SCHOOL OF LAW

The Experiment in Time of Crisis: Government as Venture Capitalist

Master's Thesis

LLM International Business Law 2011/2012

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Tilburg, June 2012

INTRODUCTION

The link between innovation, growth and venture capital

By the middle of the 20th century, economists started to realize that innovation is crucial to economic growth. The results of much research showed that theory for centuries has been making an important mistake- economic growth was treated as if adding more inputs (more labor force, capital and resources); this would result inevitably to more output. The problem was that resources and money are definite and exhaustible and work force can not be misused because of moral, legal and political reasons. The solution was simple: developing new ways to get more output from the same inputs is the main way to spur economic growth. Meanwhile the classic Schumpeter's hypothesis[1] of large firms superiority in the field of research and development begun to be disproved with both empirical and theoretical observations. In numerous dynamic industries[2] leadership in research and development is in the hands of young firms. These innovative start-ups can only grow if they have proper access to funds, particularly venture capital financing. However, Schumpeter's theory is applicable as more established industries are concerned as agriculture, electricity-producing, machine-manufacturing and mining for example, where the economy of scale and scope is crucial. Having in mind the aforementioned, a logical presumption can be made that promoting innovative start-up firms in high-tech industries can boost economic growth by saving resources, time, labor force and money, stimulating employment and producing more added values for the society (measured by GDP) as a final outcome. For these companies the expertise of venture capitalist, his knowledge of markets and of the entrepreneurial process, his network of business contacts, are even more useful in unfolding their growth potential[3] then actual money provided. By contrast, when venture capital is applied to companies at a later stage of their growth or ones that operate in technology mature industries, it has less of an opportunity to "contribute" to

1 Schumpeter, J.A. 1942. 1942. Capitalism, Socialism and Democracy. New York: Harper and Brothers. 5th ed. London: George Allen and Unwin, 1976

2Such as: biotechnology, business products, computer peripherals, electronics, financial services, pharmaceutical and healthcare services, IT services, media, medical devices, networking, renewal energy, semiconductors, software, telecommunications

3 See Bottazzi, Laura, Marco Da Rin, Hellmann, Thomas, (2004), "Active Financial Intermediation: Evidence on the Role of Organizational Specialization and Human Capital", RICAFE WP, n.12; Gompers, Paul (1995), "Optimal Investment, Monitoring, and the Staging of Venture Capital", Journal of Finance, 50; Hellmann, Thomas, Puri, Manju, (2002), "Venture Capital and the Professionalization of Start-up Firms: Empirical Evidence", Stanford University, Graduate School of Business research series, No 1661; Lerner, Josh, (1995), "Venture Capitalists and the Oversight of Private Firms", Journal of Finance, 50, (1);

the value of the company[4]. Hellmann and Puri[5] show that "innovator firms" are much more likely to obtain venture capital funding than "imitator firms" and that the innovative start-ups are able to bring products to the market much faster than other companies.

As financing theory suggests[6] venture capital is a form of intermediation particularly well suited to support the creation and growth of entrepreneurial companies. It is a specific form of industrial finance that specializes in "nurturing" companies at the early stage of their life cycle ("start-ups") that operate in high-tech industries. Until very recently venture capital was completely a US phenomenon, but the need for achieving continued economic growth and job creation by supporting early stage innovative ventures is becoming widely recognized by states' policies. As economies become dependants on innovations and entrepreneurship for achieving substantial growth[7], governments around the world have been trying to replicate the US venture capital model and develop venture capital markets[8]. In the light of the current economic crisis the creation of self-sustainable venture capital market becomes even harder task as investors are becoming more risk averse to commit their scarce funds in venture capital as highly risky asset class. Governments are trying to fill the "equity gap" in the earliest and most risky stages of firms' life by engineering different fund structures and providing incentives for the private sector to participate. This work tries to answer two main questions: *In what way governments' involvement in venture capital industry must be structured in order failures to be avoided* and *whether a public-private fund scheme could create a functioning venture capital market in Eastern European country like Bulgaria.* All assumptions are made under the light of current economic crisis.

Author's approach on the matter is deductive- trying to establish theoretically true premises in order to reach a practical conclusion that is also true at the end. Chapter 1 begins with general introduction of venture capital industry and venture capital cycle. As theoretical example will be used the USA model as it is the seminal one and all policy-makers are trying to duplicate it in their own countries. Chapter 2 focuses on European venture capital and its determinants. Chapter 3 briefly theoretically introduces the ways of active government's involvement in the VC industry.

4 Michelacci, Claudio, Suarez, Javier, (2004), "Business Creation and the Stock Market", Review of Economic Studies, 71, (2)

5 Hellmann, Thomas and Puri, M., (2000), "The Interaction Between Product market and Financing Strategy: The Role of Venture Capital", Review of Financial Studies 13

6 Hellmann, Thomas, and Manju, Puri (2000), see supra note 5; Hellmann, Thomas, and Manju, Puri, (2002), see supra note 3; Kortum, Samuel, and Lerner, Josh, (2000), "Assessing the Contribution of Venture Capital to Innovation", Rand Journal, 31, (4); Timmons, J.A., Bygrave, W. D., (1986), "Venture Capital's Role in Financing Innovation for Economic Growth", Journal of Business Venturing, 1

7Bottazzi, Laura, Marco Da Rin, Giavazzi, Francesco, (2003), "Research, Patents, and the Financing of Ideas: Why is the EU Growth Potential so Low?", André Sapir and Mario Nava (eds) Economic Policy-Making, the European Union, Brussels, European Commission; European Commission (2003), Communication on the Implementation of the Risk Capital Action Plan, COMM (2003), 654

8 Megginson, William, (2001), "Towards a Global Model of Venture Capital?" research paper, the University of Oklahoma.

Chapter 4 applies the theoretical contemplations into practice by examining the High-Tech Gründerfonds in Germany, various hybrid funds schemes in Ireland and the INCJ in Japan. Chapter 5 introduces Bulgarian economic and legal environment for VC and provides advice of financial engineering. Chapter 6 concludes the paper.

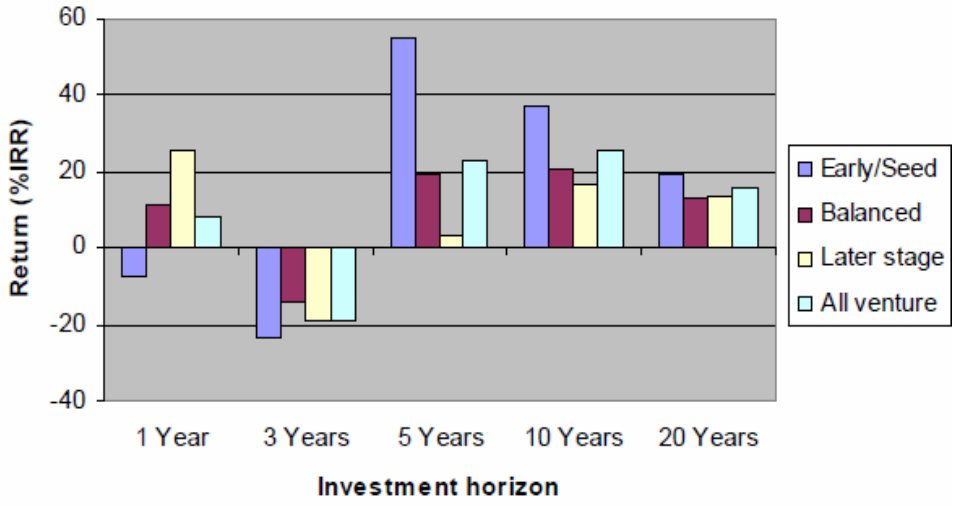
1. THE US VENTURE CAPITAL MODEL

1.1. Depth insight of US venture capital industry

By its nature venture capital is a historically developed answer to the entrepreneurs' demand of initial capital in order their innovative ideas to be implemented. In the beginning of its life cycle the firm is facing the so-called "valley of death". Company's Founders (the entrepreneurs) possess the innovation and know-how and contribute some money to the start up, but lack sufficient capital to put the idea into practice and bring it to the market. At this stage, bank financing (and other sources of debt financing) is unlikely due to the lack of tangible assets and negative earnings projections (usually in a period of 3-5 years). Market conditions play a key role in determining the difficulty of financing innovative firms. Both capital and product markets may be subject to substantial variations. The supply of capital from public investors and the price at which this capital is available may vary dramatically. These rapid changes may be the response to shifts in investors' perceptions of future profitability or regulatory intervention. Similarly, the nature of the product markets may vary dramatically due to shifts in the intensity of competition with rivals or in the nature of the customers. Despite these threats, there is something that attracts investors in young innovative companies- the possibility of a high reward in case of success. However, in order to be assured that they will not loose their money investors need a form of financial intermediation that will reduce their exposure to the high levels of risk. That can happen in several ways: first of all the venture capitalist is the expert that does the screening procedure and picks only the firms in the industry those are prone to success. Secondly, he closely monitors the management of the company and provides expertise. Thirdly, by investing in a portfolio of companies, the venture capitalist diversifies risk for investors. It is estimated that only one-third of the start-ups in a portfolio become successful, but still that assures the return of the initial investments with profit. Theory proves that venture capitalist acting as financial intermediaries reduce agency costs

between investors and the start-ups.[9] Venture capitalists as professionals undertake a variety of roles. The first is establishing relationships with investors: predominantly institutional investors, but also wealthy individuals that are willing to invest their money surpluses in high risk investments. Venture capital firms typically raise capital through periodically-established venture capital funds, not on a continual basis. These funds formed as limited partnerships (the global standard is limited liability for the limited partners and unlimited liability for the general partner; usually general partner is a venture capital firm structured as corporation) typically have a ten-year life with often possible extensions of several years (two or three). At the end the funds are returned to the investors with some profit and a new fund is raised (*see figure 1:1).* The venture capital firm will raise a new round of funding every two or five years.

Figure 1:1: US venture capital investment Pooled average IRR% for investment horizons of 1, 3, 5, 10 and 20 years as of 31.12.2003; source: European Commission 2006, Profitability of venture capital investment in Europe and in the United States, Economic papers, No 245, available at: http://ec.europa.eu/economy_finance/publications/publication792_en.pdf



Venture capitalists role of reviewing of proposed investments is important as they are intermediaries that have the expertise to choose the best business ideas in industries that are characterized by high level of uncertainty. Although most proposals from entrepreneurs are discarded at first sight, serious candidates are extensively scrutinized through formal studies of the technology and market strategy and informal assessment.

In consideration of their money, venture capitalists acquire equity stakes in the start-up which not only serves as a promise of future earnings, but offers control[10] over the entity. And here comes the

9Hellmann, Thomas, "Specializing Financial Intermediation, Evidence from Venture capital", Mimeo, Universita Bocconi

10 Author's note: It depends how someone defines control. In the case of the instructive US venture capital model venture capitalists may be satisfied with preferred shares and board seats, while being protected at the same time by protective covenants attached to their preferred shares.

third role of the venture capitalist: as "principal" of the portfolio company and the entrepreneur being the "agent". Theory is unanimous that venture capital financing establishes unique type of "principal-agent" relationship with the inherent agency problems that arise[11]. What is more, Holmstrom and Tirole[12] seminal "double moral hazard" model of financial intermediation shows that both the entrepreneur and VC manager exert effort. The reason for the agency problem is the huge and various information gaps that venture capitalist must overcome. Because of the day-to-day involvement with the firm, entrepreneur knows more about the company's prospects than investors and strategic partners. Moral hazard as a problem develops in settings where asymmetric information is prevalent. For instance, entrepreneur may take detrimental actions that venture capitalist cannot observe: perhaps undertaking a riskier strategy than initially suggested or not working as hard as investor expects. The entrepreneur can also invest in a project that builds up a reputation at the investor's expense[13]. In their study Jensen and Meckling[14] prove that "agency problems" between venture capitalist and entrepreneur affect the willingness of equity holders to provide capital. If the firm raises capital from outside investors, the entrepreneur has an incentive to engage in wasteful expenditure, because he has the opportunity to benefit from these without bearing the entire cost. Consequently, the outside providers of capital, being aware of this kind of moral hazard, demand higher internal rate of return for their commitments. Asymmetric information can lead to adverse selection problem that also result into external capital being more expensive or even into its entire preclusion. Economic theory[15] defines this phenomenon as "lemons problem"[16]. If the manager is better informed about the investment opportunities of the firm and acts in the interest of the current shareholders, then he only issues new shares when the

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This latter situation is arguably better then the situation in Europe where "control" is attained through common stock, as it allows US entrepreneurs not to lose control of their ventures.

11 Kaplan, S. and Stromberg, P., (2001), "Venture capitalists as principals: Contracting, Screening and Monitoring", American economic Review Papers and Proceedings, 91

12 Holmstrom, Bengt, Tirole, Jean, (1997) "Financial Intermediation, Loanable Funds, and the Real Sector", Quarterly Journal of Economics, 112 (3)

13 Author's note: For example a pharmaceutical start-up can focus its research on a project that will bring recognition amongst scientific world and abandon highly profitable project, but with less added value to the society.

14 Jensen, M. and Meckling, W., "Theory of the firm: managerial behaviour, agency costs, and ownership structure", 1976, Journal of Financial Economics, 3

15 Myers, Stewart, and Majluf, Nicolas., (1984), "Corporate financing and investment decisions when firms have information that investors do not have", Journal of Financial Economics 13

16 The lemons problem theory was described by George Akerlof in a 1970 paper titled "The Market for Lemons: Quality Uncertainty and the Market Mechanism". Akerlof explained how asymmetric information provides incentives for sellers of low-quality goods to present their products as high-quality goods, thus reducing overall product quality and consumer satisfaction. The "market mechanism" Akerlof refers to - where the bad drives out the good when only the average quality of goods in a market are considered - results in a no-trade equilibrium. Akerlof postulated that, in some cases, certain markets may fail entirely because of this market mechanism in which there is a high degree of uncertainty and information asymmetries about product.

company's stock is over-valuated. According to efficient market theory stock prices decline when equity issues are announced, because of the negative signal sent to the market. Hence, it might be difficult for venture capitalist to distinguish between competent and incompetent entrepreneur. Many of the traditional models of ownership[17] and financial choice[18] depend on the inability of investors to verify that certain actions have been taken by the start-up company or certain outcomes have occurred. What is more, whiles the entrepreneur's actions and their results might be observable, they are assumed not to be verifiable: investors could not convince a court in case of suit of the action or outcome undertaken by the young company.

The "principal- agent" tension that arises between the venture capitalist and entrepreneur is just the first set of agency problems that arise in venture financing, the second one being the one between the venture capitalist (acting in his role as fund's manager and general partner that is in charge of raising money for the fund) and the institutional investors, willing to contribute their investments to the VC pool (being the limited partners in the limited partnership and assuming the role of the principal). The distinction here is that this "principal- agent" pair is standard, one-way relationship where principal has delegated all the operational decisions to the agent[19].

Other problem is that venture investors concentrate in industries with a great deal of uncertainty, for which is hard to make financial projections at the beginning. Uncertainty is a measure of the array of potential outcomes for a company or a project. The wider the dispersion of potential outcomes, the greater is the uncertainty. On one hand, start-ups ability to change dynamically is a key competitive advantage that also promotes innovation and substantial growth, but on the other hand it brings high level of risk- a disadvantage for strategic partners and investors in the young company. For example, uncertainty surrounds whether firm's new product will succeed and also the response of the market after the product is launched may be also unknown. Higher uncertainty means that investors cannot predict on the balance of probabilities how the company will look in the future. Information asymmetries and uncertainty are interconnected- higher levels of uncertainty increase information gaps between parties and can lead to divergence in their interests. Uncertainty affects also the timing of investments- the higher is the risk that uncertainty brings, the

17 Grossman, Sanford., Hart, Oliver, (1986), "The costs and benefits of ownership: A theory of vertical and lateral integration", Journal of Political Economy, 94; Hart, Oliver, Moore, John, (1990), "Property rights and the nature of the firm", Journal of Political Economy, 98

18 Stiglitz, Joseph E., Weiss, Andrew, (1981), "Credit rationing in markets with incomplete information", American Economic Review 71

19 Author's note: compare with the "double moral hazard", see supra note 12

shorter the duration of individual round of financing, the more frequently the venture capitalist monitors entrepreneur's progress and the greater the need to gather information[20].

