France. Each barrier will then be analyzed, and policy recommendations will be drawn. The following step deals with the implementation of this policy analysis, and we will look at the current implementation in France of the Guillaume Law.

Indeed, aware of the impediments to innovation, entrepreneurship and venture capital in France, Claude Allegre (Education Minister), Dominique Strauss-Kahn (ex Finance Minister) and Christian Pierret (Minister of Industry) mended Henri Guillaume in July 1997 to analyze the main barriers and deliver some recommendations. Because the conclusions of this report have been recently available, it is still early to assess their implementation and confirm their validity.

Furthermore, we believe that this report does not address key issues such fiscal and legal barriers to innovation, that will be dealt with in this chapter.

6.2 Recommendations for the development of Venture Capital

It is useful to note that innovation, entrepreneurship and venture capital are linked to each other, and that while analyzing their specificities and drivers, we have to bear in mind this close relationship. We have analyzed 5 main impediments to venture capital in France, which are the following:

1. Institutional and Regulatory barriers
2. Paucity of High Tech & Small Businesses: How to develop innovation? and high tech clusters?
3. Human Resources: Talent, Education and Labor market
4. Cultural Issues: How to promote entrepreneurship and risk-taking attitudes?
5. Lack of competitive stock markets for smaller and growth companies

For each of them, we will assess the current situation, explain how they hinder the development of venture capital and we will give some recommendations.

6.2.1 Recommendations to Overcome Fiscal, Institutional and Regulatory Barriers

The following chart summarizes the main recommendations to overcome the fiscal, institutional and regulatory barriers. As we will see, some recommendations need a pan-European implementation when others are specific to the French case. Each recommendation will be described in greater details below the chart.

Measures	Objectives	Responsibility/ Participation
The adoption of prudential rules	Allow institutional investors, acting in accordance with “prudent man” rules, to invest in venture capital	Government (Ministry of Industry)
Development of long-term sources capital	<ul style="list-style-type: none"> ▪ Encourage funded pension systems throughout Europe ▪ Ease asset allocation restrictions ▪ Lift geographic restrictions ▪ Make investing in small capitalization stocks efficient 	Government and member states
Tax rewards for private equity investments	<ul style="list-style-type: none"> ▪ Lower taxes on gains ▪ Higher write-offs on losses 	Government
Encourage Tax-efficient Share Incentives	<ul style="list-style-type: none"> ▪ Create incentives for entrepreneurs and managers ▪ Stock Options 	Government
Facilitate Fund Formation	<ul style="list-style-type: none"> ▪ Transparent Private Equity Fund Structures Throughout Europe ▪ Ultimate Goal: A European 	Government and member states

	transparent fund structure	
Give public support only when partnered with private equity	<ul style="list-style-type: none"> ▪ Create appropriate framework ▪ Venture capital as a partner 	Government
Assess existing accounting and auditing requirements	<ul style="list-style-type: none"> ▪ improve the French standards ▪ Converge towards European harmonization 	Accounting bodies & corporations
Simplification of the administrative requirements for setting up firms	<ul style="list-style-type: none"> ▪ Allow more flexibility for entrepreneurs ▪ Decrease the length to set up a new venture 	Government
Reform of the legislation on insolvency and bankruptcy	<ul style="list-style-type: none"> ▪ Soften the bankruptcy law ▪ Decrease the cultural burden caused by bankruptcy 	Government
Facilitate the transfer of company ownership	<ul style="list-style-type: none"> ▪ Increase awareness of MBO-MBI financial solutions 	Government & Financial Institutions

The adoption of prudential rules

The objective is to allow institutional investors to act in accordance with “prudent man” rules to invest in venture capital. Indeed, it is the investors in the venture capital fund or company, and not the venture capitalists, who decide on the flow of capital to the venture capital sector and to segments within it. Venture capital managers only act as intermediaries to invest capital committed by institutional investors. The institutional component in the funding for venture capital is important, yet venture capital funding is usually only marginal to institutional investors, at best a few percentage points.

Venture capital can only grow in France if investors allocate more capital and if more long-term sources become available. While banks still provide a third of the capital, their investment horizons are usually shorter, pushing venture capital to invest in safer and more mature private companies. It is furthermore important to ensure the existence of a diversified

range of competitive venture capital fund managers, generalists or specialists within the full private equity investment spectrum across Europe.

Development of long-term sources of capital

Encourage Funded Pension Systems Throughout Europe

Venture capital is essential to fund the start-up and development of firms. Venture capital investments are generally long-term and thus their sources of funding should be those of a similarly long-term nature, such as capitalized pension funds or insurance company portfolios.

Pension systems vary across Europe. Some countries, such as the UK and the Netherlands, have funded pension schemes in which an identifiable pool of assets provides retirement benefits. Most European countries, however, rely on pay-as-you-go social security pension systems. But demographics indicate that short-falls loom for this unfunded type of system. The diminishing percentage of the population in the workforce will be unable to support the growing retired population. To assure retirement income, countries will have to adopt funded pension systems. Governments should be strongly encouraged and supported in this trend.

Funded plans bring benefits beyond their ability to plug the funding gaps of a pay-as-you-go approach. With regular inflows of money paired to long-term liabilities, funded plans are able to concentrate their portfolios in long-term assets producing superior returns. Furthermore, investments in capital markets help stimulate economic growth and job creation, and improve a country's competitiveness.

Ease Asset Allocation Restrictions (EVCA, 45, 1997)

Of course, in order for funded plans to fully realize the returns offered by venture capital, a country's regulatory framework must first permit them to invest in this asset class. This is not universally the case. Throughout much of Europe, pension fund allocation is handicapped by unfavorable regulations, taxation, and investment restrictions.

This is in contrast to the US and the UK, countries acknowledged to have superior pension fund performance. Rather than imposing tight quantitative guidelines, these two countries

govern pension funds with “prudent man rules” that call for managers to carry out sensible portfolio diversification.

In the US, prudent man guidelines first permitted pension funds to make venture capital investments in the late 1970s. Another US pension guideline, ERISA’s “Safe Harbor” regulation went further. It is interpreted as actively encouraging pension fund investment in venture capital and private equity situations. Even though only a small percentage of US pension fund assets has since been invested in private equity, this has nevertheless represented an enormous source of financing for this asset class which in return has contributed superior performance to pension fund portfolios.

The allocation to venture capital is not an altruistic undertaking. As an asset class, private equity has demonstrated its ability to produce superior returns and the companies it backs social benefits to their home countries. The time has now come to ensure its inclusion in the portfolios of all countries’ pension systems.

Lift Geographic Restrictions

Another restriction contrary to best economic interests is that some countries prohibit or limit pension funds from cross-border investing. Such rules are unacceptable. In fact, they are in breach of EU laws. Pension funds should not be subject to regulations requiring that a proportion of assets be invested in a country’ s own capital markets: rather, performance within prudential guidelines should determine allocation. European economies will benefit from free movement of capital.

Make Investing in Small Capitalization Stocks Efficient

It is widely recognized that efficient exit mechanisms, particularly a vibrant stock market for growth companies, are essential to a healthy venture capital industry. It is also the case that for markets specializing in growth companies to flourish, there must be buyers for the stocks listed on them. Sadly, this has not been the norm in much of Europe where institutional investors have been relatively insignificant buyers of small company stocks. Again, the comparison with the US and the UK is sobering but instructive. In these countries, institutional investors have been significant buyers of small-company stocks. This reflects

their regulatory freedom to make such investments and also the existence of the necessary support systems.

European authorities must first of all permit pension funds to invest in small capitalization stocks. Furthermore, investment in these stocks must be made feasible for institutional investors. High standards for financial disclosure and strict standards of corporate governance must be required. Intermediaries for small-cap stocks need to be encouraged. These must include ethical, high quality investment bankers for these companies and research analysts providing stock coverage.

Tax Rewards for Private Equity Investment

Equity investments in privately owned enterprises involve more risk and illiquidity than investments in larger or quoted companies. The gap puts smaller growth-oriented firms at a chronic disadvantage in raising long-term investment capital. Lower taxes on gains, higher write-offs on losses and private equity (re)investment relief should be the governments' contribution to the risk/reward ratio. Besides, this (re)investment relief will also promote the experience of private investors as business angels.

Encourage Tax-efficient Share Incentives

Create Incentives for Entrepreneurs and Managers

Entrepreneurs and skilled managers bear the highest risk in launching growth companies. Managers who move from a large to a small firm usually accept lower initial income and invariably lose fringe benefits: they almost always accept a lesser degree of job security. In addition, entrepreneurs, managers and directors of a new company often supply its initial equity capital. This investment may well be lost, as the failure rate for start-ups is high. Although the public increasingly recognizes the role of entrepreneurs, that recognition is seldom echoed by economic reward in the form of favorable tax treatment.

A low capital gains tax rate, tax deduction of losses, and up-front investment relief are ways to offer reward and motivation for the significant personal risks inherent in launching or joining a new business. Entrepreneurs and managers of new businesses should not be

discouraged by adverse tax treatment. Rather, the possibility for founders to acquire, on attractive terms stock of the companies they serve should be widened.