In a nutshell, the nature of information asymmetries and uncertainty at each stage of the venture capital cycle makes external financing costly or difficult to obtain at all. At this point appears the importance of the screening role of the venture capitalist to sort out unacceptable projects and unreliable entrepreneurs in order investors to devote their money in efficient, appropriate and lucrative manner. In response of difficult environment in order to significantly alleviate information gaps; decrease the risk level for investors and reduce capital constrains for the start up, venture capitalist will employ a number of tools to mitigate agency conflicts among entrepreneurial firms and outside investors. These include: the active monitoring and advice that is provided, the screening mechanisms employed[21], the incentives to exit[22], the syndication of the investment[23] and its staging[24]. In fact these are the non-monetary aspects of venture capital financing which appear to be critical for the proper functioning of the venture capital process and cycle.

One very important consequence of the uncertainty and information gaps is that venture capital industry slowly adjusts to shifts in the supply and demand for financing. In VC markets regulatory and policy shifts generate disruptions that take years to resolve or long-run adjustments in supply and demand curves can be very slow to respond to short-run shocks. This slow adjustment is consequence of the illiquid and long-run nature of the investments that need to be secured by venture capital fund for a decade or more. The supply of venture capital, consequently, can not adjust quickly to changes in investment environment, as the case might be with mutual or hedge funds. Generally, even identifying the demand side- which sectors or groups are likely to be receiving too much or too little investment is often impossible. The supply of venture capital is also difficult to adjust in short term. Consequently, during periods when the supply and demand for venture capital have shifted and are mismatched (as in times of economic crisis), adjustments in the number of venture capitalists and the venture capital organizations appear to take place very slowly.

20 Gompers, Paul, (1995), see supra note: 3

21 Chan, Yuk-Shee, (1983), "On the positive role of financial intermediation in allocation of venture capital in a market with imperfect information", Journal of Finance, 38

22 Berglof, Eric, (1994), "A control theory of venture capital finance", Journal of Law, Economics and Organization, 10

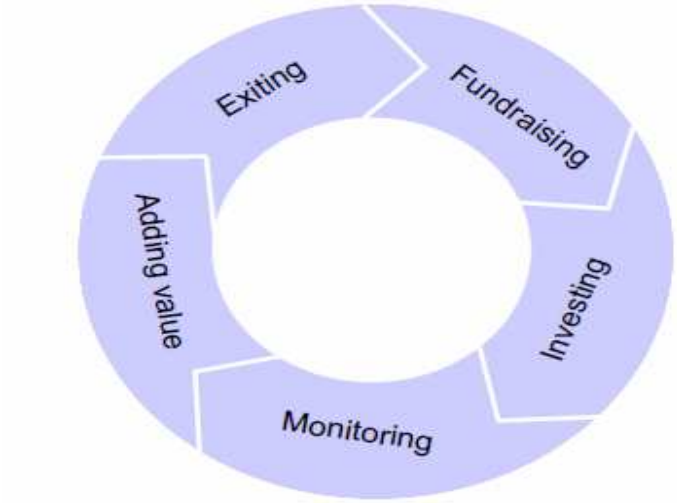
23 Admati, Anat, Pfleiderer, Paul, (1994), "Robust Financial contracting and the role of venture capitalists", Journal of Finance, 49

24 Bergemann, Dirk, Hege, Ulrich, (1998), "Dynamic venture capital financing, learning, and moral hazard", Journal of Banking and Finance, 22

1.2. The venture capital cycle

The process of financing innovative start ups can be described as cycle that has three stages (*see Figure 1.2*): venture capital industry starts with venture capital fundraising, proceeds through the investment in, monitoring of and adding value to firms; continues as the venture capital firm exits through successful IPO or deal and returns capital to its investors; and renews itself with the venture capitalist rising additional funds. Each aspect of the venture capital cycle is related to each other. One inevitable consequence is that proper exiting of the venture capital investments (closing of the cycle) has crucial influence on the rising and investing (initial stages of the cycle).

Figure 1:2: The venture capital cycle, according to Gompers, Paul, Lerner, Josh (2006): "The Venture Capital Cycle", 2nd edition, Cambridge, MIT Press



1.2.1 Fundraising

Theory contemplates manly on the issue what determines the amounts and willingness of investors to pool their money and create a venture capital fund. Poterba[25] examines the impact of variations in the capital gains tax rate on this variable. He finds that the majority of venture capital funds are from tax-exempt investors, who are not directly affected by a higher or lower capital gains tax rate. In regression analysis, Gompers and Lerner[26] also find that lower capital gains taxes seem to have a particularly strong effect on the amount of venture capital supplied by the tax-exempt investors.

Other important factor that determines fundraising is the regulatory change. For example, Department of Labor's Employee Retirement Income Security Act (ERISA) policies which eased

25 Poterba, J., M., (1989), "Venture capital and capital gains taxation", In Tax Policy and the Economy, edited by Lawrence Summers, Cambridge, MIT Press

26 Gompers, Paul, Lerner, Josh, (1998), "What drives venture fundraising", Brookings Papers on Economic Activity, Microeconomics

investment restrictions in venture capital in 1979. The rule that pension funds are able to invest in high-risk assets encouraged pension funds' capital resources to spur into US venture capital industry. In contrast, in Europe pension funds' commitment to the VC industry is insignificant. This is due to regulatory restrictions on the investment strategies of European pension funds. In the USA, eight years after the regulatory change pension funds accounted for more than half of all contributions to venture capital industry. Other legislative measure which seem is having significant impact on venture capital cycle recently occurred in Europe[27]. This is the Basel III Directive that imposes restrictions on European banks to invest in highly-risky assets[28] and The Alternative Investment Fund Managers Directive (AIFMD)[29]. It is still early to estimate what will be the overall impact on the VC in Europe, but according to EVCA projections it will be significant.

Black and Gilson prove that[30] the health of venture capital market depends fundamentally on a vibrant stock market that allows new firms to issue shares for a wide range of investors. For instance, the growth of the venture capital industry in the beginning of 1980s, the decline in the late 80s and the unprecedented growth in venture capital fundraising in the 1990s were matched by a rise then a fall, and then a raise again in IPO market activity.

Contractually specified compensation is important in the venture capital setting. It aligns the interests of investors (being the limited liability partners in VC fund) and the venture capitalist (being the manager who is the general partner with unlimited liability).[31] This is the first set of "principle-agent" relationship in venture capital financing, the second one being the one between venture capitalist and the entrepreneur. Compensation is mechanism for disciplining managers adopted by limited partners, because they do not have the possibility to rely on other means of preventing agency costs adopted typically by corporations' shareholders. Contrary to the Gompers

27 Author's note: for more policy measures see: subchapter 2.2 "Public policy for Venture capital in Europe"

28 See: Directive 2010/76/EU; the author will deal with the issue in more depth in Chapter II

29 See: The Directive entered into force at EU level on 21 July 2011 and Member States have 24 months from this date to transpose the Directive into national law. Meanwhile, many implementing measures must be drafted by the European Commission and the new European Securities and Markets Authority (ESMA). To this end ESMA has published a draft advice to which responses will be accepted until 13 September 2011. The end of the transposition period on 21 July 2013 will bring with it the introduction of the EU-wide marketing passport for EU AIFMs managing EU AIFs; Source: EVCA

30 Black, B., Gilson, R., (1998), "Venture capital and the Structure of Capital Markets: Banks versus Stock Markets", Journal of Financial Economics, 47

31 Author's note: Of course, in the limited liability partnership structure general partner is incorporated as a limited liability company (LLC) in order to limit his liability, see: Joseph A. McCahery and Erik P.M. Vermeulen, "Corporate governance of non-listed companies", Oxford University press, Chapter 6

and Lerner[32] theory that compensation for older and larger venture capital funds is more sensitive to performance and variable than the compensation of their less established counterparts, in her recent paper Litvak proves that VC compensation is substantially less performance-based than commonly believed. She finds that compensation is far more opaque and complex and has one more important element except management fee and the carried interest- *the value of the interest-free loan that VCs receive from limited partners*. What is more, common proxies for VC quality (past performance and capital under management) can positively predict more transparent elements of VC compensation (management fee and carry), but do not predict the levels of opaque compensation (interest-free loan as specified in the distribution rules). Fund size (a strong predictor of VCs' take-home pay) is strongly and positively predicted by the VC's long-term past performance and prior fund sizes; however, changes in recent performance do not predict changes in the sizes of new funds[33].

Other strong mechanism that aligns interests between investors and venture capitalists and avoids conflicts is the contractual flexibility and more precisely the covenants and restrictions in the limited partnership agreement[34]. Proper contracting is really important in order opportunistic behaviour of the "agent" (general partner in LP) to be mitigated. In their survey Gompers and Lerner[35] illustrate the importance of general market conditions on the restrictiveness of the provisions in the partnership agreements. The supply and demand hypothesis suggests that when the demand of venture capital services is high (relative to a fix amount of venture capital providers) the number of restrictions should decline. Reduction in the number of restriction leads to increase in general partner's private benefits of managing the fund, because it offers him possibility for enrichment at investors' expense. If the venture capitalist is prone to opportunistic behaviour, limited partners want to tie his monetary compensation more closely to fund prospects. Increasing the sensitivity of the venture capitalist's compensation to performance should reduce the incentives to make investments that do not maximize limited partnership's returns.

32 Gompers, Paul, Lerner, Josh, (1999), "An Analysis of Compensation in the US Venture Capital Partnership", Journal of Financial Economics, 51

33 Litvak, Kate, (2004), "Venture Capital Limited Partnership Agreements: Understanding Compensation arrangements", University of Texas Law and Economics Research Paper No 29 and Columbia Law and Economics Working paper No 254

34 Author's note: For more information about practical side of the LP agreement see: Michael J. Halloran, Vignos, Gregg, Wainwright, C. Brian, "Agreement of limited partnership", Chapter 1

35 Gompers, Paul, Lerner, Josh, (1996), "The Use of Covenants: An Analysis of Venture Partnership Agreements", Journal of Law and Economics, 39

Another important implication in Gompers and Lerner work is that the costly contracting hypothesis is applicable to VC partnerships[36]. Contracting parties should balance the benefits of restricting activities with the cost of negotiating the provisions and monitoring compliance. Firm specific factors increase the benefits of restrictions or decrease monitoring costs lead to a greater number of restrictions. Monitoring costs are closely related to funds side and its reputation. More seasoned venture capital funds are considered to be fair, reasonable and experienced players. Reputational concerns make opportunistic behaviour less attractive and reduce the need of covenants, the cost of contracting also decreases. Law and economics theory on "signaling" can be also used in this context. Younger funds can offer investors more protection through waterfall provisions and hurdle rates attached to the distribution of profits (connected with the carried interest) as a signal that they do intend to be responsible and that they do guarantee returns when managing the investors' funds[37].

1.2.2 Investing

Making investments at the earliest stages of a company's development- often before a product or service is more than just an idea- involves significant entrepreneurial risk, which severely limits capital sources for such companies. Yet, venture capitalists assume this risk alongside the company founders by providing capital in exchange for an equity stake in the company.

During this investment stage, venture capitalists provide more than just money to the company. Typically, venture capitalists take seats on the boards of directors and participate actively in company operations and management personnel. This commitment often includes providing strategic counsel regarding development and production, making connections to aid sales and marketing efforts, and assisting in hiring key management. As part of this process, the venture capitalist also guides the company through multiple rounds of financing. At each point, the company must meet certain milestones to receive fresh funds for continued growth. Gompers[38] uses a random sample of 749 venture backed-up start-ups to examine how venture capitalist uses staged infusions of capital and other types of monitoring. Due to the early stage of companies life and the nature of the industries (highly innovative), uncertainty and information asymmetries are significant and hence, monitoring is more valuable. If the company fails to meet the milestones set

36 Author's note: for instance, Smith and Warner prove that the complexity of debt contracts reflects the cost of contracting; Malitz paper shows that specific classes of bond covenants are more common to issuers with characteristics that may proxy for a grater need of monitoring; see: Smith, Clifford, Warner, Jerold, B., (1979), "On financial contracting: An analysis of bond covenants", Journal of Financing Economics 7 and Malitz, Ileen, (1986), "On financial contracting: An analysis of bond covenants", Financial Management 15.

37 Gompers, Paul, and Josh Lerner, (1999), see supra note 32

38 Gompers, Paul, (1995), see supra note: 3

and add value to its product, the venture capitalists' responsibility to their investors may require them to walk away. Firms that go public (these firms bring the highest rate of return for the venture capitalists on average) receive more total financing and a greater number of rounds than other firms that are cut off from new financing, remain private, are acquired or go through liquidation or bankruptcy. It is typical that early stage firms receive significantly less money per round, as they become more mature (the asset tangibility increases) duration between rounds of financing increases and monitoring intensity is reduced. The advice and support provided by venture capitalists (the so-called non-monetary contributions) is often embodied by their role on the firm's board of directors. Keeping the approach of Fama and Jensen[39] and Williamson[40] (who hypothesize that the composition of the board should interplay with the need of oversight), in his survey Lerner[41] proves that the representation of venture capitalists in boards of the private firms is greater when the need for monitoring is larger. Sorensen's survey estimates that venture capitalists with longer experience (proxied by the number of previous financing rounds) tend to be better at coaching portfolio companies[42].

1.2.3Exiting (Divesting)

Exiting is the most important stage of the venture capital cycle and the previous stages are made in order to prepare it properly. As venture capital funds invest in large illiquid equity stakes of startup companies, they need a divestment of a portfolio company in order to liquidate their position and realise a gain from their investment. Since 1970 theory has tried to measure the performance of venture capital companies at the time of the exit. The, first researcher to calculate the rate of return on venture capital in a more reliable way was William Bygrave[43], who, together with some collaborators at Venture Economics, in the mid 1980s put together a database including the rate of returns for 131 venture capital funds in the US. The analysis was disappointing compared to the myths (often as high as 35% on annual basis): in general the rights of return were about 15%. Typically, the most profitable exit opportunity is an IPO. *Figure 1:3* summarizes recent trends in initial public offerings: twenty companies held initial public offerings during the first quarter of 2012 making it the most active quarter for IPOs since the fourth quarter of 2007 and the most active first quarter since 2000. Twenty companies raised $1.4 billion through public offerings in the first quarter,

39 Fama, E. F., Jensen, M. C., (1983), "Separation of Ownership and Control", Journal of Law and Economics, 26

40 Williamson, O. E., (1983), "Organization Form, Residual Claimants and Corporate Control", Journal of Law and Economics, 26

41 Lerner, J., (1995), see supra note: 3

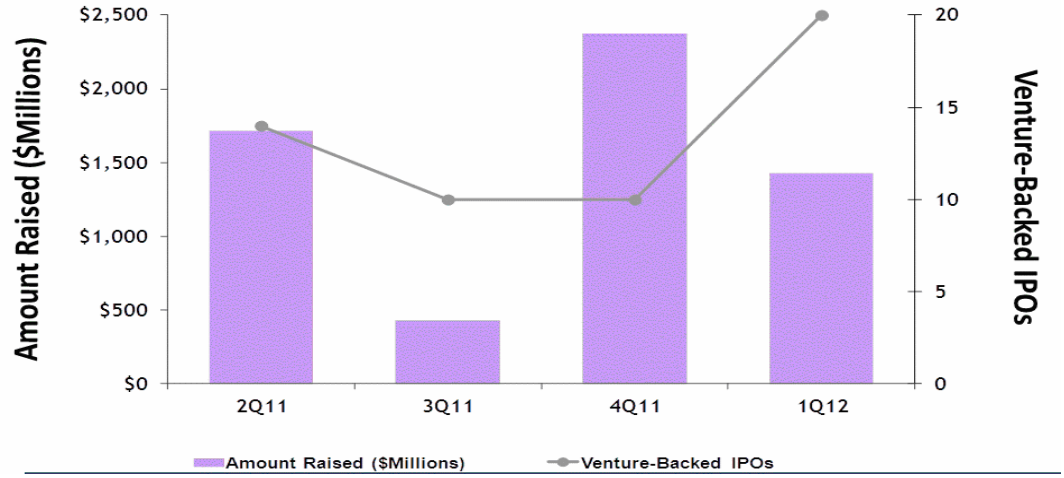
42 Sorensen, M., (2007), "How smart is smart money? An empirical two-sided matching model of venture capital", Journal of Finance, 62, (6), pp. 2725-2762

43 Bygrave, William D. et al., (1989), "Early rates of returns of 131 venture capital funs started 1978-1984", Journal of Business Venturing, 4, (2)

significantly more exits and capital than the 11 IPOs that raised $768 million during the first quarter of last year. It can be concluded that there is revival of divesting from young firms by means of initial public offering, a sign which is positive in the aftermath of the financial crisis. However, the share of capital raised by IPO, that are backed by venture capital, dropped with 22% compared to the same period a year ago.