Gains realized by employees and investors on their incentive shares in growth companies should be subject to a low capital gains tax and to no other forms of taxation.

Stock options

For entrepreneurs, managers and employees of growth companies, stock options can represent a particularly effective financial incentive. Options can offer the attainable dream of wealth and financial independence. Smaller firms cannot afford to pay managers large firm salaries or offer large firm benefits or security. But managers may be prepared to work in a smaller company at a lower salary if there is the prospect of potentially valuable stock options. An effective option plan can be an indispensable tool for recruiting skilled managers.

Securities rules governing the issuance of stock options, and fiscal rules determining the level and form of taxation and when that taxation occurs, influence whether it will be sufficiently attractive to risk working for a start-up company.

Unfortunately, in many European countries gains realized from the exercise of options are taxed at the same rate as if they were income. To create a truly effective incentive, there should be no tax on the issue or exercise of options to buy shares, provided that their exercise is not less than the market price was on the date the option was granted. Any tax should be at a low capital gains rate incurred upon sale of shares received from exercise of the option.

The stock options issue is currently at the center of a fierce debate in France. Straightforward and simple measures would certainly have some strong benefits. This debate will persist until the government agrees on some reform of the stock options status.

Facilitate Fund Formation

Transparent Private Equity Fund Structures throughout Europe

Some European countries have private equity fund structures that accommodate national and international investors, but many countries lack a suitable structure, while others impose

overly restrictive structures. The basic problem is that if a fund is simply structured as a local company, taxation is payable at the level of the fund in addition to being payable at the level of the investor (i.e. there is double taxation). In order to avoid double taxation, investors from countries without an efficient structure often have recourse to structures based in low tax areas or tax havens. This is less than ideal. Not only is the process often cumbersome for investors, the home country loses much of the positive effect these investments can have on employment and economic growth.

In addition, venture capital is increasingly an international business with funding, management and investment not constrained by national borders. A fund may have several locally based management teams and may make investments in more than one European country. Although such funds are in keeping with the European Union's objective of a single market, their structuring, marketing and operation at present create fiscal and regulatory nightmares. Different tax treatments for venture capital and bilateral double taxation treaties open the door to extensive treaty shopping which can lead to complex and expensive structures.

There is a major need for the development of a new European structure or for the adoption of a common European approach with a standard taxation treatment based on the principle of transparency.

The measure of an efficient venture capital fund structure is simple. Fund investors should be no worse off than if they had made an investment directly, without the fund as an intermediary. This is what is meant by tax transparency- tax liability should pass directly to fund investors without the fund first paying taxes on either capital gain or income. Investors should also get any tax credits tied to dividends and interest, withholding tax should be minimized through the application of the double tax treaties of the investors, capital gains tax should only be paid at one level- that of the investor, and fund management charges should be exempt from value-added taxes.

Ultimate Goal: A pan-European Transparent Fund Structure

The ultimate goal is to have a pan-European transparent fund structure. The availability of an efficient pan-European structure would increase the amount of capital available within Europe for private companies and increase the incidence of trans-national investments.

Give Public Support only when partnered with Private Equity

Create Appropriate Framework

Governments and pan-European institutions are eager to reap the economic and social rewards tied to venture capital activity. To that end, they are examining what facilitating role they can and should play. The most important way they can aid venture capital is by establishing sound financial, fiscal and legal regulations.

Venture capital as a Partner

Most countries go further, creating programs that supply equity or soft loans to unlisted companies, or that offer incentives to particular types of investments or industries. These incentives are well intentioned, but for them to be truly effective, it is vital that they be applied with caution and only in partnership with private investors.

Misdirected or excessive public spending can displace or retard the development of the private sector. Governments may cause distortions by creating unfair competition or by sustaining unprofitable projects. These types of programs are certainly to be avoided.

Government measures should stimulate the development of venture capital markets based on the competitive functioning of professional fund managers. Support measures should allow all funds to operate on a level playing field. The public sector should reduce the risk and cost of venture capital investments only to the extent that the development of the private sector venture capital industry is complemented and encouraged.

The allocation of funding from government programs should be made using the skills of venture capital professionals. The most effective programs first elicit private sector

participation in the design stage and then look to the private sector to play a professional role in the program's functioning.

Additionality

The best public incentives stimulate private sector funding that would otherwise not have occurred. In such programs, government funding is leveraged by private capital.

In order to attract investors, government programs should have attractive returns to private investors as a key program objective. This calls for programs that channel capital to financially promising companies, generate investor profits and develop a self-sustaining investment activity. The most desirable government programs are those that strengthen the private venture capital sector and then, as private markets mature, are phased out. The economic and social benefits of such programs continue long after the government's direct role has ended.

Assess Existing Accounting and Auditing Requirements

New initiatives have already been taken in France regarding accounting policies. The Nouveau Marché, for instance, has required that firms progressively adopt the GAAP policies in order to harmonize the EuroNM network.

However, recent research papers about corporate governance [S. Johnson & R. La Porta, 46, 2000] and company disclosure in France have shown some flaws. According to four major auditing firms [Le Monde, 47, 1999] the quality of financial disclosure in France still lags behind its European counterparts. The study shows that 75% of European companies deliver quarterly reports within 75 days, compared to 39% in France. Management compensation still belongs to the taboo topics. In the near future, French companies will have to comply with the IASC (International Accounting Standards Committee) rules.

Simplification of the Administrative Requirements for setting up firms

As already mentioned in the Chapter 3, administrative requirements for setting up new firms in Europe can be cumbersome. This is one of the aspects of new business start-ups that has received most attention in recent years. The usual comparison is made with the US where a company can be set up in a matter of hours. The following chart gives an overview of the number of weeks necessary to formally establish a new company.

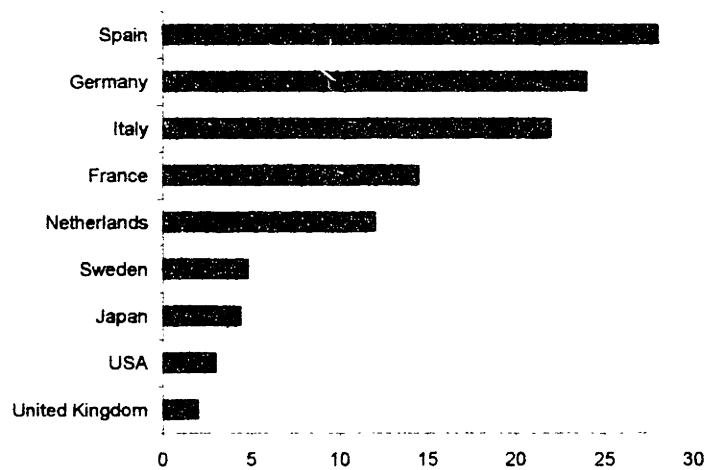


Fig 6.1: Maximum number of weeks for setting up new company (Source: Logotech 1997)

The situation with regard to registration requirements, i.e. the number of documents and visits required, shows a somewhat different picture (See Fig 3.14). France appears as one of the worst performer. Aware of this impediment to innovation, the recent law on Innovation and Research has initiated changes in the legal structure of start-ups. This new structure called “Societe par Actions Simplifiees” allow more flexibility with regard to capital requirements, shareholder relations, board of directors formalism, number of founding associates requirements and voting structures.

Reform of the Legislation on Insolvency and Bankruptcy

This issue is as much a legal issue as a cultural one. Silicon Valley and other entrepreneurial regions are filled with successful growth businesses founded by people who have had a business failure. Following some recent interviews with venture capitalists on the West Coast, they considered an entrepreneur having failed and trying a new venture as a highly successful potential- “it is almost a must”. Another interview with 2 entrepreneurs, dropped out of

business school and medical school, revealed how much one could learn by failing, and how much attention they were receiving from their entrepreneur peers, and angel investors. What would be the likelihood of such a close attention in France?

In general, in Europe failure is looked on very negatively and perhaps more in France than in other European countries. The extremely selective educational process often provides an early feeling of failure or success. Such an education usually makes students from the Grandes Ecoles risk adverse people, given the large range of opportunities they are offered as soon as they graduate. Besides, as Tony Blair recently described it (3iventurelab, 48:

“The old right-wing elite regarded entrepreneurs as beneath them. The Left regarded them as antisocial. When we should have been hugely proud of our entrepreneurs, we tended simply to wait until they fell flat on their faces and if possible helped them to do it”

This attitude towards failure can be seen in the various national bankruptcy laws that punish failure in a variety of ways affecting both the entrepreneur’s professional and private life (including, in most countries, the possibility of being sent to prison). The stigma attached to the mere fact of going bankrupt for whatever reason is an ingrained European phenomenon, and it can be said that the safest career path in Europe is to avoid mistakes rather than demonstrate initiative.

When comparing to the US system, another consideration concerning bankruptcy is whether there are “soft landings” or intermediate steps prior to bankruptcy itself that permit restructuring and protection while the management straighten up the situation.