Initial empirical research in this area focused on the structure of venture-backed initial public offerings. Barry, Muscarella, Peavy and Vetsuypens[44] documented that venture capitalist hold significant equity stakes in the firms they take public and control about one-third of the board seats. They continue to hold their equity positions in the year following the IPO.

Figure 1:3, IPO's Heat up? Dollar volume and Number Venture-Backed IPO's in the United States; Source: Dow Jones Venture Source, available at: http://www.dowjones.com/pressroom/releases/2012/1Q11Exit.swf



Unlike non-venture backed IPOs, the typical venture backed offerings are not yet profitable at the time they go public and have less of a positive return on their first trading day[45]. This is due to *certification hypothesis* that, because venture capitalists certify the company's financial soundness, venture-backed IPOs should be characterized by less severe under-pricing[46]. Hence, investors at the capital markets need less of a discount to purchase these shares. Lower underpricing may also occur if venture backing is expected to enhance the liquidity of trading after the IPO[47]. Notable exception of the certification hypothesis were the Internet Bubble years (1998-2000) when the size of underpricing displayed an increasing trend, especially in IT and communication sectors,

44 Barry, Christopher, Muscarella, John W. et al., (1990), "The role of venture capital in the creation of public companies: Evidence from the going public process", Journal of Financial Economics, 27

45 Ibidem

46 Megginson, W., Weiss, K., (1991), "Venture capitalist certification in Initial Public Offerings", Journal of Finance, 46, (3), pp. 879-903

47 See: Ellul, A., Pagano, M., (2006), "IPO Underpricing and After-Market Liquidity", Centre for Studies in Economic and Finance, working paper No 99

consistent with the speculative behaviour by venture capitalists[48]. The opposing *grandstanding* theory suggests that in fact the underpricing is more for VC-backed IPOs, because VC firms aim to maximize the probability of future fundraising due to VC funds' finite lives. To do so, they need to create a reputation for bring able of taking portfolio companies public. Hence, they are ready to bear the costs of larger underpricing, because the market exit signals their quality as investors[49].

1.3. The economic impact of venture capital investing

Statistical data from National Venture Capital Association (NVCA) demonstrates why all over the world policy makers are willing to establish and develop VC industry. Both academic and practitioner research shows that venture capital investing adds value. The NVCA's 6th edition of Venture Impact report, using data collected by IHS Global Insight, just reaffirms the story of venture capital's crucial impact on U.S. job creation and economic growth[50]. To begin with, while investment in venture-backed companies only equates to between 0.1 percent and 0.2 percent of U.S. gross domestic product each year, VC-backed companies **have generated revenue equal to 21 percent** of U.S. GDP and what is astonishing for **every dollar** of venture capital invested from 1970 to 2010, **$6.27** of revenue was generated in 2010. For the 2010 year $3.1 trillion in venture-backed revenue equals to **10% of total U.S. Sales**. Venture capital industry created **11% of the private sector employment for 2010** (11.9 million venture-backed jobs). While total employment and revenue for venture-backed companies contracted during the 2008-2010 downturn, both did so at lower rates compared with the other US economic sectors. As a result, venture-backed companies actually increased their percentage shares of total U.S. activity in employment and revenue growth in time of crisis. This ability of VC-backed companies to outperform their non-venture counterparts –even during a financial crisis- flows from venture capital's focus on highly innovative, emerging growth companies. The 500 largest public companies with venture roots increased their collective market capitalization by approximately $700 billion, rising from $2.1 trillion in 2008 to $2.8 trillion in 2010. The projections are that capital's impact on the U.S. economy will likely grow even larger. That's because many of the fastest growing venture-backed

48 See: Coakley, J., Hadass, L., Wood, A., (2007), "Post IPO operating performance, venture capital and the bubble years", Journal of Business Finance& Accounting 34, (9-10), pp. 1423-1446

49 See: Gompers, Paul, (1996), "Grandstanding in the venture capital industry", Journal of Financial Economics, 42, pp. 133-156

50 Venture Impact: The Economic Importance of Venture Capital-Backed Companies to the U.S. Economy, available at: http://www.nvca.org/index.php?option=com_content &view=article &id=34 4&Itemid=103

companies in the U.S. have not yet to go public and according to IHS Global Insight research 92% of job growth for young companies occurs after their initial public offerings.

2. DETERMINANTS OF THE VENTURE CAPITAL INDUSTRY IN EUROPE

Although "classic" venture capital investment by privately financed partnerships in early-stage entrepreneurial companies is completely an US phenomenon (that was born due to unique circumstances in Silicon Valley and Boston), private equity financing has its establishments in Western Europe. The American venture capital model described in the previous chapter suffers changes in accordance with differences in the political and legal environment in Europe; for the purposes of this thesis "legal environment" shall be defined as: the totality of the regulations and laws that surround the operation of the business in the sovereign state's territory and have to be followed to ensure safe practice. What is more, the venture capital industry is also prone to mutations due to the diversity of the national systems of innovation, economic development, educational achievements, and business culture. The chief differences between European and American venture capital lie in[51]:

(1) "the principal sources of funds for venture capital investing,
(2) the organization of the venture funds themselves,
(3) the development stage of the portfolio companies able to attract venture financing;
(4) the principal method of harvesting venture capital investments."[52]

These differences are the reason why the venture capital in the USA was more successful in promoting rapid technological development and, as a consequence, sustainable economic growth and job creation[53]. The European Venture Capital Association (EVCA) in its recent report[54] reaffirmed the notion that innovation, growth and venture capital are interconnected- "*private*

51 Megginson, William, (December, 2001), see supra note: 8

52 Author's note: Important comparative research of the VC industries in USA and Europe is made by: Hege, Ulrich, Palomino, Frederic, (2003), "Determinants of Venture Capital Performance: Europe and the United States", Risk Capital and the Financing of European Innovative Firms (RICAFE), working paper No 001, available at: http://www2.lse.ac.uk/fmg/research/RICAFE/pdf/RICAFE-WP01-Hege.pdf; Black, Bernard S. and Ronald J. Gilson, (March, 1998), "Venture Capital and the Structure of Capital Markets: Banks Versus Capital Markets," Journal of Financial Economics 47; Jeng, L.A., Wells, (2000), "The Determinants of Venture Capital Funding: Evidence Across countries," Journal of Corporate Finance 6; Schilit, W. Keith, Willig, John T., "The Globalization of Venture Capital," in Fitzroy Dearborn International Directory of Venture Capital Funds, 2nd ed. (Fitzroy Dearborn Publishers: Chicago, IL, 1996a); Schwienbacher, Armin, (2008), "Venture capital investment practices in Europe and the United States", Financial Markets and Portfolio Management, 22

53 See statistical data provided by the Venture Impact, see supra note: 50

54 See: PE/VC in the European Economy – An Industry Response to the European Parliament and the European Commission - February 2009, EVCA, pp. 5, available at: http://www.evca.eu/BTF/FULL_SUBMISSION_to_the_European_Parliament_and_the_European_Commission_ february_2009.pdf

equity and venture capital industry can be part of the solution to help overcome the current funding crisis and thereby play an active role contributing to the recovery of European economies" and reaffirmed that states governments will act as catalysts for creating active and well-functioning venture capital cycle in Europe. The policy makers and private sectors are willing to be partnering with each other in order to create a regulatory environment that supports dynamic and competitive EU market.

The definition of institutional venture capital in Europe is different in a sense from that in the US, being far more overreaching. European VC industry includes investments in terms of early and expansion stage financing. On the contrary, in the US, the term "venture capital" is narrower and refers to early stage investments in growth-oriented firms, or what Bygrave and Timmons[55] call "classic venture capital". The divergence in terms' notion is based on the different investment philosophies applied in the United States and in Europe. In the US, with nearly sixty years of development history, venture capital organizations continue to show remarkable interest in companies that are still in their early stages. In Europe, however, the adoption of such sort of financial activity has been characterized, from the mid-eighties onwards, by a concentration on large-scale investments, leaving a mere six to eight percent of total funds invested for start-ups up to 1999.[56] Therefore, the information regarding VC industry in European countries includes data both on venture capital and private equity activity. This situation limits the possibility of directly comparing the US with the European experience, but for the purpose of this paper we will be jointly referring to venture capital and private equity, thus including any commitment to unquoted companies, excluding the growth and buyout capital[57]. However, recently EVCA in its report draws the line between VC and private equity more in accordance with the US notion[58] (*See figure 2:1*).

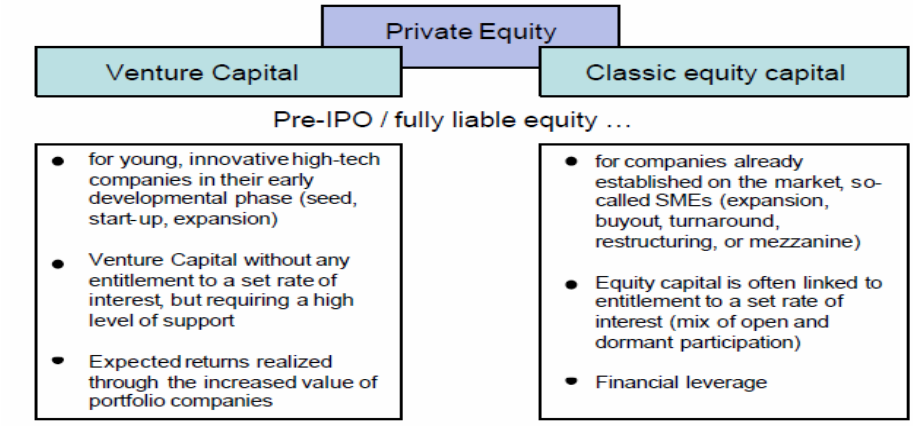
Figure 2:1: Clarification of terms, private equity as a general term for the entire spectrum of pre-IPO equity capital; source: Mackewicz & Partners, (March 2004), „Institutional Investors and their Activities with regard to the Alternative Asset Class Private Equity", available at: http://www.fhpe.de/vc-panel-e/PE-Study%202004-Executive%20Summary.pdf

55 See: Bygrave, W.D., and Timmons, J.A., (1992), "Venture Capital at the Crossroad", Boston, MA, Harvard Business School

56 See: EVCA, 1988-2001

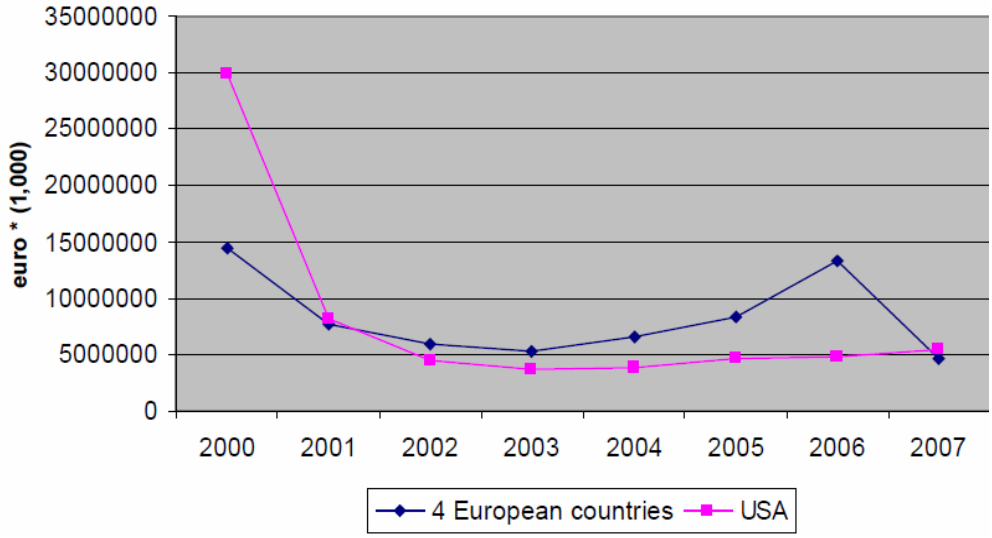
57 Author's note: Distressed debt and turnaround situations are considered separate categories which fall within growth capital and buyouts. They are excluded from the notion of venture capital.

58 See: PE/VC in the European Economy, see supra note: 54, pp.12



As in the USA, venture capital fund investment in Europe has shown a revival after the burst of the Internet bubble in 2000 with a stable level of growth from an average 10.68 billion euro at the years after the dot.com crisis to 17.3 billion (invested in more then 5000 companies[59]) in 2006, this is also the peak year for VC investments for the ten-year period (2001-2010). In the period after the dot.com bubble European VC even outperformed its USA counterparty (*see figure 2:2)*, merely because of the UK's good performance as a market-centered economy[60].

Figure 2:2: Venture Capital Investments in the USA and Europe between 2000- 2007 (four European countries UK, France, Germany and Italy), source: Revest, Valérie, Sandro Sapio, Sandro, (2009), "Financing Technology-Based Small Firms in Europe: A review of the empirical evidence", Laboratory of Economics and Management Working Paper Series. 2008/23, Pisa, pp. 34, available at: http://www.lem.sssup.it/WPLem/files/2008-23.pdf



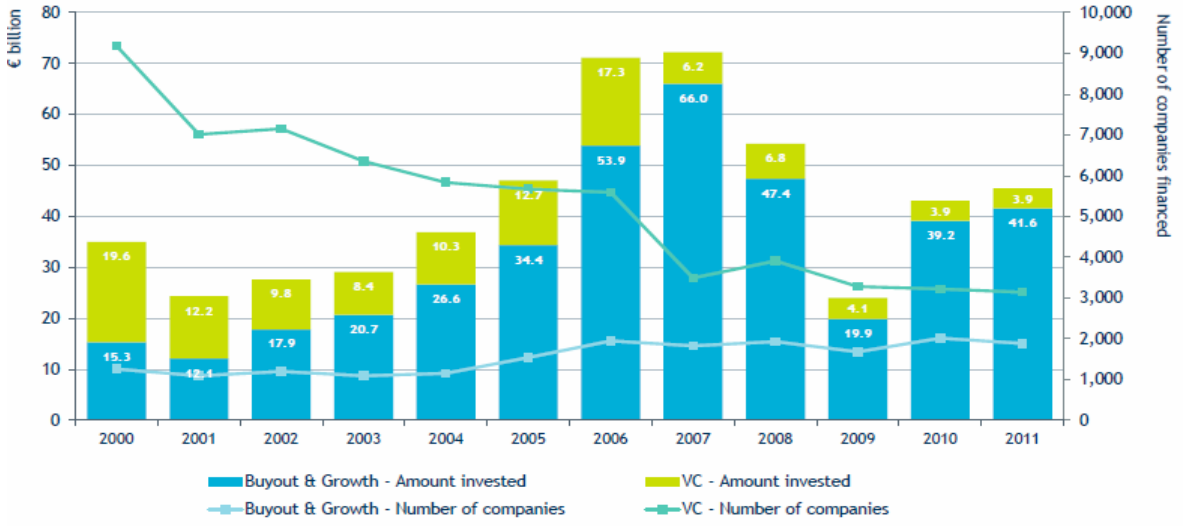
It is interesting that in 2007 the venture capital industry suffered a sharp decline almost three times for just a year (from 17.3 billion in 2006 to 6.2 billion euro in 2007). In the next year 2008, there

59 Author's note: It is interesting to note that although the amount of financing increased when compared to the one in 2000, the number of companies that acquired private equity investment decreased approximately two times (from 9 400 in 2000 to 5500 in 2006). That shows higher average sizes of investment per company, but can be also negative indicator for the lack in the demand side for private equity investments.