In the US, chapter 11 is designed for reorganizing troubled businesses. The treatment of the debtor’s creditors and holders of ownership interests and the future of its business are set forth in a plan developed by one or more of the parties. If the plan meets the statutory requirements and is confirmed by the court, it becomes a master contract that redefines the legal relationships among all who have claims against (or interests in) the debtor.

Facilitate the Transfer of Company Ownership

The succession of ownership and motivated management is important to small and medium-sized companies, especially if owned and directed by families, which covers a large share of all European companies, and France in particular. In a French survey carried out by 3i, over 40 percent of a large sample of family-owned or family-directed companies lost their family status during the 80s-90s, either by being acquired or by going into receivership.

As part of entrepreneurial awareness, there is a need to heighten the business community's recognition of the potential of management buy-outs and buy-ins. A widespread knowledge of this financing method will mean that in planning corporate restructurings, companies and managers can access the full range of possibilities and be able to choose the option that maximizes the economic and social outcome. By offering managers the possibility to take over a company, buy-outs enable a business to have a lifespan that exceeds the original management's involvement.

6.2.2 Cultural issues and Human Resources: Talent, Education and Labor market

In spite of a high level of education, France needs to widen the pool of available managerial and entrepreneurial talent, as well as bring more flexibility to the labor market. Both issues will be dealt with in this section.

Each recommendation will then be studied in greater details.

Measures	Objectives	Responsibility
Foster entrepreneurship education	<ul style="list-style-type: none">▪ Create new programs in universities and Grandes Ecoles to promote entrepreneurship▪ Encourage partnerships between universities/Ecoles and start-ups (incubators...)▪ Encourage lifelong learning and adult	Minister of Education, Universities, Grandes Ecoles & various related Ministers

	education	
Foster entrepreneurship collaboration between public research, private companies and government	<ul style="list-style-type: none"> ▪ Help commercialize research ▪ Increase collaboration between research institutes, private R&D and universities ▪ Decrease the control of government over public financing of research ▪ Encourage spin-offs from private corporations 	Government, Universities, Research institutes and private corporations
Promote a flexible work environment	<ul style="list-style-type: none"> ▪ Reform of the labor market laws ▪ Lower social welfare taxes ▪ Reconsider stiff rules regarding hiring and layoffs 	Government
Create incentives to work in start-ups and promote risk-taking attitudes	<ul style="list-style-type: none"> ▪ Facilitate the use/ lower the taxation of stock options ▪ Foster role models ▪ Reward financially and socially risk-taking attitudes 	Government & Public opinion

Foster Entrepreneurship Education

Entrepreneurial success stories serve as an inspiration to others, inciting them to create and work for young companies. While some entrepreneurial traits are innate, many can be taught. But entrepreneurial studies have received scant attention in French Grandes Ecoles and universities. This shortcoming should be redressed.

Promote or Create Entrepreneurship Courses in the Universities and Grandes Ecoles

French educational institutions should develop courses and departments in entrepreneurship. Recently, Insead started an entrepreneurship center following the path initiated by business Grandes Ecoles such as Essec or HEC. In these courses, managers, entrepreneurs, and private equity professionals would learn effective ways to pursue opportunities and manages

resources. By examining and celebrating the examples of successful entrepreneurs, schools can release the entrepreneurial spirit in a broad number of people. Schools should teach that this spirit and its accompanying skills can be applied to start-ups and larger companies. It is important for training to extend also to entrepreneurs' advisors- lawyers, accountants and management consultants.

The creation of university chairs for teaching entrepreneurship should be promoted throughout Europe. Recent initiatives in France include:

- The Ecole Nationale des Ponts et Chaussees has launched a reform of its program, one of objective of which aimed at fostering innovation and entrepreneurship.
- The Ecole Nationale Superieure des Mines de Paris has launched a new initiative to allow students to work on a start-up creation over the 3-year curriculum.
- The Ecole des Hautes Etudes Commerciales has strengthened its program HEC entrepreneurs to offer a new international perspective.
- ESC Grenoble has launched a master in entrepreneurship.

Other potential initiatives could include partnerships between technical universities and business ones, or Ecoles d'ingenieurs and Ecoles de commerce, in order to offer common courses and stimulate networking. Business plan competitions should be increased among Ecoles and universities to create an innovative stimulation at the regional and national levels. Incubators should spin-off from universities and Ecoles, and students should be able during their studies to access the resources of these centers. Conferences should include a higher percentage of young entrepreneurs, and universities as well as Grandes Ecoles should hold start-up career fairs. Schools may also want to include the option to intern in a start-up for a couple months as part of the curriculum.

Encourage lifelong learning and adult education

Training professionals has various advantages. It allows firms to keep up to date on current knowledge, and give their employees an education that the firm cannot handle with its internal training. For employees, it allows them to take a new direction in their professional career or earn promotions. For universities, it allows them to have students with experience and to

reinforce their interaction with the industrial world. Besides, these initiatives foster networking and allow people to interact and meet other ones with valuable experiences.

Foster entrepreneurship collaboration between public research, private corporations and government

According to the Observatory of Sciences and Technologies (OST), the global percentage of technical publications written by French laboratories went up from 4.3% to 5.1%. However, the percentage of French patents in Europe decreased from 8.5% to 7%. These figures show a gap between the research and the technological applications. In France, the lack of a straightforward structure linking the technological research and the economy constitutes the main reason for this gap. Such structure could also improve the commercialization of research.

As a consequence, mobility of researchers between public and private sector should be encouraged. Currently, 30 to 40 researchers out of 25,000 are part of the mobility program. The government should also allow public researchers to create start-ups and stimulate spin-offs. It should also help laboratories to replace these researchers who leave in order to run their ventures. The government should continue its efforts of decentralizing research, and foster the creation of technological clusters located around existing universities. Besides, cooperation between public research centers and private corporations should be facilitated, and public spending for R&D decreased to allow private sector to play a more active role in the commercialization of technical research.

Promote a flexible work environment

The existence of a mobile labor pool helps promising young firms attract talented workers. Europe, and France, in particular, is handicapped in this respect. Growth entrepreneurs are often unable to hire someone to fill short-term or part-time needs and cannot afford to hire someone with a full-time contract. Recent measures to impose shorter fixed workweeks are moves in directions that are not necessarily helpful to growth entrepreneurship.

On the other extreme, in the US employers can layoff at will, within a couple hours. To create a less rigid job environment, countries should promote such measures as flexible labor laws and portable pension funds. Heavy social welfare taxes and stiff rules regarding hiring and layoffs create huge expenses for small companies that should be eased.

In the case of the restructurings that bankruptcies represent, French laws and attitudes also need to shift. In Europe, and in France, bankruptcy is stigmatized and the head of a failed company has dismal career prospects. Again, this is in sharp contrast to America's more tolerant view of failure- in the US managing a company that goes bust may actually be viewed as a useful experience. While it is important that a country have adequate creditor protection, a troubled company should go through its failure as efficiently as possible.

Create incentives to work in start-ups and promote risk-taking attitudes

The ability to freely issue stock options for the individuals who receive them to get reasonable fiscal treatment is an important staple of American-style entrepreneurship. Such options provide a non-cash mechanism for entrepreneurs to attract and compensate key employees whilst allowing these employees to share in the company's fortunes, thus constituting a strong motivational element.

However in France, taxation systems view income from such stock options as just another part of the work effort and treat them as normal salary, ignoring the fact that normal salary is 'certain income', stock options by their very nature are risky. French legislation also levies social charges on stock options.

It is clear that a flexible legislation would create incentives for talented people to join risky ventures and accept lower salaries. The last few months in Europe have witnessed a unique situation where young people are leaving established firms to work in more flexible environment. Large firms have started reacting to this bleeding situation by proposing generous packages including stock-options, and more flexible workstyle.

Despite this current trend, start-up as well as venture capital firms still lack talented people. Europe, and France in particular, still lacks role models of entrepreneurs and venture capitalists. Third-generation Internet entrepreneurs can be easily found in the US, where Europe has still to present the first generation. Yet, no French Bill Gates has emerged. Successful American VCs such as John Doerr became as famous and respected as the entrepreneurs they financed.

Finally, risks should be socially and financially rewarded. The same way risk and return interact in investment management, the same way society should reward those who take risks and create value in innovation. French economy is currently experiencing a unique situation, and will certainly emerge as a more innovative and risk-friendly culture.

6.2.3 Lack of Competitive stock markets for smaller and growth companies

In the United States, the creation of many fast-growing companies and the rapid development of venture capital were due largely to the existence of vibrant and efficient stock markets. In contrast, European stock markets, except for the United Kingdom, have largely failed to provide such a capacity. For many years, development of liquid stock markets for the securities of European growth companies has been acknowledged as an element needed to foster private equity.

Historically, Europe lacked sizeable public markets on which promising venture-backed firms could raise equity capital at attractive conditions. Although, France should be involved actively in the promotion of such a market, critical size is vital. As a consequence, such a market may only be viable at a pan-European level, integrated in a broader system.