60 See: Revest, Valérie, Sapio, Sandro, (2009), "Financing Technology-Based Small Firms in Europe: A review of the empirical evidence", Laboratory of Economics and Management Working Paper Series. 2008/23, Pisa, pp. 8-9, available at: http://www.lem.sssup.it/WPLem/files/2008-23.pdf

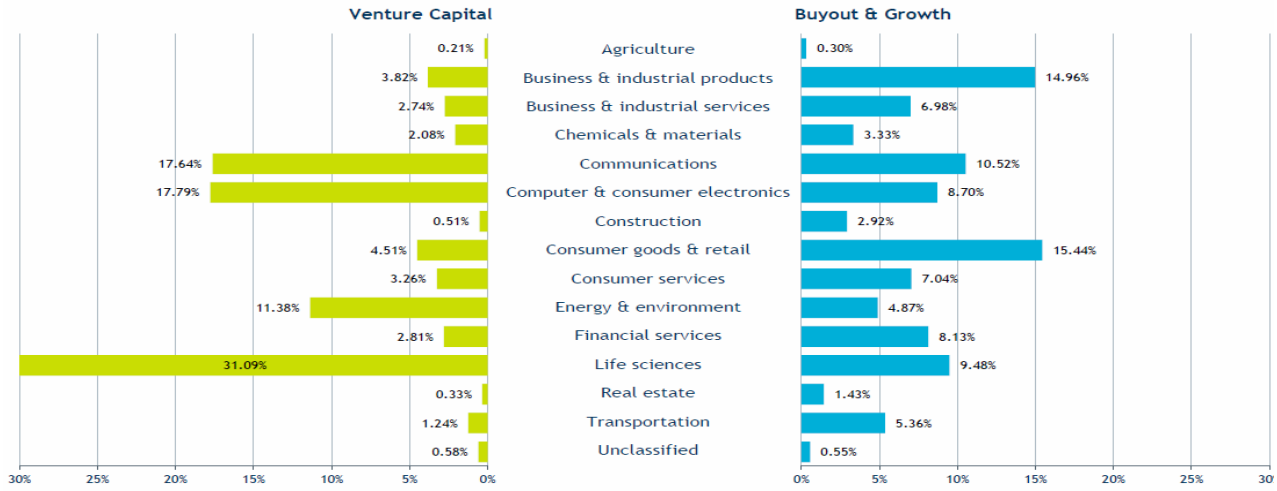
was a sharp decrease in the amount of investments by the European private equity firms, but investment rate soon started climbing again, reaching €39.2 billion in 2010, representing a 77% increase compared to 2009. However, from the statistics it seems that venture capital industry has not been recovering so fast as the private equity one: even in the worst year for the European economy 2009 VC investments were more then those in the years 2010 and 2011 (*see figure 2:3*). The VC curve that slowly reacts and adjusts to changes in investment environment due to short-term shocks can be explained by the illiquid nature of the VC investment. On the contrary, private equity is more dependant on the market fluctuations as it enjoys a set rate of interest over its commitments to the portfolio firms and expected returns are realized through financial leverage.

Figure 2:3: 2000-2011 Industry statistics by amount and number of companies/ Overview of venture capital and Buyout& growth investments; source: EVCA Yearbook 2012, available at: http://www.evca.eu/uploadedfiles/home/press_room/Yearbook_2012_Presentation_all.pdf



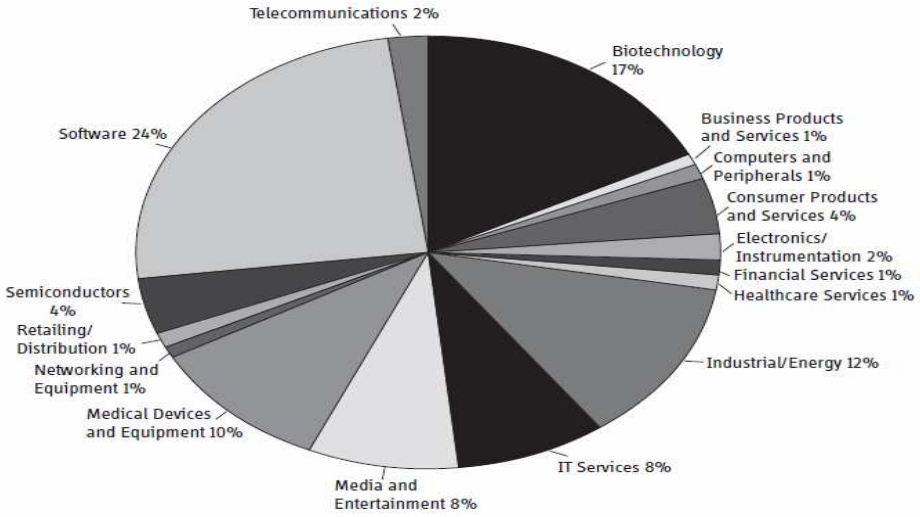
Historically, European VC has been funneled to different industries and different types of companies than the US, though this trend has been changing lately. Nowadays the biggest part of VC investments goes to computer and IT, medical related and environmental and clean energy producing industries being the most innovative. As recently as 1996, less than one-fourth of European venture capital went into high technology investments; by 2000, the fraction allocated to high tech industries topped 54%. In 2011 Venture capital was mainly driven by investments in the life sciences sector (31, 1% of the total by amount, and 23, 56% by number of companies) and at the second and third place computer and consumer electronics and communications (17, 79% and 17, 64% respectively); the other sectors with a big slice of the pie of venture capital investments are energy/environment, consumer goods/retail and services and business/industrial products and services (*see figure 2:4*).

Figure 2.4: Investments by sector in 2011 (% of the total amount), comparison between VC and Buyout/ growth capital (private equity); source: EVCA YEARBOOK 2012, available at: http://www.evca.eu/uploadedfiles/home/press_room/Yearbook_2012_Presentation_all.pdf



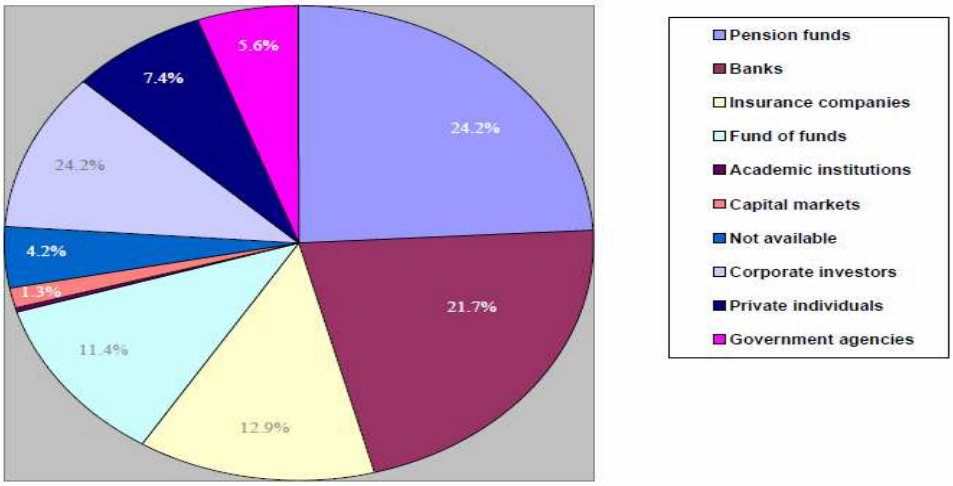
As the NVCA Yearbook 2012 shows, the leading industry sectors for venture capital investments are Software (24%), Biotechnology (17%), Industrial/Energy (12%), Medical devices and equipment (10%), IT services and Media and Entertainment (8%). It can be said that in US telecommunications (in distinction with Europe) take just insignificant 2% of the venture capital investments and consumer products and services merely 4%. It is interesting also to note that due to different labeling of industries in US and Europe is hard conclusive comparison to be made. For instance, "life sciences" in Europe correspond to "biotechnology, health care, medical devices and equipment" in US. Europe's "Computer and consumer electronics" probably encompasses some of the activities being defined as "Software", "IT services", "Semiconductors", "Networking and Equipment" in the new world (*see figure 2:5*).

Figure 2:5: Investments in the US by sector in 2011 (% of the total amount); source NVCA YEARBOOK 2012, available at: http://www.nvca.org/index.php?option=comcontent&view=article&id=344:recent-stats-a-studies-2&catid=40:research&Itemid=103



Unique characteristics of the European VC industry begins with the first stage of the cycle: there is difference in the predominant institutional investors. As fundraising is concerned the source for European venture capital firms distinguishes from their overseas counterparts- Europe greatly relies on financial institutions (mainly commercial banks, which are really powerful in "the old world") and lesser reliance on pension funds as it is the case in the US. For 2000 banks, insurance companies, and other corporate investors account for almost half (45.5%) of all European venture funding, whereas pension fund money represents less than a quarter (24.2%) of total fund-raising, and American pension funds contribute about half of this total (*see figure 2.6*). And one must not forget that due to differences in terms this is data for European Private Equity as a whole, including VC only as a fraction. If the data for the European VC industry is analyzed solely, the amount of funding coming from pension funds is even smaller. Although governments account for only a 5.6% share of total capital raised, their influence is far greater than its absolute level might indicate, as European governments are much fonder of direct regulatory intervention in business development than are America's federal, state, and local governments. However, in 2010, after two major shakes of the capital markets and collapse of large financial institutions (the dot.com bubble and the 2008 financial crisis or as it is known "The Second Great recession") the sourcing of European venture capital funds looks somehow different (*see figure 2.7*): banks and insurance companies have diminished their involvement in VC fundraising to 8, 8% and 5, 1% respectively (from the 2000 year levels of 21, 7% for the banks and 12, 9% for insurance companies).

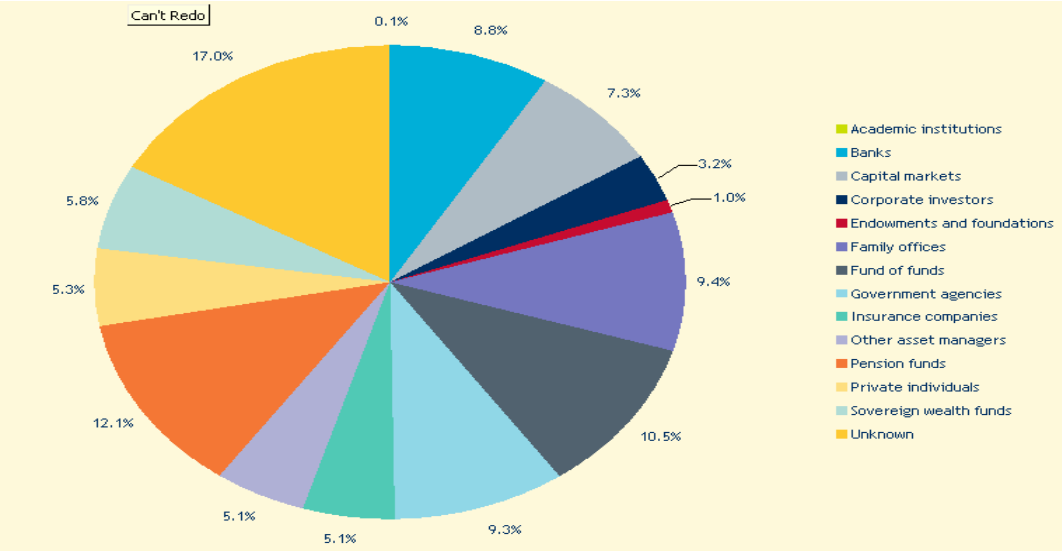
Figure 2.6: European private equity raised by type of investor for year 2000, source: EVCA as reported by Simon Targett, "Institutional Investment: Should do More," Financial Times, (June 14, 2001), European Private Equity



What is important is that government involvement in VC sourcing has increased to 9, 3% in 2010, which can be explained by the active measures that governments are undertaking in the aftermath of the crisis in order to promote innovation and economic growth. Pension funds participation decreased two times from 24, 2% to 12 and 1%. Although, the European venture capital industry is

found to be more integrated than previously believed: 27% of all venture firms have an office in a foreign country, and 24% of investments are cross-border[61], and significant links to the U.S. lead to increasing emulation of U.S. investment practices, the distinctively European aspects, such as the prominence of bank and corporate investors, do remain[62].

Figure 2:7: Private equity funds raised by the type of investor, annual survey 2010, EVCA, PEREP-Analytics



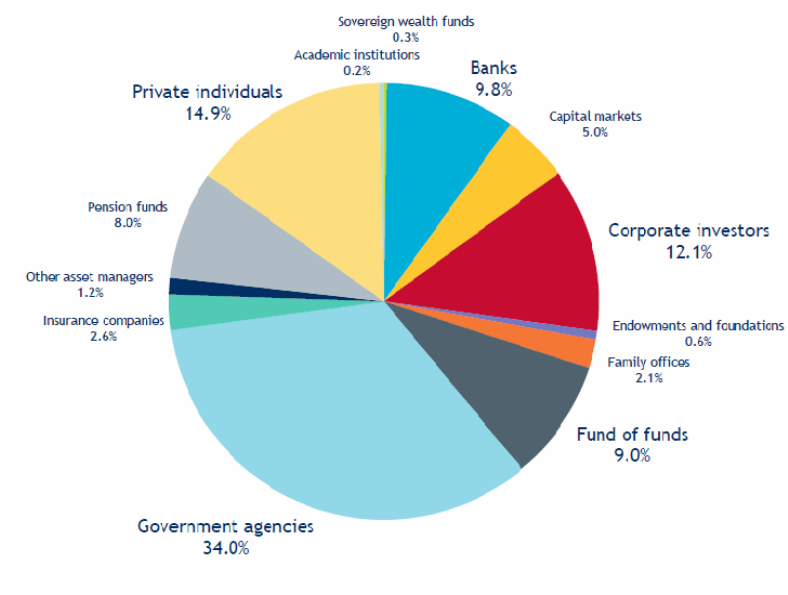
One year later EVCA statistics shows that governments are becoming the main providers of capital for young innovative firms with astonishing 34%. It seems that traditional sophisticated investors- banks, pension funds and insurance companies- have lost their impact on European VC industry with insignificant 9, 8%; 8% and 2, 6% respectively. There is an increase in the percentage of private individuals (family offices[63]), committing money to VC funds (14, 9% for the year 2011 compared to slight 5, 3% for the year 2010). The slice of the pie for corporate investors also increased (from 3, 2% in 2010 to entire 12, 1% in 2011), showing the trend of corporations participating in high-tech clusters together with public authorities in order research and innovations outcome to be achieved. The slice of the pie for funds-of-funds and capital market suffers slight decrease (with less then 2 %) in 2011, but this change can be neglected (*see figure 2:8 for the 2011 graphics*).

Figure 2:8: Venture capital funds raised by type of investor for 2011 (incremental amount raised during the year- % of the amount); Source: EVCA Yearbook 2012, available at: http://www.evca.eu/uploadedfiles/home/press_room/Yearbook_2012_Presentation_all.pdf

61 Author's note: The data is according to The Survey of European Venture Capital (SEVeCa) as the largest academic study to date (2004) on the European venture capital industry, providing information on more than 1,300 investment companies, 400 venture partners, and 150 venture funds.

62 For the summary of the SEVeCa see Botazzi, Laura, Da Rin, Marco and Hellmann, Thomas, (Winter, 2004), "The changing face of European Venture capital industry: Facts and analysis", Journal of private equity, vol. 8, available at: http://www.avco.at/upload/medialibrary/19400_0_SEVeCa-SumReport.pdf

63 Author's note: family offices are structured as a private company that manages investments and trusts for a single wealthy family. The company's financial capital is the family's own wealth, often accumulated over many family generations

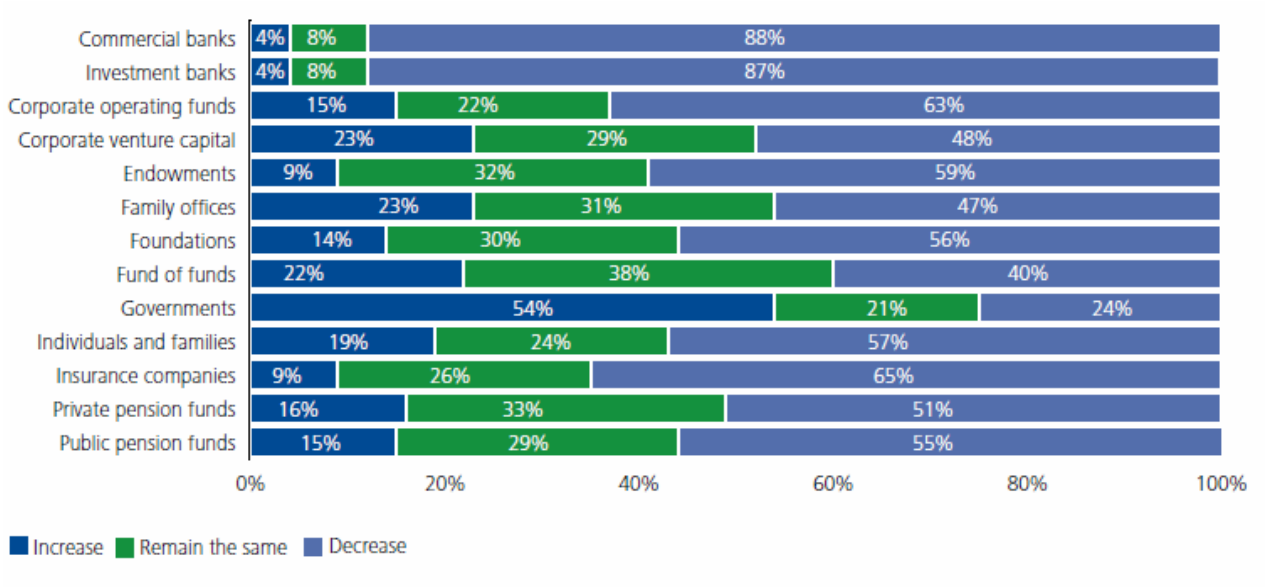


It is likely that for the next three years the decrease in traditional institutional investors' willingness to pool their money in start-ups and the phenomenon of governments being the desired limited partners by venture capitalists worldwide will remain. According to the 2009 Global Venture Capital Survey[64] 88 % of the respondents are pessimistic over commercial bank investors' willingness to invest in venture capital over the next three years and another 87 percent think the same for the investment banks. "About six out of 10" are not optimistic about future commitments made by insurance companies, public and private pension funds and endowments. Intriguingly, more than half of venture capitalists see governments as willing investment partners with another fourth looking at family offices as prospective limited partners (*see figure 2:9*). Just for a brief comparison, even in the USA where traditionally venture capitalists rely on private capital with rare examples of publicly backed-up VC funds (famous exception being the SBIR programme[65]), 41% of the respondents in the survey expect greater involvement by governments in the following years.

Figure 2:9: The affect of the economic crisis on the different types of limited partners' willingness to invest into venture capital: source: 2009 Global Venture Capital survey, DTT-TNT industry group

64 Deloitte Touche Tohmatsu (DTT) Technology, Media & Telecommunications (TMT) industry group's 2009 Global Venture Capital Survey, available at: http://www.deloitte.com/assets/Dcom-Global/Local%20Assets/Documents/_tmt_2009vdsurvey.pdf; the survey was conducted with venture capitalists (VCs) in the Americas, Asia Pacific, Europe and Israel. There were 725 responses from general partners of venture capital firms with assets under management ranging from less than $100 million to greater than $1 billion.

65 See: Lerner, Josh, (1999), "The government as venture capitalist. The long-run impact of the SBIR program", The Journal of Business, Vol. 72, (3)



This worldwide phenomenon is due to the consequences of "2007 second great recession": drying of traditional institutional investors'[66] available funds to invest and adoption of stringent frameworks that limit banks' and insurance companies' investments in high-risk assets[67]. Other reason in Europe may be the recent public initiatives on EU level in promoting small and medium-sized start-ups in order drive the real economy and overcome the recession[68].

Due to the unique characteristics of countries own venture capital markets, the pan-European one is all but homogeneous. Banks account for more than half of all new funds raised by venture capital firms located in Portugal and Austria, are the single most important source of venture funding for Germany, the Netherlands, Spain, Italy, Denmark, Greece and Switzerland (DACH and Southern Europe countries). In contrast, banks are virtually absent from the private equity market in the Nordics (Iceland, Denmark, Finland, Sweden and Norway). Pension funds are the

66 Author's note: Banks, Insurance companies, Pension funds

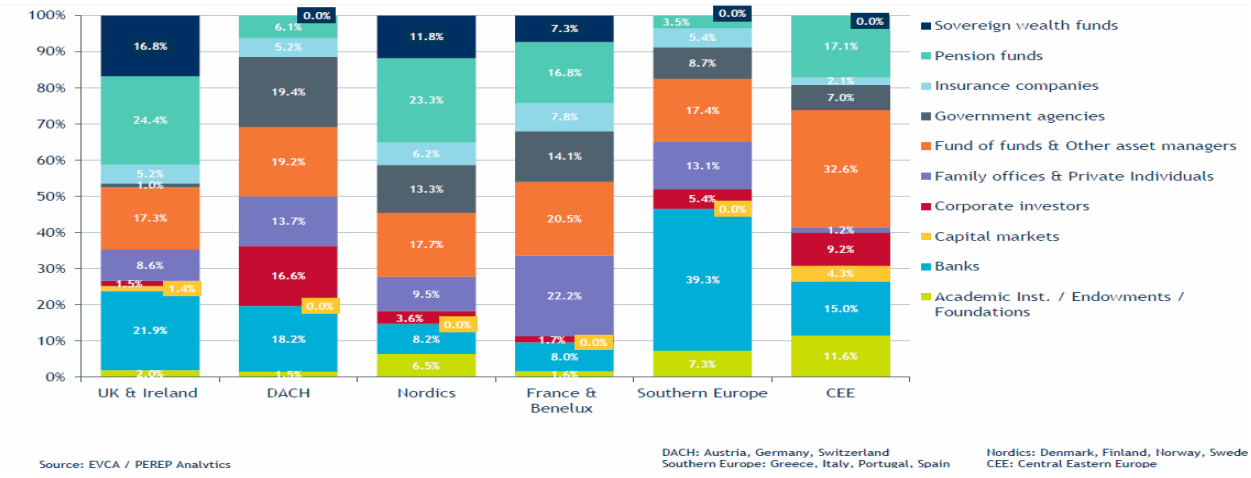
67 The existing capital framework for banks developed by the Basel Committee for Banking Supervision - transposed in EU law via two adaptations of the Capital Requirements Directive 2010/76/EU (known as Basel III) aims at strengthening prudential banking rules; Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II);

Something more: on 20 July 2011, the Commission adopted a legislative package to strengthen the regulation of the banking sector. The proposal replaces the current Capital Requirements Directives (2006/48 and 2006/49) with a Directive and Regulation. The new Directive governs the access to deposit-taking activities while the Regulation establishes the prudential requirements institutions need to respect. The legislative package is currently under negotiation in Council and Parliament; source: Impact Assessment, accompanying the document Proposal for a Regulation on European Venture Capital Funds, Commission Staff Working paper, COM(2011) 860

68 Examples for such EU framework are: Community Guidelines on state aid to promote risk capital investments in small and medium-sized enterprises (The Risk Capital Guidelines 2006/C 194/02); Communication from the Commission on Removing obstacles to cross-border investments by venture capital funds COM(2007); Single Market Act, Twelve levers to boost growth and strengthen confidence, "Working together to create new growth" (2011); Commission White paper on enhancing the single market framework for investment funds, executive summary to the impact assessment, (2006); Council Conclusions, "Think Small First – A Small Business Act for Europe", (1 December 2008); EP Resolution, Annex – Recommendation 1 on VC sector and SMEs (23 September 2008);

leading source for the United Kingdom and Ireland, Finland and Sweden, but are still underdeveloped in Greece, Portugal, Austria and Belgium. Concerning other sources insurance companies are particularly important for Finland and Sweden. Government agencies account for a egligible part of total funding in France and Benelux countries, DACH countries (Germany, Austria, Switzerland), has still big slice of the pie in the Nordics and is of less importance for South European countries. Similarly to the US, United Kingdom and Ireland do not rely on government's involvement in VC industry.[69]. As Central and Eastern Europe is concerned the biggest part of the investments comes via finds of funds and different asset managers, pension funds, banks and corporate investors. It is interesting to note that only 7% of funds come from public agencies, which is due to underdeveloped policy and legal frame for promoting sustainable growth via promoting innovative start-ups. The most recent statistic data confirms heterogeneity of European VC industry in terms of sources of fundraising (*see figure 2:10*).

Figure 2:10: Funds raised by type of investor and region for 2011, Source: EVCA 2012 Yearbook, Creating lasting value, available at: http://www.evca.eu/uploadedfiles/home/press_room/Yearbook_2012_Presentation_all.pdf

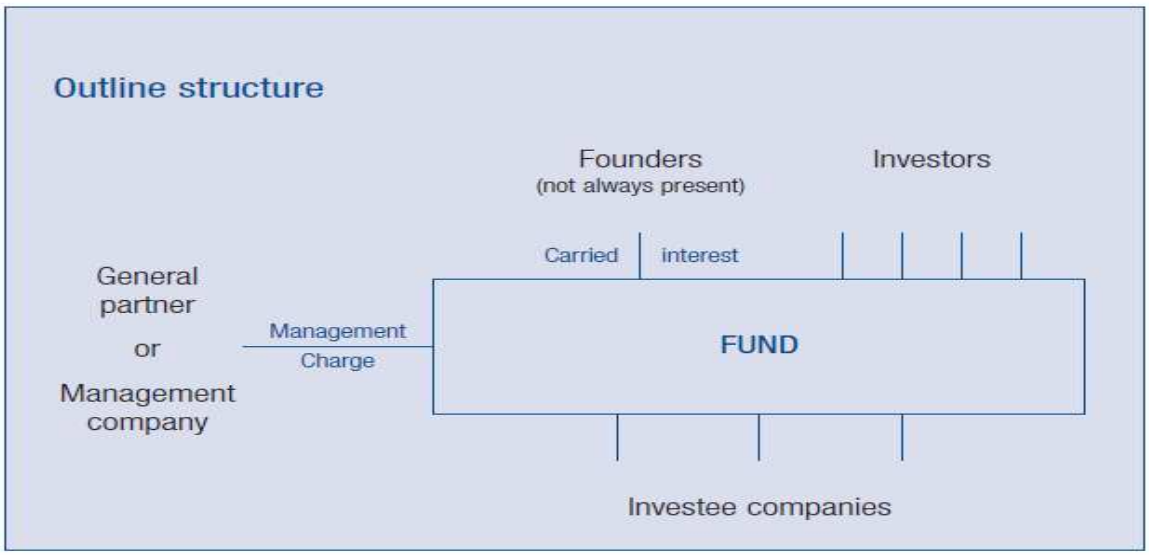


Because of the cultural and legal peculiarities, European venture capital funds generally are structured as investment companies (*see figure 2:11*) under various national laws. The management of the fund can either be employed by the fund itself or more usually, delegated to a separate management company or manager, providing his services to the fund. Either ways, the remuneration is in a form of annual management charge which is traditionally equal to 2, 5% of investor's initial commitments to the fund. In addition, the management company/team and the sponsor are commonly entitled to a "carried interest", typically up to 20% of the profits of the

69 Baygan, Günseli, Freudenberg, Michael, (December 2000), "The Internationalisation of Venture Capital Activity in OECD Countries: Implications for Measurementand Policy", Organisation for Economic Co-operation and Development, STI Working Papers, 2000, (7), available at: http://www.oecd.org/officialdocuments/ publicdisplaydocumentpdf/?cote=DSTI/DOC%282000%297&docLanguage=En

fund. In some European countries[70] the legal framework allows for an unincorporated arrangement similar to the US limited partnership to be adopted. If this is the case, investors would typically be limited partners and there will be a general partner- usually the Venture Capital firm/founders- which would be responsible for procuring the services of the separate manager. The limited partnership structure is tax transparent which means that its partners are taxed as if any income and profits allocated to them through the partnership were received directly from investee companies. European private equity funds are generally close-ended, meaning that investors commit at the outset and can not redeem their interests. They make usually fairy small number of investments and as the investments are realized, all proceeds are received. The proceeds are distributed (usually without reinvestment) so that the fund is self-liquidating. The European private equity investing style and approach to dealing with portfolio companies is much more close to the style of American closed-end mutual funds managers than to the proactive style of US venture capitalists[71].

Figure 2:11: Typical structure of an European private equity fund; source: Private Equity Fund Structures in Europe, An EVCA Tax and Legal Committee Paper, January 2006, edited by SJ Berwin LLP, available at: http://www.evca.eu/uploadedFiles/fund_structures.pdf



It appears, that European fund managers are more concerned with the financial side of the investing, not much on the "non-monetary contributions" to the start-up[72]. US venture capitalists differ from other intermediaries, because they actively influence the governance of their portfolio

70 Author's note: Such as Finland, Germany, Ireland, Netherlands, Sweden, United Kingdom, see: Private Equity Fund Structures in Europe, An EVCA Tax and Legal Committee Paper, January 2006, edited by SJ Berwin LLP, available at: http://www.evca.eu/uploadedFiles/fund_structures.pdf

71 Megginson, William, (2001), see supra note: 8

72 Author's note: Which, as was shown in chapter one, are even more important for the innovative start-up than the actual financing and add greater part of the value to the firm.

by employing an array of instruments, such as: capital stagingg[73], direct monitoring[74], and explicit control covenants[75], founder replacements[76]. Maybe one of the reasons about this distinction is that venture capitalist in Europe as equity investor in his portfolio companies simply purchases common stock or convertible debt. This might bring problems for the fund managers in Europe, since they would be able to exercise effective voting control over the start-up only if they subscribe for the majority of firm's common stock and what is more, at the same price as other investors. This ultimately is too expensive and adds additional business risk on the venture group. Furthermore, since- due to legislation restrictions- in Europe is hard multiple classes of preferred stock to be created, sophisticated contracting arrangements (being so important for the venture capital industry) can not be worked out between the firm and the different investor groups that finance the start-up in subsequent rounds. When structuring their investments with common stock instead of preferred stock European investors miss the advantages of contractual flexibility so typical for the US VC industry. They can not negotiate different covenants, such as dividend payout ratios, anti-dilution provisions in cases of new rounds of financing, ratchet provisions in case the portfolio firm is forced to sell new equity under duress. All of the contractual provisions connected with the issuance of the preferred class of stock forces the entrepreneur to bear most of the risk associated with the innovative undertaking, thus providing the maximum feasible protection for the venture group.