Main Purpose

The main purpose of stock markets should be to provide capital for the growth of the most promising companies at an attractive cost and provide high trading levels so as to ensure liquidity for the shareholders. Such vibrant stock markets will allow fast-growing companies to remain independent and not to become adjuncts of large corporations before their true potential and contribution to the French, and European economy as independent businesses has been demonstrated. Realizing part of the holding in the company allows entrepreneurs to

harvest some of the creativity and hard work, spread their financial risks, reward loyalty of initial partners, without losing independence. Eventually, the use of listings on the United States' stock markets as a way for European high-growth companies to harvest returns will become less attractive, if European stock markets are competitive.

Elements of a Pan-European Growth Companies Stock Market

The new pan-European stock market should be:

- Organized independently with proactive management
- Dedicated to growing enterprises with international aspirations
- Taking full advantage of the European Union Directives on financial services
- A fully regulated market with single standards for listing and membership and fair and harmonized enforcement throughout Europe
- A trading system which supports high levels of liquidity and easy access from all over Europe;
- Promoting the sponsorship of the listings by investment banks and the availability of quality research and information
- Facilitating multinational placing and offers, outside Europe as well.

Recent changes

The past few years have seen significant progress to correct this shortcoming. The fall 1996 opening of EASDAQ was a milestone. Recent launches of UK's aim, France' Nouveau Marché, and Germany's Neuer Markt and the EuroNM system linking several growth companies stock markets are extremely positive developments in that they all provide capital for Europe's growth companies.

The Nouveau Marché

Le Nouveau Marché, the first " New Market " in Europe opened on February 14th, 1996, is a market dedicated to innovative companies with high-growth potential. It is managed by ParisBourse SBF SA and has its own rules and membership.

All aspects on trading in Le Nouveau Marché benefit from the same level of service as traded shares of blue chip companies. Le Nouveau Marché is in particular a magnet for high-technology companies, from various sectors, such as Telecom, Software or Life Sciences.

Three years after its creation, Le Nouveau Marché has accomplished several significant achievements: more than 100 companies are listed, which have raised capital of € 1,5 billion and represent a market capitalization over € 5.5 billion. Le Nouveau Marché includes 82 members and 72 associate members (as of August 1999).

Coming Priorities

Despite achievements, much remains to be done. These markets are still in their infancy and support for them must not falter. If or when overall capital market conditions weaken, these markets must do better than the European secondary stock markets of the 1980s that had insufficient mass to weather the downturn for growth markets at the end of that decade.

A main goal should be to increase the liquidity of these young markets. In part, this will happen as European funded pension plans are developed and invest in capital markets. But this will occur slowly. Additional aids to liquidity are needed.

Increased involvement of financial intermediaries in these markets must be encouraged. Intermediaries contribute to market liquidity through investment banking activities (introducing stock on a market), through market making (ensuring an active, efficient after-market), and through research coverage of stocks (providing the information essential to investors).

European authorities can stimulate the interest and activities of financial intermediaries by making reliable information widely available, by promoting high standards for financial disclosure, and by teaching companies the best practices for dealing with bankers, analysts and investors. An important part of the drive for liquidity should be encouraging companies to be listed on these secondary markets.

6.2.4 Other measures to promote entrepreneurship in France

Other measures consist of enhancing intellectual protection, which is key to developing new ventures in most cases. Besides, the creation and development of clusters or networks such as the Silicon Valley are important to sustain and improve the innovation environment.

Clarify intellectual property and license ownership	<ul style="list-style-type: none">▪ Enhance intellectual property protection▪ Increase IP awareness as a competitive advantage	Government
Creation and development of clusters	<ul style="list-style-type: none">▪ Promote regional locations▪ Attract variety of professional services, researchers and students to create a stimulating environment	Government

Clarify Intellectual Property and Licensing Ownership

The treatment of an entrepreneur's intellectual property is of utmost importance. For many young companies, intellectual property represents almost the entirety of their assets. France must ensure that innovative companies have a fair chance of being rewarded. It is important to process patents and licenses efficiently and to have an effective enforcement system.

Regulatory systems that police the development of new drug or biotech products must be able, without undue delays, to judge them. Without a timely regulatory review, an inventor will be burdened with a costly waiting period, during which entrepreneurs elsewhere may gain a lead.

Creation and development of clusters

The French president, Jacques Chirac, recently visited "Republic Alley", one of the most active high-tech cluster in Paris along with "Silicon Sentier". The message was clear: these bursting pockets of innovation are the new drivers of value creation, and should be enhanced. Already service professionals, real estate, accountants, lawyers have moved or focused on these areas where new incubators and start-ups are being created every day. Other active clusters include Sophia-Antipolis, Orsay in the south of Paris.

The informal melting of entrepreneurs, venture capitalists, consultants, engineers, students is already stimulating a new entrepreneurial culture. Weekly and monthly events have gained popularity, such as First Tuesday.

6.2.5 Conclusions

Many of the points herein echo the views of entrepreneurs throughout Europe, for instance, Emma Marcegaglia¹, President of Cofindustria Young Entrepreneurs, Italy, who succinctly summed up her views thus:

“The main bottlenecks to the growth of small businesses are: lack of flexibility in the job market, over-regulation and high bureaucratic costs, and the difficulty in gaining access to capital and equity markets”

The situation in France is no different, and perhaps even less conducive to entrepreneurship growth than in other European countries. The challenge for the government and all the active stakeholders is, then, to create environments which will enable that entrepreneurial spirit to thrive and prosper as much as possible, not just in the interest of the individual entrepreneur, but in the interest of society as a whole in terms of creation of wealth and employment. The entrepreneurial potential is there, it is a question of focusing on issues related to the development of that potential.

¹ See the Climate for Growth Entrepreneurship in Europe (3iventurelab INSEAD)

Chapter 7: The Challenges

This thesis has pointed out a number of challenges, at the European level as well at the national level in France. Although the European Union has long recognized the importance of fostering entrepreneurship, and that “a strong entrepreneurial culture is essential for the future competitiveness of the European economy and for generating growth¹”, it is still debating how to initiate this change. France has also identified for long entrepreneurship and venture capital development as one of the priorities necessary to foster employment and economic growth.

The main challenge is probably best summarized as one of flexibility. Regulations and procedures of all sorts need to be re-engineered to encourage and promote the fluid development of businesses. Flexibility to adopt new cultural mindsets: risk-taking behavior, different attitudes towards initiative, success and failure. Flexibility to allow the labor market to move easily from one company to another, to serve as free lancers, or “e-lancers”, and then move to another project. Flexibility to manage the large existing public companies, and rejuvenate them to keep them competitive. Flexibility to adopt a lifelong learning attitude and regularly retrain.

Finally, government and other institutions must realize that charges they levy across the board will have an impact in terms of the entrepreneurial competitiveness and attractiveness of their constituents.

Indeed, the good news is that there has been a significant opening, especially in the government circles. Government agencies have been pondering and making changes in many of the areas cited in this thesis. The Guillaume Report has served as the first step towards the development of entrepreneurship, innovation. It has clearly identified the development of venture capital as one of the current priority. These efforts are to be encouraged, although it is probably preferable that the approach be dynamic and open-mind based instead of static, too

¹ Speech on Technology, Skills and Training (European union, Feb 2000)

precise and bureaucratic. Stock options, for instance, are still at the core of a fierce debate and legislation is slow to reform.

This drives to the importance of public opinion and role models. When Jacques Chirac recently visited Republic Alley (cluster of high tech and internet start-ups in the heart of Paris), and declared that these companies embodied the model of the new economy, this served as a strong example.

As a conclusion, France has the potential to lead the new European economy leveraging the talented and highly educated available pool of engineers, managers and workers. The new generation is no less innovative or risk taker than its counterpart in the US. However, entrepreneurship growth must not be considered as an isolated phenomena like in the past. Strong measures described in this thesis must be taken diligently and reasonably. Ultimately, entrepreneurship and the development of venture capital in France is about action rather than analysis, and, despite its high potential, France has still much to achieve.

Appendix 1a: Venture Capital Financing in 1999 in France (main investments in Software companies)

Source: www.journaldunet.com

Legend.