Contractual flexibility that the issuance and subscription of preferred stock offers, encourage not only venture capitalist to act properly in the relationship with the start up, but also gives the entrepreneur the option to gain back his control over the innovative company[77] in case of success. In their survey, Black and Gilson[78] stress on the importance of the "implicit contract over future control" for aligning the incentives between entrepreneur and VC capitalist. As investors put their money in particular projects and only for a limited period of time, exit becomes a crucial decision for the venture capitalists. Convertible preferred stock allows ex-ante the start-up and venture capital fund to align their interests on the exit mode, since ex-post, if conflict of interest occurs, the

73 Gompers, Paul, (1995), see supra note 3

74 Lerner, Josh, (1995), see supra note 3

75 Gompers, Paul, (1997), "Ownership and control in entrepreneurial firms: An examination of convertible securities in venture capital investments", Harvard Business School, Working paper

76 Chan, Y., Siegel, D., Thakor, A.V., (1990), "Learning, corporate control and performance requirements in venture capital contracts", International Economic Review, 31; Hellmann, Thomas, (1998),"The allocation of control rights in venture capital contracts", RAND Journal of Economics, 29

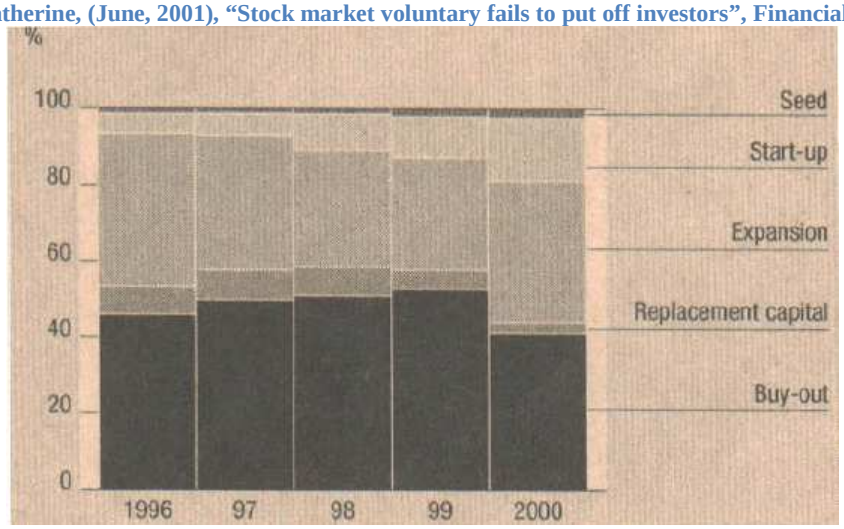
77 Author's note: it seems that preferred stock is the best way of mitigating the "double-moral hazard" as explained in chapter 1; pp. 5-6

78 See: Black, B.S., Gilson, Ronald, J., supra note 52

agreement between entrepreneur and the VC may be suboptimal as renegotiation is likely to be costly and the implicit contract over control could be difficult to enforce[79].

Because of the lesser contractual flexibility, European venture capital historically has been less focused on early-stage investments. That explains why the term venture capital in Europe encompasses later stage investments in innovative firms and why EVCA in its reports and statistics does not make so strict distinction between venture capital and private equity. The evolution of the European venture capital investment by stage of company's life over the period 1996- 2000 is presented in *figure 2:12*. Buyouts account for average 40% of European private equity investment and early stage companies attract almost 20% of the total.

Figure 2:12: Distribution of European Private Equity Investment by Stage of Company Development (1996-2000); Source: Campbell, Katherine, (June, 2001), "Stock market voluntary fails to put off investors", Financial times, p. 6



The figure is comparable to the American levels of that time and indicates the trend that European investors become less risk averse and their appetite for venture capital has been increasing steadily. The question is if this phenomenon is just temporary or will hold up during a downturn cycle in global VC financing and returns. The statistical data from EVCA shows that the risk tolerance of European investors, when it comes to venture capital, is not so strongly influenced by economic downturns, as happens in the case of buyout capital for example. In the years 2007, 2008 and 2009 there is even slight increase in the portion of seed and early stage investments from less than 4% to 10% in 2009 (*see figure 2:13*). Intriguingly, 2009 in terms of total private equity investments is the worse year in the aftermath of crisis- with only 24 billion (rounded) total invested (*see figure 2:3*), but with 3, 7 billion euro provided to seed, early and later stage of innovative companies (around 15% of the total private equity in Europe at that time; *see figure 2:14*. An assumption can be made

79 See: Bascha, Andreas, Walz, Uwe , (September, 2001), "Convertible Securities and Optimal Exit Decisions in Venture Capital," Journal of Corporate Finance 7

that venture capital industry suffered from the economic crisis much less than say the buyout capital that reduced its amount more then four times and a half (from 57, 7 billion in 2007 to 12, 3 billion euro in 2009). However, it is far early to speak about revival of VC industry having in mind current attitudes amongst venture capitalists and the risk-averse behaviour of the sophisticated investors. VCs are re-evaluating the stage in which they're investing and significant percentage are shifting their focus to later-stage companies. Very few are shifting to early-stage investing. Undoubtedly, this is due to both the uncertainty, embracing capital markets, and the fact that it is now taking longer time for companies to be acquired and hard for them to go public[80]. Investing in later-stage firms shortens the venture capitalists' gestation period and allows them to exit sooner[81]. In the stringent economic environment it is worthy investing either at very early-stage or at very late stage. Consequently, venture capitalist adopt reasonable investing strategies either investing smaller sums in seed and very early stage of firms life or committing moderate sums in much later stage. The classic series B round has been neglected[82].

Figure 2.13: Investments by stage focus- evolution (industry statistics- % of the total amount); Source: ECVA Year book 2010

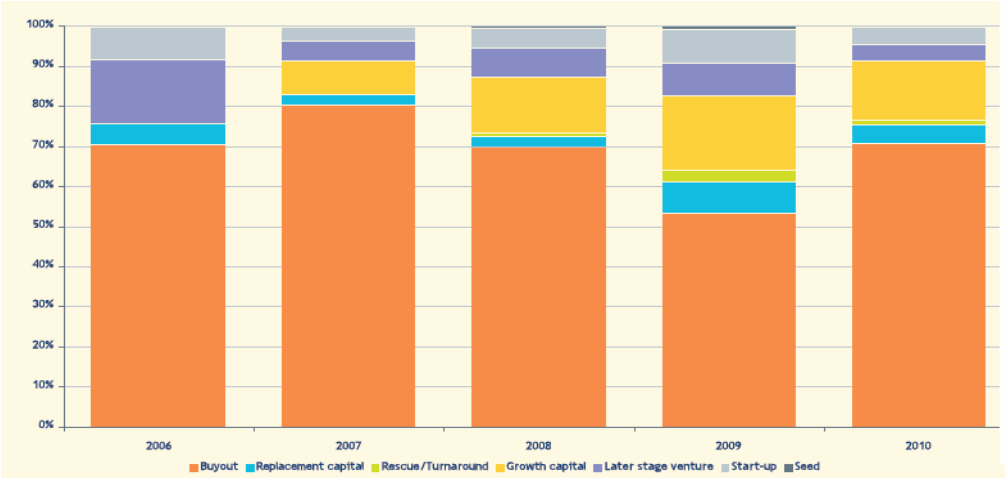
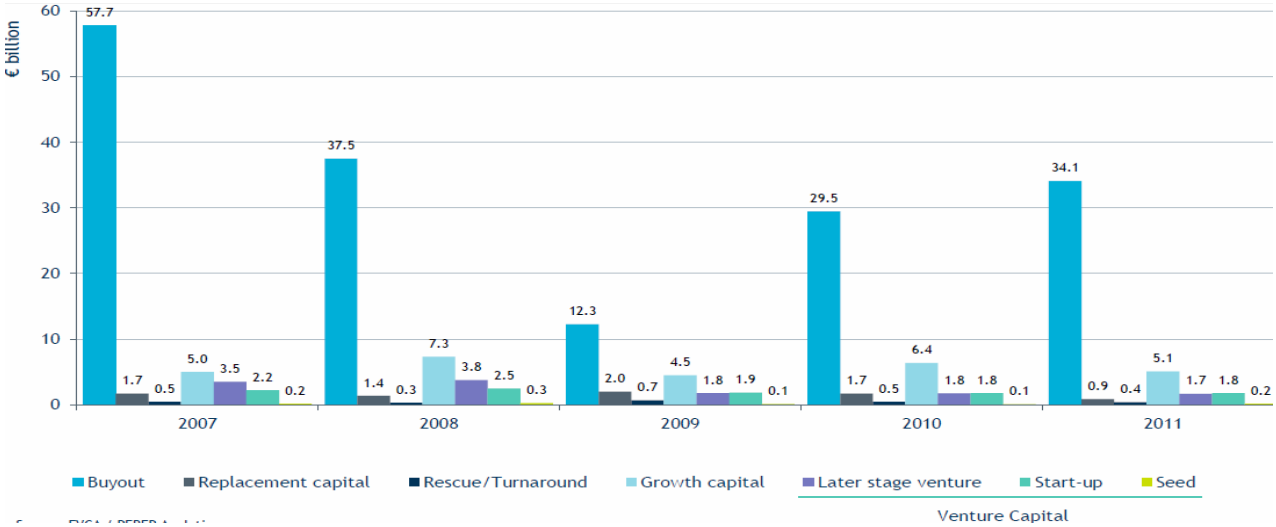


Figure 2:14: Investments by stage focus/ 2007-2011 market statistics- amount; source: EVCA Yearbook 2012

80 Author's note: this is due to changes in the continuity of the VC cycle and the exit strategies: consequences caused by distortion in capital markets after the crisis, see later in this chapter.

81 See supra note 64

82 Ibidem



The most important explanation why venture capital industry differs in US and Europe is the availability of different exit strategies. As the EVCA statistics show 46, 7% of the divestments were made via trade sale, followed by sell to another private equity firm (11, 4%). Totally, the exits made by some kind of sale for 2010 are 65, 2% (including sales to management and sales to financial institution). The proportion of exit via Initial Public Offering is only 14, 8% (*see figure: 2:15*). At first glance, NVCA statistics could be misleading- numbers show that divestment via trade sale (or merger and acquisitions as is the American terminology) is as much as high as the proportion of the IPO venture-backed exits (*see figure 2:16*). However, Black and Gilson argue that what matters for the development of active venture capital market and what really distinguishes the two continents is the *"potential"* for exit via an IPO, *"even if exit often occurs through the portfolio company's sale"*[83]. They prove this hypothesis by establishing the model of the "*implicit contract over future control"* (*see figure 2:17*) as potential opportunity that aligns the incentives of the capital provider and the entrepreneur, since they are in a "principal-agent" relationship that brings the double-moral hazard. Other aspects of the contractual framework negotiated at the time of initial investment are the staging of the VC financing[84], and the purchase of the convertible securities by the fund in order to mitigate ex-post distribution conflicts between the start-up and the VC fund associated with the future sale of the firm[85]. When an IPO occurs the entrepreneur receives not only cash to the extent that he sells some of his shares in the offering plus increased value and liquidity for the unsold ones, but what is more important, reassumes the control originally ceded to the venture capitalist. The venture capitalist's percentage stake is reduced by the direct sale of shares, by the venture capitalist's in-kind distribution of shares to the

83 See: Black, Bernard, Gilson, Ronald, (1997), see supra note 52, pp. 243-277

84 See: Admati, A., Pfleiderer, P., (1994), see supra note: 23

85 Bergloff, E., (1994), "A control theory of venture capital finance", Journal of Law, Economics & Organization 10

limited partners[86] and by the company's sale of new shares to dispersed purchasers via the stock exchange. The new publicly-held firm no longer depends on the stage financing and monitoring and managerial advice of the VC fund, because the stock market and the market for corporate control are available. Since the liquidity is increased, the need for monitoring is decreased[87], which lead to reduction in venture capitalist's holdings of the portfolio company's shares. What is more, control rights (such as reserves seat for the VC in the start-up board and power veto over business decisions) initially given when the investment is made, cease to exist on an initial public offering, whether or not the VC funds sells any of its converted shares in this IPO. In a nutshell, the VC fund's special control rights disappear in time of an IPO and the venture capitalist is left only with the weak control rights attendant to the stock ownership (of the converted to common stock preferred shares). Control becomes vested again back in entrepreneur, who often retains the controlling stock interest. This opportunity exactly- to acquire his company back in case of success-provides the entrepreneur with a powerful incentive beyond the purely financial gains from the increased value of the firm. Or an IPO exit gives the entrepreneur something of a call option on control, contingent on the firm's success[88].

By contrast when in Europe the venture capitalist exits through a sale of the portfolio company to another established firm, the outcome for the entrepreneur is not so gainful. Of course, the entrepreneur receives cash or publicly traded shares of the acquirer as consideration for his start-up ownership, but what is the most important - he loses the control of the innovative firm, he has created. The control passes to the purchaser (called acquirer) in the sale deal, even if the entrepreneur remains in charge of running the day-to-day business as a CEO for example. This outcome brings less as an incentive for new, innovative companies to be launched in Europe. A potential entrepreneur will prefer not to leave his secured job, just to start a venture with uncertain final outcome and often scarce gains. The low rates of entrepreneurial activity (the demand side of the VC industry) in the old world can be explained with the hardly achievable IPO exits.

The "*implicit contract over future control"* that Black and Gilson describe can not be really duplicated in a bank-centered system. Because the incentive properties of this contract go to the hart of entrepreneurial process, its availability in a stock-centered capital market links the venture capital market and the stock market and can explain the absence of active venture capital in countries with bank-centered capital markets.

86 Gompers, Paul, Lerner, Josh, (1997), "Venture capital distributions. Short-run and long-run reactions", Unpublished working paper, Harvard Business School

87 Coffee, J., (1991), "Liquidity versus control: The institutional investor as corporate monitor", Columbia Law Review, 91

88 See: supra note 86

Figure 2.15: European Venture Capital divestments by exit route, year 2011 (% of the total amount); Source: EVCA Yearbook 2012

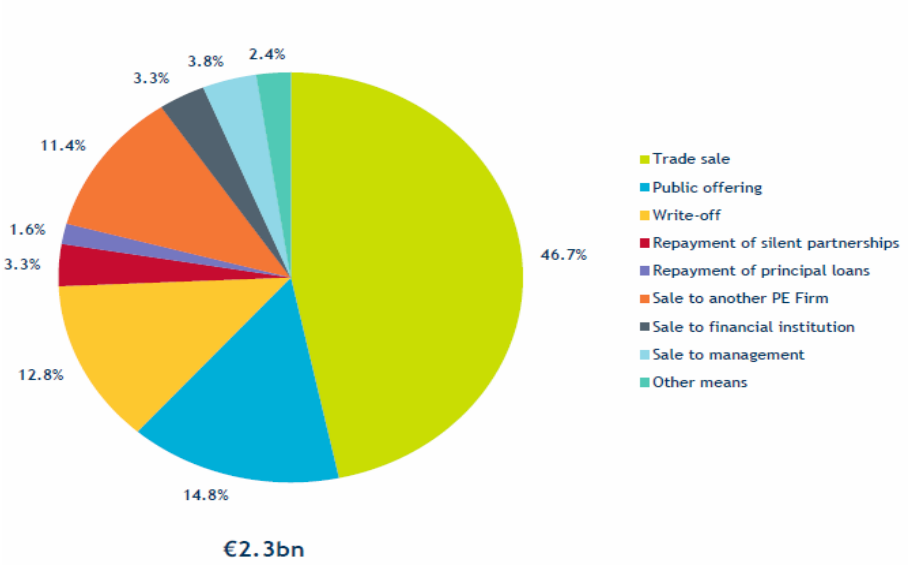
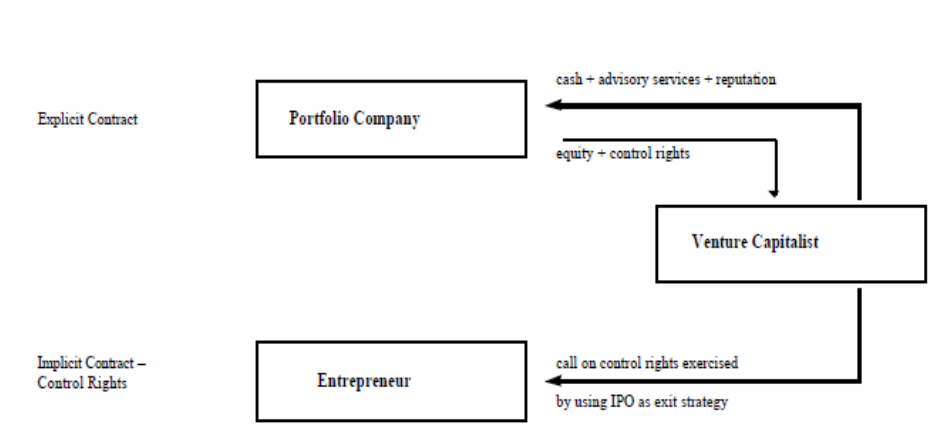


Figure 2.16: US Venture-backed exits by year (2007-2011); Source: Thomson Routers and National Venture Capital Association,

Due to cultural and historical reasons Europe has a bank-centered system and an underdeveloped stock market and powerful banks that play an important corporate governance role in monitoring management. When access to capital markets is limited, bank's as institutional investors gain the possibility to exercise higher influence over the investment decisions of the venture capital fund. The consequence is increase in the cost for the investee firm's capital.

Figure 2:16 Implicit and Explicit contracts between venture capitalist and entrepreneur; See: Black, Bernard, Gilson, Ronald, (1997), "Venture capital and the structure of capital markets. Banks versus stock markets", Journal of Financial Economics, Vol. 47



Underdeveloped capital and stock markets provide financial institutions (the sophisticated suppliers of capital) with a monopoly power, hence large banks with close ties to industry "siphon" profits and restrict investment by adoption of risk-averse, debt holder-oriented investment strategies- a situation that certainly hinders innovation and economic growth that are the main aims of promoting venture capital industry.

These assumptions are confirmed by statistics. Gompers [89] reports that venture capital funds in US earn an average 60% annual return on investment in IPO exits, compared to 15% in acquisition exits. However the 2008 financial crisis and the following recession affected adversely capital markets and consequently influenced as well the VC industry which suffered a systematic and remarkable decline in transaction size. The downturn influenced adversely as well the venture capital cycle, opening a "liquidity gap" in the earlier stages of VC financing, the reduction in the number of profitable exits led to low overall returns for funds' investors and the decrease in the number of listed high-tech firms disrupted the supply side of the VC industry, the innovative entrepreneurs[90]. The recent surveys even go further saying that the VC cycle is irrefutably broken[91]. As an answer to the aggravated conditions of the capital markets, trade sales have become the preferred exit option for many firms, especially in Europe[92]. Contrary to IPOs, trade sales offer immediate liquidity without onerous lockup periods, costly disclosure requirements and

89 Gompers, Paul, (1995), see supra note 3

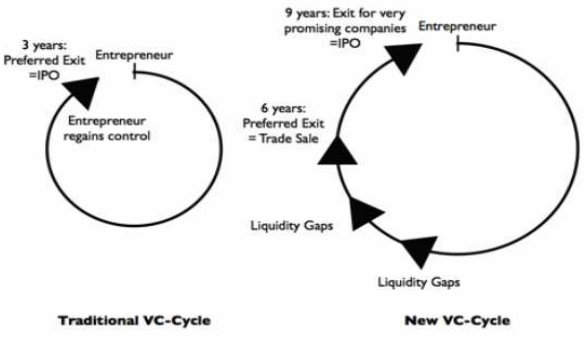
90 See: Helft, Miguel, (October 2006), "A kink in venture capital's gold chain", The New York Times, 7, available at: http://www.nytimes.com/2006/10/07/business/07venture.html?_r=1&pagewanted=all

91 Austin, Scott, (June 2009), "Majority of VCs in survey call industry "broken", Wall Street Journal, 29, available at: http://blogs.wsj.com/venturecapital/2009/06/29/majority-of-vcs-in-survey-call-industry-broken/

92 See: Rindermann, Georg, "Venture-backed IPOs on Europe's new stock markets: Evidence from France, Germany and the U.K", in Giancarlo Giudici and Peter Roosen Boom (eds.), The Rise and Fall of Europe's New Stock Markets, Amsterdam: Elsevier, 2004; see also: Schwienbacher, Armin, (2008), see supra note 52; see also the EVCA statistics, available at: http://www.evca.eu/knowledgecenter/statisticsdetail.aspx?id=412

obligations for venture capitalists to maintain board seats.[93] Perhaps most importantly, the dominance of trade sales as preferable exit leads to "new" VC cycle with only the best performing high growth companies being able to afford a listing. Also, the redefined cycle is extended with more timing elapsing between the "inception" of a firm, the first involvement of VC financing and the prospective exit (*see figure 2:18*). The consequence of the new trend caused by the financial crisis is the extended continuity of the VC cycle and opened "liquidity gaps" not only in the seed and early stages of the cycle, but also in later stage: in the Series "B" round of investment (approximately 4th year after the initial funding)[94].

Figure 2:18: Comparison between the traditional and "new" venture capital cycle, the extended timing of the new cycle and the liquidity gaps; Source: Mendoza, Jose, M., Vermeulen, Eric, P., M, (2011), "The New Venture Capital Cycle (part I): The Importance of Private Secondary Market Liquidity", Topics in Corporate Law & Economics 1, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1829835



2.1. "2007 crisis"- intensifying European venture capital's weak points

2.1.1 Traditional risk-averse behaviour of European investors and their preference of private equity

The venture capital sector in Europe is small (a niche) compared to other broader sectors of European investment funds industry. Within the broader range of Private Equity, venture capitalist account for only 10% to 15% of private equity fundraising and investment, depending of the year. In the period 2003-2010 funds, dedicated to venture capital amounted to 64 billion euro out of the total 437 billion euro raised by European investors in the wider field of private equity. Thus,

93 See: Jose, M., Vermeulen, Eric, P., M, (2011), "The New Venture Capital Cycle (part I): The Importance of Private Secondary Market Liquidity", Topics in Corporate Law & Economics, 1

94 Ibidem, pp. 2-3

venture capital accounted for only 14, 6% of the joint pool of private equity[95] (*see figure 2:19*). As long as investors' bias in favour of private equity[96] remains, available funds are not channeled to where they are most needed: to provide equity finance to innovative seed and start-up SMEs. The explanation why European investors shun away from VC class investment is the high levels of risk and severe information asymmetries that accompany the early stages of small and medium-sized innovative firms. It is often uncertain and challenging for venture capital managers to add value to the start-ups and create a positive internal rate of return for the investors. In addition, European VC funds generate lower return when compared to their US counterparties and secondly, they leg behind when compared to the private equity asset class (both in Europe and the USA); *see figure 2:20.* Consequently, investors would prefer to pour their money in more mature and established commercially successful companies that provide certain and higher returns and lower risk. As a result, European venture capitalists traditionally suffer difficulties in fundraising, a trend that not only hinders new VC funds to be launched, but also forces existing ones to change their investment strategy into illiquid assets at a much later stage of the portfolio companies' business cycle (which is already considered a private equity investment).

Figure 2:19: Private Equity and venture capital fundraising in Europe (2003-2010); source: European Commission 2011 Impact assessment, accompanying the Proposal for a Regulation of the European Parliament and of the Council on European Venture Capital funds, Commission staff working paper and EVCA

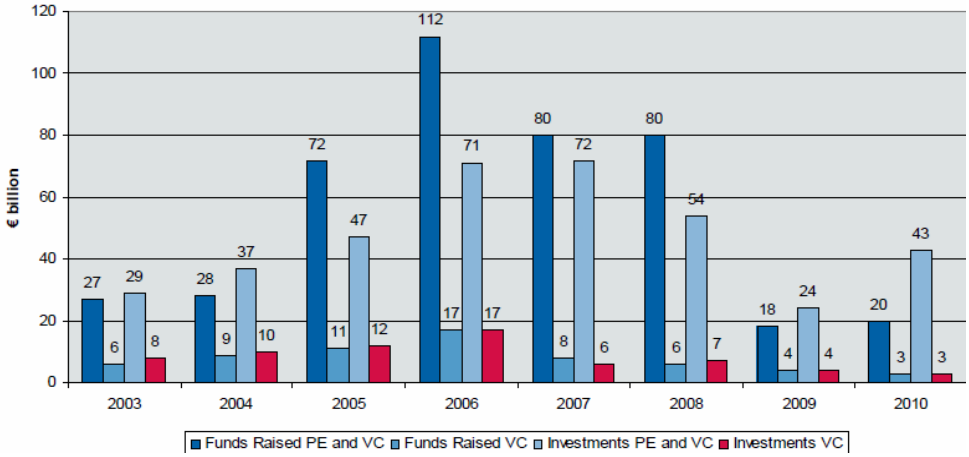


Figure 2:20: Performance of venture capital vs. private equity; source: European Commission 2011 Impact assessment, accompanying the Proposal for a Regulation of the European Parliament and of the Council on European Venture Capital funds, Commission staff working paper, pp. 14, available at: http://ec.europa.eu/internal_market/investment/docs/venture_capital/111207-impact-assessment_en.pdf

95 Source: European Commission 2011 Impact assessment, accompanying the Proposal for a Regulation of the European Parliament and of the Council on European Venture Capital funds, Commission staff working paper, available at: http://ec.europa.eu/internal_market/investment/docs/venture_capital/111207-impact-assessment_en.pdf and EVCA statistics

96 Author's note: a sector that invests in mature companies and organizes leveraged buy-outs

INVESTMENT HORIZON RETURNS FOR PERIOD ENDING 31ST DECEMBER 2010						
		1 YR	3 YR	5 YR	10 YR	20 YR
ALL VENTURE	EUROPE	17.36	-4.26	-1.57	-3.78	0.29
	USA*	17.94	0.62	1.16	-6.59	21.08
ALL BUYOUTS	EUROPE	20.87	-4.48	6.02	8.39	11.91
	USA*	26.26	1.16	2.35	-0.25	7.49
ALL PE	EUROPE	20.66	-4.34	4.33	4.59	9.32
	USA*	23.83	1.82	2.67	-1.68	10.63

2.1.2 Stringent legal framework

By definition, banks and insurance companies are some of the greatest contributors of funds to the supply side of the VC industry in Europe (or at least they used to be before the recession occurred[97]). However, because of the financial crisis, they now face stricter rules (Basel III[98] and Solvency II[99]) on committing money in riskier asset classes, such as venture capital. There is a potential risk that this recent legislative change in the prudential regulation framework further to transform venture capital in a less attractive investment class, leading banks and insurance companies to scale back sharply their contributions to VC fundraising. Hence, the Commission, as part of a wider reflection on long-term investments, will carry in 2012 a survey on the impact of prudential legislation on VC industry, jointly by the European Banking Authority and the European Insurance and Occupational Pensions Authority[100].

2.1.3 EU venture capital funds are below the optimal size

The average size of a typical European venture capital fund is significantly below the optimal size for this type of funding instrument (*see figure 2:20*). The average size of a typical European VC fund is 60 million euro[101]. According to a the recent Ernst & Young survey, the average efficient size of a venture capital fund is not less than 230 million euro. What is more, the optimal specialization can be achieved with funds in the range between 230 to 380 million euro[102]. The situation remains the same when assessed from the perspective of the overall portfolio of venture

97 Author's note: see supra Chapter II, pp. 22-25

98 Capital Requirements Directive 2010/76/EU

99 Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance

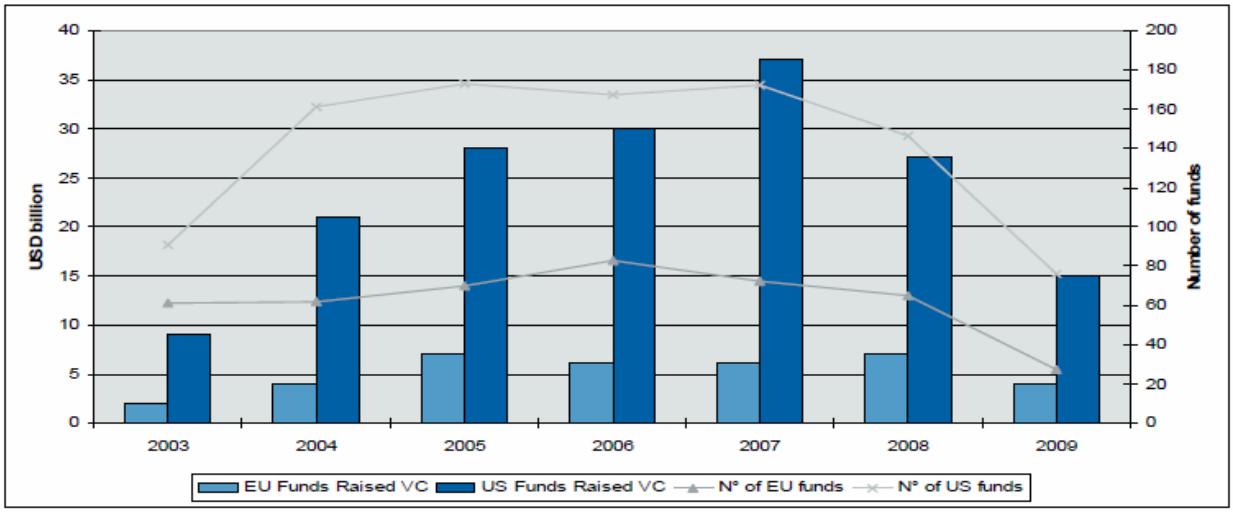
100 "An action plan to improve access to finance for SMEs", Communication from the Commission to the Council, to the European Parliament, to the Committee of the Regions and to the European and Social Committee, COM(2011) 870 final, available at: http://ec.europa.eu/enterprise/policies/finance/files/com-2011-870_en.pdf

101 European Commission 2011, see supra note 95

102 Ernst& Young, "Back to basics, Global venture capital insights and trends report 2010", available at: http://www.ey.com/Publication/vwLUAssets/VC_insights-and-trends-report_2010/$FILE/VC_insights-and-trends-report_2010.pdf

capital funds managed by a particular fund manager[103]. Consequently, VC funds cannot depend on economies of scale and scope as their overseas counterparties. This negative trend has been already deepened by the 2007 crisis, because of the "drying out" of sophisticated investors' funds available for investing. However, it seems that worldwide the recession has affected more severely larger VC funds as every second fund larger than $500 million is decreasing its level of assets under management in comparison with only 1/3 of the funds managing less then $ 100 million[104].

Figure 2:20: Amount of venture capital funds raised in Europe vs. USA (2003-2009); source: Ernst& Young, "Back to basics, Global venture capital insights and trends report 2010, available at: http://www.ey.com/Publication/vwLUAssets/VC_insights-and-trends-report_2010/$FILE/VC_insights-and-trends-report_2010.pdf



2.1.4 Fragmentation of the European VC market

Twenty seven different cultures, languages and regulatory regimes compete in the EU, compared with a single unified venture capital market in the US (and a single culture and language). Current fragmentation of European VC market discourages smaller venture capital managers from raising capital on a European basis. Capital sources remain confined to national investors- for venture capital funds domiciled in smaller European countries this will lead to a narrow fundraising base. Hence, such funds do not have access to a large, liquid and integrated financial market and face difficulties in reaching economies of scale and scope. The cumbersome and costly formalities that a venture capitalist meets if engaging in cross-boarder fundraising may outweigh what a small-scale fund manager can afford, both in relation to financial and human resources. The final result in Europe is the springing-up of too many small funds with a suboptimal amount of assets under management and in consequence, suboptimal supply of capital per Portfolio Company. This phenomenon can be really severe in small European countries or these that struggle to establish

103 See supra note 95

104See: 2009 Global Venture Capital survey, DTT-TNT industry group, supra note 64

their venture capital industry (the Central and Eastern European countries). Consequences of the VC market fragmentation can be summarized as follows:

1. Venture capital activity, both in terms of asset management, fundraising and fund domiciles remains concentrated in the four big Member States (United Kingdom, Germany, France, Italy), plus the Netherlands and the three Nordic countries (Finland, Sweden and Norway).

2. The average size of financing provided per portfolio company is thinly spread. As consequence of being below the optimal size, European funds invest only 20% of their US counterparts but support nearly twice as many companies. What is more, between 1990 and 2005, US fund's average investment per company amounted to around € 4 million, while the European average remained at € 2 million throughout this period.[105] As Clarysse and Heirman prove, VC- backed firms which receive too little money perform much worse than innovative companies that try to develop their business model without VC involvement at all; thus insufficient availability of funds clearly impacts adversely overall VC performance[106]. As a conclusion, the demand for VC finance in Europe far exceeds the supply.
3. The legislative formalities and different cultures hinder growth and innovation potential as usually fundraising/ investing is denied due to high transactional costs

2.1.5 Trade sale as the traditional divestment strategy

As a bank-centered system Europe's investors and managers have a different attitude to IPO exits. Traditionally, European stock markets have been "*unwelcoming*" for fast-growing innovative start-ups without a "*proven track record*"[107]. The typical company which lists is established, operates in a mature sector and goes public not because it needs new capital for investment[108]. There is no demand in the European capital markets for SMEs shares, hence no liquidity and no demand for start-ups willing to go public. Another explanation of the predominance of trade sales as an exit in

105 Lerner, Josh, Pierrakis, Yannis, Collins, Liam, Biosca, Albert Bravo, (June, 2011), "Atlantic Drift - Venture Capital performance in the UK and the US", Research report, see section 4.1, available at: http://www.nesta.org.uk/library/documents/AtlanticDrift9.pdf

106 Clarysse, B., Knockaert, M., and Wright, M. (2009). Benchmarking UK venture capital to the US and Israel; What lessons can be learnt?", survey British Venture Capital association

107 See: Blass, Asher, and Yishay, Yafeh (2000), "Vagabond Shoes Longing to Stray: Why Foreign Companies List in the United States," Journal of Banking and Finance, 25(3)

108 See: Pagano, Marco, Panetta, Fabio, Zingales, Luigi (1998), "Why Do Companies Go Public? An Empirical Analysis,", Journal of Finance, 53 (1) 27-64;

Europe is the absence of preferred stock as a really powerful contractual mechanism for aligning the interests between the venture capitalist and the entrepreneur in a case of an IPO. Here must be compared the contractual convenience of preferred stock over the convertible debt and common stock as the final valuation of the stock price takes place ex post at the time of the exit at more fair rates for both the entrepreneur and venture capitalists.