ECO: Econet

TVC: Traditional Venture Capital

FVC: Foreign Venture Capital

CVC: Corporate Venture Capital

IBVCG: Investment Bank Venture Capital Group

Company	Activity	Amount raised (in FFm)	% capital	Date	Investors	Type
Acante	Micropayment	10	NA	NA	Innovacom (50%)	CVC
					Sofinnova (50%)	TVC
Alliance	Mailing fax	2.5	20%	Jul 99	Siparex and Cofidep	TVC
		2	NA	Sep 99	Siparex Ventures I	TVC
Aplio	IP telephony	13	NA	Feb 99	Galileo Partners	TVC
					Banexi Ventures	IBVCG
					CDC Innovation	IBVCG
Boostworks	Increase internet speed	40	52%	NA	Sofinnova	TVC
					Banexi	IBVCG
					Partech	FVC
					Innovacom	CVC
					Cross Atlantic	FVC
Com 6	IP Telephony	10	NA	Oct 99	SPEF Banques	IBVCG
					Populaires Group	IBVCG
					Natexis Ventech	IBVCG
					Sofimac	TVC
IMediation	Internet Solutions	58	NA	March 99	Apax Partners	FVC
					Innovacom	CVC
Epicentric	Internet Solutions	7.5	NA	NA	Viventures	ECO
					Innovacom	CVC
Esual	Online Catalog	1	NA	August	Trinova	TVC
					CIC France	IBVCG
Freever	Mobile users community software	1.5	15%	Oct 99	CDC Innovation	IBVCG
Infovista	Internet Solutions	5	NA	Jan 99	Dassault	CVC
					Developpement	
Intersoft	Integration and online implementation of prowares	2.5	NA	Jul 99	Seeft	TVC
					Trinova	TVC
Keeboo	Software	>66	NA	Dec 99	Apax Partners (32%)	FVC
					Paribas Affaires Industrielles (45%)	IBVCG
					T-Venture (4%)	FCVC
					Technologies Holding	FVC
					Auriga Ventures	FVC
Light Logic	Optical fiber	3	NA	Jan 99	Innovacom	CVC
					Dassault	CVC
					Developpement	
Multitude	Teleconference	6.5	NA	NA	Innovacom	CVC
NetCentrex	IP Telephony	7.5	NA	April 99	TechnoCom	TVC
					T-Ventures	FCVC
					CDC Innovations	IBVCG
Netgem	Set Top Box	20.5	NA	Jul 99	Cnet	FCVC
					Galileo Partners	TVC

					(36.6%) CDC Innovation (63.4%)	
NetToll	ISP electronic payment	>12	NA	August 99	Galileo (50%) Cisco (35%) Reuters (15%)	TVC FCVC FCVC
OpteWay	Software	10	NA	Oct 99	3i	FVC
Oxydian	Information system diagnostic	4.5	23%	June 99	Viventures (20.5%) Natexis Ventech (2.5%)	ECO IBVCG
Phone.com	WAP	NA	NA	NA	ABN AMRO	IBVCG
Reef	Software	85	NA	Oct 99	Viventures Cisco Net Fund Europe	ECO FCVC FVC
Scort	Proware	25	NA	Feb 99	Ventech AXA investment managers Sofinindex Innovafrance	FVC IBVCG TVC TVC
SmartTrade Technologies	B2B online brokerage platform	4	NA	Nov 99	Seeft	TVC
Sefas Technologies	Software	23	NA	Sept 99	Sofinnova Partners SPEF	TVC IBVCG
Solsoft	Intranet/Extranet security	30	NA	Feb 99	Viventures (23.33%) Natexis Ventech (23.33%) SG Asset Management (20%) Sofinnova (13.33%) Technocom Venture (10%) Cita (10%)	ECO IBVCG IBVCG TVC FVC N A Public CVC
SQLi	ebusiness applications	NA	12%	Sept 99	Anvar Dassault Developpement Innovacom	CVC TVC
Sharing Technologies	Proware	NA	NA	July	Siparex	TVC
Streamcore	Bandwidth management for ISP	24	NA		3i Innovacom AGF Private Equity	FVC CVC IBVCG
Swan	Enterprise Software	NA	10%	NA	Partech	FVC
Talkway	ecommerce marketing platform	NA	NA	NA	ABN AMRO	IBVCG
XTS Network	IP Telephony	8.4	33%	Sept 99	Seeft, BA	TVC
Webdialogs	Call center platform	4	NA	July 99	Sofinnova (43.75%)	TVC

Appendix 1b: Venture Capital Financing in 1999 in France (main investments in Internet Services companies)

Company	Activity	Amount raised (in FF m)	% capital	Date	Investors	Type
Consodata	Profiling	20	NA	NA	Galileo Partners Founders (34%) Nomura Securities London (34%)	TVC IBVCG
Freesbee	ISP	163	NA	NA	Sofinnova (15%) 3i Group (11%) Cita (5%) CFI (2%) Innovacom (20.2%) Matignon Investissement (14.2%) FG investments Ltd (3.2%)	TVC FVC NA NA CVC FVC FVC
NetValue	Metrics measurement	10 80	NA NA	NA Dec 99	I-Venture (10.1%) Europatweb (1.7%) Soc Gen (1%) ABN AMRO (6.7%) COMIR (2.6%)	FVC FVC IBVCG IBVCG NA
SurgeonLine	Medical B2B	27	NA	Oct 99	3i Net Fund Europe	FVC FVC
Ukibi	Electronic address book engines	6	NA	May 99	Mars Capital	FVC

Appendix 1c: Venture Capital Financing in 1999 in France (main investments in B2C companies)

Company	Activity	Amount raised (in FFm)	VC capital	Date	Investors	Type
Abcool	Toys, video games	20	NA	Dec 99	Galileo Partners (45%)	TVC
					Partech International (45%)	FVC
Alapage	Books, CDs, Videos	31	NA	NA	Apollo Invest (10%)	ANGELS
					Innovacom (32.25%)	CVC
Allocine	Ticket online	5	NA	NA	Galileo Partners (38.7%)	TVC
					Natexis Partners	IBVCG
ArtPrice	Art Auction database	NA	20%	Nov 99	Atlas Venture	FVC
					Europatweb	ECO
Aquarelle	Flowers	24	NA	Feb 99	SG asset management	IBVCG
					Auriga	NA
CD&Co	CD-ROM	10	NA	June 99	FCPI	TVC
					CDC Innovation (12.2%)	IBVCG
Château Online	Wine	NA	NA	Sept 99	Dassault Multimedia	CVC
					Dassault	CVC
Clust	Group Buying	15	NA	Dec 99	Developpement	
					Intel Corporation	FCVC
EatonLine	Home catering	10	NA	Dec 99	Global retail Partners	FVC
					TDF	NA
Epublik	Auction	12	23%	Sept 99	Viventures	ECO
					Galileo Partners	TVC
FranceMP3	MP3 technology	25	NA	Dec 99	Viventures	ECO
					Partech International	FVC
IBazar	Auction	85	NA	August 99	Winch Holding	FVC
					Innovacom	CVC
Kelkoo	ShopBot	20	NA	Nov 99	Galileo Partners (48%)	TVC
					FD5 (40%)	NA
KooBuy	Group Buying	10	NA	Dec 99	Business Angels (4%)	
					Goldman Sachs	IBVCG
LastMinute	Last minute purchase	5.8	NA	Sept 99	Banexi Ventures	IBVCG
					Innovacom	CVC
MarcoPoly	Hardware	2	20%	Jan 99	Seeff	NA
					Innovacom	CVC
Mixad	Auction	3	NA	Sept 99	Innovacom	CVC
					Seeff	NA
Music Box	CD	10	NA	Oct 99	Atlas venture	FVC
					Seeff	NA
Nart	Auction Art	23	NA	Nov 99	AGF private Equity (25%)	IBVCG
					Galileo (50%)	FVC
QXL	Auction	70	25%	March 99	Sofinnova (25%)	TVC
					June 99	FVC
		180			Apax Partners	FVC
					Viventures	ECO
					Groupe Arnault	ECO

Rouge et Blanc	Wine	10	NA	June 99	BNP Private Equity (29.45%) Bianca Finance (8.4%) Sthorefi (11.5%) Filtarn (5%)	IBVCG N.A. N.A. N.A.
Self Trade	Online broker	NA 260	NA NA	NA Oct 99	SEB, Salomon Oppenheim Innovafrance Avenir Finance Partners	IBVCG IBVCG TVC TVC
Rue du Commerce	Electronic, computers	30	NA	Oct 99	Apax Partners (66.7%) Galileo (33.3%)	FVC TVC

Appendix 1d: Venture Capital Financing in 1999 in France (main investments in B2B companies)

Company	Activity	Amount raised (in FFm)	% capital	Date	Investors	Type
Appel d'offres (Double Trade)	Public Offer	8	NA	August 99	CDC Innovation (87.5%)	CVC
Europagri	Agriculture	10	NA		Apollo Invest (12.5%)	Angels
Medisite	Medical site	22	NA	Oct 99	Atlas venture	FVC
Mediavet	Centralized medical files	7	NA	Oct 99	Apax Partners	FVC
Mediavita	Chronically Ill-people education	10	NA	Oct 99	Net Fund Europe	FVC
Super Secrétaire	Assistant site	1.5	NA	Oct 99	AXA Placement Innovation	IBVCG
Surgeonline	Medical site	27	NA	Oct 99	CDC Innovation (26%) Spéf (53%) Siparex (21%)	IBVCG N/A TVG
					BA	N/A
					31	FVC
					Net Fund Europe	FVC

Appendix 1e: Venture Capital Financing in 1999 in France (main investments in online companies)

Company	Activity	Amount raised (in FFm)	% of capital	Date	Investors	Type
Alafolie	Wedding portal	15	NA	August 99	Atlas Venture (80%) Business Angels (20%)	FVC Angels
Aufeminin	Online Community	25	NA	Dec 99	Galileo Partners Innovacom	TVC CVC
CanalWeb	Online TV	15	NA	Sept 98	Apollo Invest Galileo Partners	Angels TVC
Caramail	Online Community	9	NA	Sept 99	Business Angels Galileo Partners	TVC
Cybertown	Online Community	15	10%	Oct 99	ABN AMRO ventures	IBVCG
Cyperus	Information	9	NA	Dec 99	Vivienne Capital Developpement	TVC
Desfemmes	Online Community	20	27.7%	July 99	Apax Partners	FVC
FinanceNet	Financial Portal	20	NA	Nov 99	Apax Partners	FVC
Focus Imaging	Medical Portal	NA	10%	Dec 99	Net IPO	NA
I-France	Online Community	5	NA	April 99	Dassault Developpement	CVC
Immostreet	Real Estate Portal	20	NA	Oct 99	Viventures	ECCO
Kazibao	Online Community	1.5	NA		Business Angels CDC Innovation	IBVCG
Meilleurtaux	Credit offers comparison engines	10	NA	July 99	Raicher Incogest E-Partners	NA NA
Multimania	Online Community	5	33%	Dec 99	Natexis Ventech	IBVCG
Nomade	Portal	60	NA	Sept 99	Intel ED5 Sofinnova Partners PAI	FVC NA TVC NA
PromoSelect	Buying guide	6	NA	Jan 99	Sofinnova	FVC
Selectaux	Credit offers comparison engines	1	NA	August 99	P Magnard	
Webcity	Local Portal	12	NA	Dec 99	H Wiemann Galileo Partners	TVC
Winvote	Online Community	5	NA	Dec 99	Seeft Ventures Business Angels	NA
		12	NA	Jul 99	Dassault Developpement (58.3%)	CVC
		6	NA	Dec 99	Auriga (41.7%) Business Angels	NA

Appendix 1f: Venture Capital Financing in 2000 YTD in France

Company	Activity	Amount raised (in FFm)	% capital	Date	Investors	Type
Aktor Interactive	Router of classified ads over the net	5	N/A	Jan 00	Trinova	TVC
Alafolie.com	Wedding portal	40	N/A	Feb 00	PPR	CVC
Aquarelle	Flower portal	175	N/A	March 00	Europ@web	FCO
Arisem	Software of automatic management of content	20	N/A	Feb 00	Arnault & Associates	FCO
Assur Discount	Insurance portal	40	N/A	Jan 00	Paribas AI	IBVCG
Baoom	Event portal	6.4	N/A	March 00	Pechel	N/A
Business Angels.com	Private Placement	17	N/A	Jan 00	Quantum Fund	FVC
Buy central	Price engine	40	N/A	Jan 00	AGF private equity	IBVCG
Cerclo.com	Community	5	N/A	Jan 00	Carnwood	N/A
Chapitre.com	Online book retailer	40	N/A	March 00	Innovacom	CVC
Cityvox	Content aggregator for local portal	10	N/A	March 00	Galileo	FVC
Comfm	TV portal	18	N/A	March 00	Alpha	TVC
Cryo networks	Online gaming	76	17%	Feb 00	Bianca Finance	N/A
Cyberdeck	Interactive access	80	N/A	April 00	Innovacom	CVC
E-brands	Internet services integration	10	N/A	Jan 00	CDC	IBVCG
E-com	Interactive Agency	5	N/A	Jan 00	SGAM	IBVCG
Email vision	Permission Marketing	10	N/A	Feb 00	Kiwi ventures	FVC
Fresbee	Access Provider	125	N/A	Feb 00	Europ@web	FCO
Femmeonline	Search engine	N/A	39%	March 00	SGAM	IBVCG
Fenomen	Online Marketing	30	N/A	Jan 00	Mars Capital	FVC
					EPI	N/A
					Sopromec	CVC
					Fin. Rotschild	IBVCG
					Auriga	FVC
					Regional fund	
					ABN AMRO	IBVCG
					Casino (15%)	CVC
					ING Barings	IBVCG
					Ecofin	N/A
					Cita	N/A
					Solimova	FVC
					Nomura	IBVCG
					PPR	CVC
					Ventech	IBVCG
					Fin. Rotschild	IBVCG

Fortuneo	Investment bank	70	N.A.	Feb 00	Norwich Union	IBVCG
Deliceavenue.com	Gourmet food	10	N.A.	April 00	Alize Action	N.A.
IBazar	Internet holding	132	3.85%	March 00	Bibop Carriere	FVC
I mediation	e-commerce solutions	150	N.A.	Jan 00	MSDW	IBVCG
					Phillips	CVC
					<u>Europ@web</u>	ECO
					Apax	FVC
					Viventures	ECO
Kazibao	Kids-teens community	28	N.A.	Feb 00	Innovacom	CVC
					Fin. Rothschild	IBVCG
					CDC	IBVCG
					Natexis	IBVCG
					Apollo	TVC
Kerinside	Digital photo portal	4	N.A.	March 00	Galileo	Angels
					Talento, Socri, ACI, Expanso	TVCs
Kelkoo	Purchasing guide	27	N.A.	March 00	Banexi	IBVCG
Maballade.com	Hiking guide	6	N.A.	April 00	Innovacom	IBVCG
					SPEF	IBVCG
Magique Emilie	Parent community	16	N.A.	Jan 00	BNP	IBVCG
					Ventech	IBVCG
Maximile	Online fidelity program	15	N.A.	Feb 00	Banexi	IBVCG
					Innovacom	CVC
					Sofinnova	TVC
Mediapps	Software	70	N.A.	March 00	PPR	CVC
					PAI	IBVCG
					Partech	FVC
Meilleur taux	Rate comparison engine	40	N.A.	April 00	3i	FVC
					Ventech	IBVCG
					Fin Rothschild	IBVCG
Net crawling	Lemon Ad editor	20	N.A.	March 00	Galileo	TVC
					CDC	IBVCG
					Siparex	TVC
Orange art	Interactive agency	15	40%	Jan 00	Apollo	Angels
					Siparex	TVC
					Sigma	CVC
Outdoor Attitude	Outdoor community	8	N.A.	Feb 00	Auriga	TVC
Pacific Digital Telecom	Access provider	8	N.A.	April 00	SGAM	IBVCG
					Mars	TVC
					Sopromec	CVC
Perenoel.fr	Online grocery	12	N.A.	Feb 00	Fin. Rothschild	IBVCG
Planfax	Online Maps	22	N.A.	Jan 00	Angels	IBVCG
					ABN AMRO	IBVCG
Phone Valley	Wireless Portal	3.5	N.A.	March 00	Spéf	IBVCG
					Mars Capital	TVC
Procar	Intermediary between buyers and car resellers	40	N.A.	Jan 00	Viventures	SCO
					Individuals	
					3i (50%)	FVC
SDM editions	Web editor	40	N.A.	March 00	Apax (50%)	FVC
					Ventech	IBVCG
					LVMH	CVC
Selectaux	Online Mortgage	70	N.A.	March 00	ABN AMRO	IBVCG
					AXA	IBVCG
					Banques Pop.	IBVCG
					Chase Capital	IBVCG

					CDC	IBVCG
Styledefrance.com	Gift	2	N.A.	Feb 00	Bianca Finance	N.A.
Sport24	Sport portal	20	N.A.	Feb 00	Dassault Developpement Innovacom	CVC CVC
Sport4fun	Online sport gambling	25	N.A.	April 00	PAI Individuals	IBVCG
Senior planet	Senior community	30	N.A.	March 00	Galileo BNP	TVC IBVCG
Startup avenue	Incubator	15	N.A.	Jan 00	PWC Apollo Invest	CVC Angels
Super secetaire.com	Portal for assistant	4.6	N.A.	March 00	Creanet, Inconet Verneuil part	N.A.
Top achat	Electronic material retailing	24	N.A.	April 00	Siparex XK Finances Pressinage Cofirep	TVC TVC TVC IBVCG
Travel price	Online travel	115	N.A.	March 00	Apax	FVC
Woonoz	Q&A portal	10	N.A.	March 00	Capital Invest	
1001 liste	Wedding portal	5	N.A.	April 00	Butler Capital	TVC
Wine and co	Wine e-tailer	100	N.A.	Feb 00	Europ@web	ECO

Appendix 2a: Principal Requirements for Listing on High Growth European Markets

EURONM

Source: 'European New Issues Markets' (3i Venturelab INSEAD) & stock exchanges websites

Which companies are eligible?	Young and innovative companies; companies in the stage of new product development; high-growth companies; companies whose owners are looking for new partners
Prerequisites	Shareholder equity: Euro 1 million; a minimal amount offered to the public of Euro 5 million or 25% of capital; a minimum of 100,000 stocks
Professional Help	One or two firms to act as market-makers and to aid with admission procedures and preparation of admissions to listing; preparation of required disclosure documents; promotion of securities to investors. One or more firms can act as sponsors and market-makers. To ensure market-makers can operate fully, shareholders must make available to them a portion of the company's stock equal to around 10%
Documentation	Sponsor to present the application for admission. A standard prospectus is attached which includes general documentation; legal documentation and financial documentation. Also required are a business plan (not obligatory), a list of risk factors, a description of the commitment of the sponsor/market-maker over three years
Management Personnel	Managers must keep 100% of any shares they own at the time of admission for at least one year, lock-up periods for shareholders who acquired their stakes 6 months before the listing
Time of Introduction	4-6 months
Cost	Not indicated
Price Fixing	The Market-makers must be present on the central orderbook 15 minutes before the beginning of each fixing session, and in the interval between fixing session display prices on the market system, with bid and ask prices representing a minimum amount of securities equivalent to Euro 8,500, and a maximum spread of 10%. He must also declare all trades immediately
Trading Platform & Procedures	Solutions for network and software integration are still being examined

Appendix 2b: Principal Requirements for Listing on High Growth European Markets

Neuer Markt

Date of Launch	March 1997
Nationality Admitted	Company of any nationality can be listed
Which companies are eligible?	In the field of telecommunications, multimedia, genetic engineering, biotech, environmental engineering...
Advantages of IPO	High degree of transparency through constant information flow to investors; "docking station" for venture capital financing; use of international standards, reduction in transaction costs
Prerequisites	Company should have existed for a minimum of 1 year. Minimum share value of DM 10,000,000; minimum nominal total value: DM 500,000; number of shares to go public: minimum of 100,000. Equity capital shall be increased by cash deposits. At least 15% have to be closely held (25% is recommended). Foreign issuers pay half of the issues. For first issue, only ordinary shares can be floated.
Professional Help	Requirement of an adviser (Betreuer), who can be a bank or a brokerage company, admitted to trading at FWB and who will foster liquidity and ensure that regulations are met. Also serves as an issuer's coach in all stock market related matters. A <i>Betreuer</i> can sponsor several shares but is not allowed to function also as the lead broker who keeps the order book of the shares of which he is in charge.
Admission Process	The company nominates at least one adviser. It recognizes the takeover code and agrees with this code laid down by the German Stock Exchange Committee. The written applications are dealt with by the Executive Board of Deutsche Boerse AG. The admissions Board will publish company applications in at least one national newspaper. <i>Application:</i> Written submission of applications in co-operation with an adviser to the German Stock Exchange. The applications have to be accompanied by a prospectus (to be approved by the Admission Board). Application must contain the name of the company and its address; type and amount of shares to be listed. Attached to the application must be documents, such as articles of association or partnership agreements, updated excerpt from the commercial register, statutory report of incorporation of the company, if it has been entered in the commercial register less than two years before; excerpts from the protocol of the relevant legal resolutions for the issue of shares, statements on operational breakdowns, patents, disputes, cancellations of global certifications, specimen of all share certificates and coupon sheets; annual statements and reports of the company. <i>Prospectus:</i> Key item of admission process, comprises also the company report. Must also contain information about shares, issuers, issuer's capital, financial and profit & loss statements, associated companies, executive and supervisory boards, business activities and prospects as well as possible risk factors, financial figures for the last three years. Prospectus must be ready for public circulation at least one working day before admission of shares.
Management Personnel	Management with shares must hold those at least for 6 months after company enters market
Time of Introduction	Not indicated

Cost

For the admission of shares, a quarter of the admission fee (minimum DM 1,000) for the first segment is charged. For up to DM 25 million of capital, DM 375 are due for every DM 5 million of the admitted capital. For capital between DM 25 and 50 million, the amount is DM 250 for every DM 5 million. For more than DM 50 million, the amount is DM 250 for every DM 10 million. An annual fee of DM 15,000 is imposed by the Deutsche Boerse

Price Fixing

Mixed model of auction and market-maker principle. Major actor is the market-maker who fixes the share prices but who cannot act as a broker. All orders are centralized with the market-maker.

Trading Platform & Procedures

All securities are traded on the floor of the Frankfurt stock Exchange. There is a continuous quote between 10.30am and 1.30pm. Orders are executed at continuously fixed prices for a determined volume or its multiple. Advisers and quotations are subject to supervision by the Exchange Market Supervisory Board and the Frankfurt Stock Exchange Management. Floor trading is backed up by electronic trading. There is no more paper-based transmission of orders. By end 1998, all trading activities were transferred to the new computerized trading system 'Xetra' (Exchange Electronic Trading)

Appendix 2c: Principal Requirements for Listing on High Growth European Markets

Nouveau Marché

Date of Launch	February 1996
Nationality Allowed	Company of any nationality can be listed
Which companies are eligible?	Companies at the cutting edge of technology; small to medium-sized companies with high growth potential; companies whose capital is held by founding directors and partners seeking new partners
Advantages of IPO	Common marketing; wide-spread publicity, harmonized rules, unique information release, common representation of European and international authorities developing the shareholder value
Prerequisites	Minimum equity of FF 8 million; number of shares available to the public; 100,000 minimum; float: minimum of FF 10 million, company in business for under two years; listing must take place through capital increase
Professional Help	<i>Introduceurs Teneurs de Marché (ITM)</i> are service providers and investment companies. They ensure credibility and liquidity of securities and have to establish a financial yearly analysis for 3 years. Companies must be assisted by a <i>Nouveau Marché</i> member firm with the status of Listing Adviser, or Market-maker, which will ensure liquidity of securities and assist companies with providing information to market authorities and investors
Process of Admission	Companies and their listing advisors must submit an application to the <i>Société du Nouveau Marché</i> (SNM). Prospectus is submitted to the COB. Decision to grant listing is taken by the SNM provided the COB is not opposed. Introduction is granted by SNM committees: "Comité consultatif" (10 members) and "Comité des Admissions" (mandate of 3 years). If the answer is YES, prospecting for investors can begin with marketing step presentations (<i>road-shows</i>) <i>Application:</i> Company must choose an ITM and a public relations firm. Company chooses with ITM the method of introduction and submits admission request to SNM. Company & ITM submit prospectus to COB. COB & SNM decide whether to admit company. <i>Prospectus:</i> ITM and public relations company prepare prospectus. It must contain financial statements and quarterly reports, strategy and projects for the coming 3 years
Management Personnel	Must keep 80% of their shares for 3 years after the IPO
Time of Introduction	Approx 4 months
Cost	Not indicated
Price Fixing	Companies can choose to place securities prior to initial listings which may be at either a fixed price, in which case the SNM centralizes orders, or at minimum price which is proposed by the LA and the candidate. SNM then collects purchase orders and sets price in agreement with the LA and candidate
Trading Platform & Procedures	Continuous daily trading with two fixing of prices at 10.30am and 4.30pm

Appendix 2d: Principal Requirements for Listing on High Growth European Markets

AIM

Date of Launch	June 1995
Nationality admitted	No limitations
Which companies are eligible?	UK companies must be a plc, foreign company must be its equivalent Firms to be quoted constitute software, multimedia and technology firms; young businesses, management buy-outs; family businesses
Advantages of IPO	Higher profile; increased spread of shareholders; gain of international investors. Tax advantages for AIM companies as their securities are treated as "unquoted"
Prerequisites	No particular size of company required. Companies must have an adviser & broker and be legally established under the laws of their country; be a public company or the equivalent; have published accounts that conform to UK or US Generally Accepted Accounting Principles, or International Accounting Standards. Furthermore, AIM sets no limits as to the amount of shares in public hands.
Professional Help	Appointment of a Nominated Adviser (NA) who will check out appropriateness of company. Adviser must be a member of the stock Exchange, he can be stockbroker, banker, accountant or financial professional There are more than 60Nas at the LES. Furthermore, appointment of a Nominated Broker who will bring buyers and sellers of shares together. A single firm can fulfill the two roles. Apart from auditors, companies should also employ Accountants Further advisors are chartered surveyors, actuaries, registrars, insurance brokers, printers and public relations consultants.
Process of Admission	<p>Announcement of intention to join must be made over the Exchange Regulatory News Service at least 10 business days before company start trading. The admission documents must be published at least 14 days from the date of admission to trading.</p> <p><i>Documentation:</i> Admission document that contains information specified in the "Public Offers of Securities (POS) Regulations 1995" and the "Rules of the LES". A prospectus (financial information, developments, strategies, details of party who has received shares or benefits); an application form signed by the directors, a declaration by the NA, a letter from the company's NB confirming this appointment; accounts must conform to UK or US GAAP, annual and quarterly reports The documentation to be submitted to the Exchange at least five business days before admission</p> <p><i>Application:</i> Must be submitted to the Exchange at least 5 days before admission It should contain (a) descriptive information, e.g. the company's business, operations, management and prospects, (b) financial information, e.g. historical and/or projected results, cash flows, assets and liabilities of the company, (c) statutory and general information, e.g. legal details as to constitution of the company, the securities being issued, the directors .</p> <p><i>Prospectus:</i> Must include a description of the securities to be traded on AIM, a full description of the company, its principal activities and its capital, financial information about the company, its trading history and performance in recent years, details of the management, administration and supervision of the company, recent developments and prospects; details of all directors, directorships over last 5 years, bankruptcies, receiverships and liquidations under their directorship up to 12 months preceding application, shares or fees handed out up to Pounds 10,000 or more up to 12 months</p>

	prior to admission; names of shareholders who hold 3% or more of the votes; confirmation that there is sufficient working capital to meet present requirements; notice on first page of prospectus that AIM is a different market from the official list
Management Personnel	Must hold shares for at least one year. Restrictions as to dealing in company shares, e.g. must refrain from this for two months preceding the announcement of the annual results
Time of Introduction	The application and admission process takes between three and six months, depending on whether additional capital is to be raised
COST	Exact information not available, but seems to depend on individual transactions
Price Fixing	Advisers will help to choose the most suitable way of distributing shares and will provide assistance in pricing shares
Trading Platform & Procedures	Dealing on working days from 8.30am to 4.30pm. Any kind of shares can be traded, whether ordinary, preference or debt but they must be freely transferable and there must be no share or debt of the same class. More than 15 market-makers are registered to trade on AIM. Trading in AIM securities is supported by the Stock Exchange Alternative Trading Service (SEATS PLUS). It provides an order board through which orders for trading can be displayed and matched. It also allows one or more market-makers to display prices and it carries key background information about the company and its shares. Market-makers need not give firm quotes on SEATS PLUS, but must do so over the telephone during the quoting period. The Market Regulation department monitors trading patterns and ensures compliance with the Exchange's trading rules.

Appendix 2e: Principal Requirements for Listing on High Growth European Markets

EASDAQ

Date of Launch	November 1996
Nationality admitted	Any company in European Union or beyond
Which companies are eligible?	High growth companies in the biotechnology, engineering leisure, media, pharmaceuticals, software sectors ..
Advantages of IPO	Pan-European access allows diversification of funds. EASDAQ admission requirements contribute to minimalization of national differences and permit effective analysis and research. Inclusion in the EASDAQ All Share Index (EASI) permits investors to easily assess company performance
Prerequisites	Total assets of at least Euro 3.5 million. Capital and reserves of at least Euro 2 million (can take into account revenues raised in the offering). Usually EASDAQ consider application of company with a market cap of Euro 50 million or more. Market authority has to be satisfied that there is an adequate spread of investors for the shares; that an adequate percentage of shares will be publicly held
Professional Help	Appointment of a sponsor who will act as an advisor. This sponsor is or will become member of EASDAQ. At all times, company must also have a minimum of two market-makers
Process of Admission	<p>Informal presentation of company to Admission Department for preliminary examination. EASDAQ will give an answer within a week at no cost. Appointment of advisers and preparation of admission documents Official approval of a company's admission to trading is given by the Market Authority and will follow the submission of the documents and the approval of a prospectus</p> <p><i>Documentation:</i> Company must submit an Admission Agreement, a signed application form, admission application documents, prospectus; financial results in IAS format, US GAAP or home state standards with a reconciliation to IAS or US GAAP, annual and quarterly reports</p> <p><i>Application:</i> Submit documents to EASDAQ within 3 to 5 months prior to admission to trading Application should show the applicant's articles of association, his registration with the companies/ trade register, his financial statements of the three preceding years. It should also contain a written undertaking of Board of Directors to comply with EASDAQ Legal Framework It should further show that potential members of the offering syndicate have been identified and met, that the structure of the offering has been determined, that a corporate framework has been established</p> <p><i>Prospectus:</i> The prospectus must include its date of issue, a summary of the issuer, the offering and financial statements It should describe characteristics of the firm's operations or industry, any material risk factors and a statement informing investors that price-sensitive information shall be divulged to investors throughout Europe Information concerning the company should include general company information, description of business, selected financial data, names of members of administration, management and supervisory bodies</p>
Management Personnel	20% of the company's capital must be publicly held EASDAQ recommends a minimum number of 100 shareholders. Lock-up period is generally 6 months
Time of Introduction	Approx 3-5 months

Cost

Euro 5,000 for the processing of the application which will be deducted from the admission fee. A listing on both NASDAQ and EASDAQ will cost an additional US\$ 20,000

Trading Platform & Procedures

EASDAQ is a screen based, quote-driven, electronic market which uses a multiple market-maker system. Its trading platform allows seamless trading across the European Union

Appendix 2f: Principal Requirements for Listing on High Growth Markets

NASDAQ

Date of Launch	February 1971
Nationality admitted	No limitations
Which companies are eligible?	Companies from the manufacturing, finance, and the technology sectors (companies like Microsoft, Ericsson, Volvo...among the biggest companies in their field). Furthermore, fast-growing companies from the biotechnology sector
Advantages of IPO	Second largest stock market in the world; global focus; top equity performance. Trading is effected through a large computer network that reaches 52 countries
Prerequisites	Net tangible assets: US\$ 6 million; pre-tax income (in latest fiscal year or 2 of last 3 fiscal years): US\$ 1 million; public float (shares): 1.1 million; market value of public float: US\$ 8 million; minimum bid price: US\$ 5; shareholders: 400
Professional Help	Company requires three market-makers
Price Fixing	Market-makers quote "firm" bid and ask prices
Trading Platform & Procedures	The NASDAQ network has done away with the traditional single stock market floor and allows for free market competition, giving investors access to the best prices

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Glossary

<i>ANVAR</i>	Agence Nationale pour la valorisation de la recherche. http://www.anvar.fr
<i>Business angels</i>	Private individuals who invest directly in new and growing unquoted businesses. Business angels usually provide finance in return for an equity stake in the business, but may also provide other long-term finance. This capital can complement the venture capital industry by providing smaller amounts of finance at an earlier stage than most venture capital firms are able to invest.
<i>Capital Market</i>	A market in which long term capital is raised by industry and commerce, the government and local authorities. Stock exchanges are part of the capital market.
<i>Corporate Governance</i>	The manner in which organizations, particularly limited companies, are managed and the nature of accountability of the managers to the owners. This topic has been of increased importance since the beginning of the 1990's, the providers of external finance to a company wanting to ensure management is not acting contrary to their interests.
<i>Corporate venturing</i>	Provision of venture capital by a company for another company.
<i>Development capital</i>	Financing provided for the growth and expansion of a company
<i>Early stage capital</i>	Financing to companies before they initiate commercial manufacturing and sales, before they be generating a profit. Includes seed and start-up financing.
<i>Equity</i>	The ordinary share capital of a company
<i>EVCA</i>	The European Venture Capital Association This association gathers the main venture capitalists in Europe. http:// www.evca.com
<i>Fonds d'amorçage</i>	Funds that invest in early stage start-ups

<i>Institutional investors</i>	This term refers mainly to insurance companies, pension funds and investment companies collecting savings and supplying funds to the markets, but also to other types of institutional wealth (e.g. endowment funds, foundations...)
<i>IPO</i>	Initial Public Offering: the process of launching a public company for the first time by inviting the public to subscribe in its shares
<i>Investment Services Directive</i>	It provides a European “passport” for investment funds (brokers, dealers...) and gives the right to electronic exchanges to place their terminals in other Member States
<i>Management buy-out</i>	Financing provided to enable current operating management and investors to acquire an existing product line or business
<i>Market capitalization</i>	The price of a stock multiplied by the total number of shares outstanding. The market’s total valuation of a public company. By extension, the total valuation of companies listed on a stock market
<i>Private equity</i>	As opposed to public equity: investment in equity stake by private investors companies not listed on a stock market
<i>Prospectus</i>	A formal written offer to sell securities that sets forth the plan for a proposed business enterprise, or the facts concerning an existing one that an investor needs to make an informed decision
<i>Prudent man regulation</i>	Obligation of pension managers to invest as a prudent investor would do on his own behalf, in particular by carrying out sensible portfolio diversification, with no limits to portfolio distribution other than on self investment for pension funds financing defined benefit plans. NL, UK, Ireland, Canada, Australia and the US have such regulation
<i>Risk capital markets</i>	Markets providing equity financing to a company during its early growth stages (start-up and development). In the framework of this thesis, it covers two sorts of financing: Informal investment by business angels and venture capital

<i>Secondary market</i>	Market where securities are bought and sold subsequent to original issuance. The existence of a flourishing, liquid, secondary market creates the conditions for a healthy primary market
<i>Security</i>	A financial asset, including shares, government stocks, debentures, bonds, unit trusts and right to money lent or deposited
<i>Seed capital</i>	Financing provided to research, assess and develop an initial concept
<i>Start-up capital</i>	Provided to companies for product development and initial marketing
<i>Stock Exchange</i>	A market in which securities are bought and sold. Its basic function is to enable public companies, governments and local authorities to raise capital by selling securities to investors
<i>Stock option</i>	Option given to employees and/or managers to buy shares at a fixed price
<i>Venture capital</i>	Investment in unquoted companies by venture capital firms who, acting as principals, manage individual, institutional or in-house money. Four main financing stages are identified in relation to the stages of development of a venture-backed company: early stage, expansion, replacement and buy-out. In the US, the word "venture capital" does not include most of the buy-out deals
<i>Venture capital funds</i>	Closed-end funds, created to provide venture capital

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