The main reason that hinders the IPO exit becoming more preferable in Europe is the fragmentation of European capital markets that restricts liquidity and the onerous system of previous notifications, registration procedures and prospectus rules different for every country. European stock markets are sluggish and the trade-sales provide the venture capitalist and its investors with immediate exit, saving them from the trouble of lock-up periods. However, as the recent EIF survey proves in practise for the period 2005-2009 despite the fact that rade sales remain the most important exit route, IPOs are a significant exit route, accounting for around 13% of the dataset, and of these the overwhelming majority took place on exchanges in Europe[109]. Something more, as the trends in the global capital markets are changing and now is possible to divest via the new cross-border Private Secondary markets[110], but European investors seem reluctant to use this opportunity[111]. Hence, the fragmentation hypothesis may indirectly explain some of the weaker performance of European VC; in so far as it discourages investment (i.e. the impact is seen through the impact on investment activity). Maybe the real explanation for the lack of interest in IPOs is the bank-centered ecosystem in Europe and the absence of preferred stock, explained by Black and Gilson's theory of "implicit contract over future control"[112].

2.2. Public policy for Venture capital in Europe

In order the policy objectives set by the Europe 2020 strategy[113] to be met, European Commission's policy focuses on three main areas:

1. Harmonization of Member States' legislation in the field of venture capital investments by removing obstacles to cross-border investments[114]. In the Single Market Act (SMA)[115] was

109 Kelly, Roger, The performance and prospects of European Venture capital, working paper 2011/09, EIF Research& Market Analysis, available at: http://www.eif.org/news_centre/publications/ eif_wp_2011_009_EU_ Venture.pdf

110 See: Mendoza, Jose, M., Vermeulen, Eric, P., M, (2011), see supra note: 93

111 See: supra note: 109, pp. 13

112 See: supra note 83

113 Available at: http://ec.europa.eu/europe2020/index_en.htm

pronounced that by 2012 venture capital funds legally established in any Member State must be able to raise capital from eligible investors throughout the EU. In addition, Member States were invited to ensure that inconsistencies in tax treatment of venture capital investments do not lead to double taxation which would hamper cross-border venture capital investments[116].

2. Fighting with the fragmentation of capital markets in Europe by creating specific rules on "private placement" of venture capital funds' investment interests and common understanding of what constitutes VC funds in Europe. The Commission's impact assessment observed that there is a *prima facie* case for action at EU level and these conclusions subsequently fed into the Commission proposal of April 2009 for a Directive on Alternative Investment Fund Managers (AIFMD)[117].

All the measures pursued by the Commission can be defined as *"setting the table"*[118] or indirect influence over the venture capital ecosystem.

3. The Commission recognized the lack of equity finance of European SMEs and consequently created facilities for venture capital investments into innovative SMEs that will address the market gaps, caused by the recession.

The current generation of the venture capital facility is the "High Growth and Innovative SME facility" (**Growth and Innovation fund (GIF**). It falls under the EU's **Competitiveness and Innovation Framework Programme 2007-2013** and is implemented for the Commission by the European Investment Fund (EIF) on a trust basis. The GIF's objective is to improve access to finance for the start-up and growth of SMEs, and investment in eco-innovation**.** This objective is achieved by investment into venture capital funds which then use these resources and resources from other investors, and also their technical expertise, to: contribute to the establishment and

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114 See: Communication from the Commission on Removing obstacles to cross-border investments by venture capital funds COM (2007) 853 final, 21.12.2007), available at: http://ec.europa.eu/enterprise/newsroom/ cf/ getdocument.cfm?doc_id=1021 ; Commission summary report 2009: Cross-border venture capital in the European Union, available at: http://ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?item_id=4053&tpa_id=127&lang =en

115 Available at: http://ec.europa.eu/internal_market/smact/docs/20110413-communication_en.pdf

116 See Review of the "Small Business Act" Europe, p.11 http://ec.europa.eu/enterprise/policies/sme/small-business-act/files/sba_review_en.pdf ' 23 February 2011 and also Annex III: Summary of cross-border tax problems of venture capital funds in Impact Assessment 2011, see supra note: 95

117 Author's note: The AIFMD was formally adopted in June 2011 (2011/61/EU), available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:174:0001:0073:EN:PDF

118 A term used by Josh Lerner in his book "Boulevard of Broken Dreams: Why Public Efforts to Boost Entrepreneurship and Venture Capital Have Failed- and What to Do about It", Princeton University Press, 2009, Princeton, New Jersey, chapter 5

financing of SMEs and the reduction of the equity market gap which prevents SMEs from exploiting their growth potential.

On 29 June 2011, the Commission presented its proposal for a new **financial framework 2014-2020**. Access to SME finance will be provided through innovative financial instruments which are financed from a range of programmes targeting different policy areas. First, with a dedicated **"Programme for competitiveness and SMEs"** amounting to 2.4 billion euro, SMEs will be supported through an equity facility for growth phase investments and through a loan facility to cover loans for SMEs. Second, under the new **Research and Innovation Framework Programme** called ***"Horizon 2020"*** with a total proposed amount of 80 billion.

The European Investment bank will continue supporting the growth of SMEs through the **European investment fund (EIF**) by an enlarged EIB Risk Capital Mandate[119]. EIF is structured as "fund-of-funds" and it is a typical European investment company. It supports indirectly SMEs in the EU and Turkey by investing in venture and private equity funds. The Fund co-invests "*parri Passu"* with the private investors in its portfolio of funds. Usually, the participation in form of equity is below 50%. EIF's shareholders are the EIB (majority shareholder with 62.1%), European Commission (30% stake) and 24 big financial institutions like (7.9%)[120].

3. PUBLIC SECTOR'S ROLE IN PROMOTING VC

Anyone looking at the determinants of the European venture capital industry and comparing it to the seminal US model can conclude that active government's involvement in the venture capital industry can be extremely useful when dealing with possible problems that may occur when the VC market is underdeveloped or immature or there are no properly functioning capital markets that can provide the crucial IPO exit.

To begin with the core reason of government's involvement in venture capital industry is generating "policy return" comprising "social return" or "environmental return". The economic theory suggests that by subsidizing research and development activity governments can generate positive externalities (spillovers) for other firms and for the society as a whole[121]. These spillovers

119 See: European Investment Bank's Risk Capital Mandate Investment Guidelines, version of March 2006, available at: http://www.eif.org/attachments/publications/venture/RCM_Investment_Guidelines_March_2006.pdf

120 Author's note: data taken from the http://www.eif.org/who_we_are/index.htm

121 See: Jaffee, Adam, (1996), "Economic analysis of research spillovers implications for the advanced technology program", Washington, Advanced Technology Program, National Institute of Standards and Technology, U.S. Department of Commerce

can take separate forms, such as introducing imitations by competitors, developing of complementary products or introducing new ones to the consumers. In his study Griliches[122] proves that usually the social rate of return of innovative young firms exceeds the private rate of return by a considerable amount (probably between 150-200% of the private rate of return). Yet measuring the social outcome of public sector's strategies on VC cycle is controversial and not a strict and precise science. The economic boosting effect of venture capital is closely related to the problem of the so-called "market failure" problem observed in venture capital supply. The presumption is that private sector does not provide sufficient capital to the innovative firms in the early stages of their life and that the governments can act proactively and correct this situation by identifying promising investment options and drawing the private sector's willingness to invest in the companies concerned by providing the proper incentives. Market failure is defined as "*funding gaps and market inefficiencies*[123]*"* inherent in the private markets. The *"capital demand gaps"* are predominant in the early phases of life-cycle of high-tech firms- in the range of *USD 100 000 to USD 2 million*. This range is the primary target of the so-called *business angels*, and institutional venture capital investors tend to withdraw from it to an increasing extent[124]. Its bottom limit is represented by funds to be raised via the family and friends of the entrepreneur, while the ceiling is the lowest limit where professional venture capital investors find it worth investing. In Europe, the corresponding limits are lower: from USD 100 000 to 500 000, but USD 25 000 or USD 1 million as minimum or maximum is known either. Lately due to the capital markets shake a new financing gap emerged in the USA[125]. Since the interest of the venture capital industry has been shifting in favour of financing companies in a later life-cycle stage, while that of informal investors remained under the USD 2 million limit, a new capital gap occurred at *USD 2 to 5 million (see figure 3:1)*- a major problem for young high-tech entrepreneurial firms. Of course, business angels and corporate venture capital already co-operate to cover the more marked capital demand of early transactions and often even associate with institutional venture capital investors[126].

Figure 3:1: The venture capital cycle after the financial crisis and the "capital gaps", source: International Business Law I seminar lectures, Handouts lecture No 10, held by professor. Eric P.M. Vermeulen, Tilburg University 2011

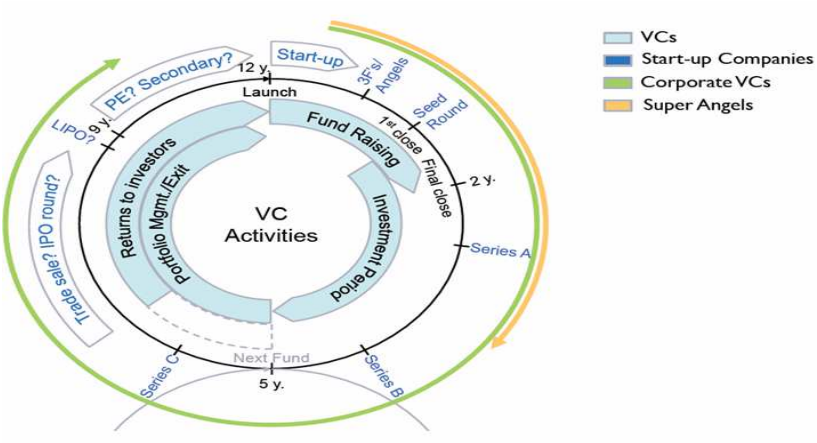
122 See: Griliches, Zvi, (1999), "The search of R&D spillovers", Scandinavian Journal of Economics, 94, pp. 29-47

123 Mayer, Thomas, (2007), "The Public Sector's Role in the Promotion of Venture Capital Markets", Development Bank of Japan; Hitotsubashi University, working paper, p.9

124 Sohl, J.E., (2003), "The US Angel and Venture Capital Market: Recent Trends and Development", Journal of Private Equity, Vol. 6, (2)

125 See Chapter II, pp. 34-35

126 See: supra note 95



As *"market inefficiencies"* refer to situations where costs or benefits, for example impact on the innovation, are not fully reflected in the market price and the price does not communicate society's desires and constraints accurately. Such market failure is seen as the main reason why apparently promising start-ups and innovation initiatives with high growth potential are unable to obtain external financing at market conditions[127]. In response to this market's inefficiency, governments are willing to provide VC funds that generate desirable policy benefits ("social return") in addition to being potentially underpriced. However, addressing the failure by public involvement can be hard since there is no risk-adjusted pricing mechanism for the VC industry[128].

Governments' involvement in venture capital industry is based on the "principle of additionality"[129]: its capacity to provide additional finance that would have been unavailable otherwise or facilitate financing on more favorable terms in order certain policy return to be achieved, or channeling sources in more attractive conditions in order to be established well-working venture capital system. Governments can allow themselves to address market failures and liquidity gaps since they allocate taxpayers' money and are able to bear more risk as investors. What is more, governments can consider investing in small VC funds that are usually neglected by institutional investors due to the high relative administrative burden.

According to the theory[130] governments' involvement in the fund managers' due diligence is desirable and efficient, because other investors can free-ride on the information revealed. Public sector limited partners can signal and certify that investing in the innovation ecosystem is safe. They act as *"honest brokers"* to spread industries' best practices as well, because they are not real

127 See: supra note 95

128 See: Murray, G, Marriott, R., (1998), "Why has the Investment Performance of Technology-Specialist, European Venture Capital Funds been so Poor?" Research Policy. No. 27. pp. 947-76

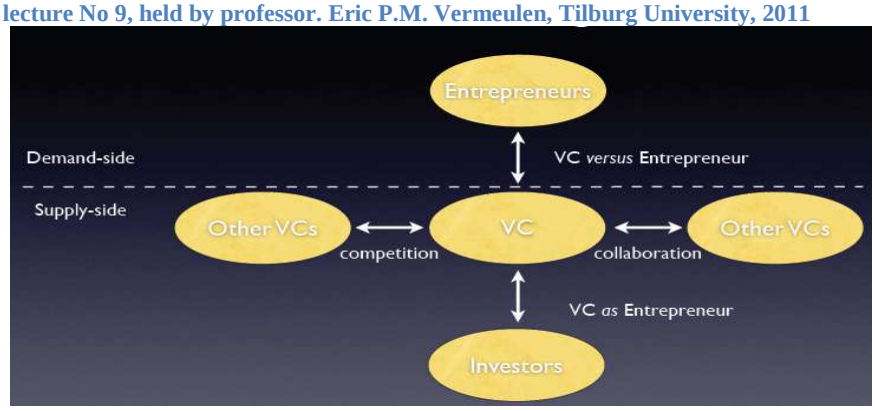
129 Author's note: In most jurisdictions is called "additionality" or „added value", whereas in North America the term "incrementality" is used.

130 See: Lerner, et al. (2005), "A Study of New Zealand's Venture Capital Market and Implications for Public Policy". Report to the Ministry of Research Science & Technology. LECG Limited

competitors with the private venture capitalists and have no *"trade secrets"*[131]. This is the so-called "certification theory" of public authorities.

The Public sector is able to promote the venture capital ecosystem directly or indirectly. The first one occurs when government acts as a venture capitalist by itself, creating different types of funds and assuming the role either as a general partner or a limited partner, or founder of the investment company[132]. The later one is when government pursues initiatives to stimulate and create a more hospitable environment in which entrepreneurs and venture capitalists can operate. This is an intervention that Lerner calls *"the "neglected" art of setting the table'*[133] In economic terms, the initial interventions can be seen as boosting the demand for venture capital and direct involvement increases the supply side of the industry (*see figure 3:2*).

Figure 3: 2: The model of supply/demand side of venture capital industry, source: International Business Law I seminar lectures, Handouts lecture No 9, held by professor. Eric P.M. Vermeulen, Tilburg University, 2011



In situations where the VC ecosystem is underdeveloped, the government must firstly promote the equilibrium between the supply and demand side and the stability of the financial intermediaries[134]. For example, in some countries VC funds are yet to be created and the public authority has to attract institutional investors to pool their money into this asset class by giving them the right incentives[135]. In other states the demand side is missing and before there can be a market opportunity for the venture capitalists, there has to be established a class of entrepreneurs and innovation-related flow of deals, otherwise "pouring" taxpayers' money by the governments will be rendered useless. In fact, it is the "simultaneity problem" that must be solved: three inputs are necessary to the engineering process: capital, specialized financial intermediaries and deal-flow

131 Ibidem

132 This is usually the case with European Venture capital funds. For brief explanation of European fund's structure see chapter II, pp. 26-27

133 See: Lerner, Josh, (2009), Boulevard of Broken Dreams, supra note 118, chapter 5, pp. 89

134 Author's note: according to Meyer, Thomas, (2007), supra note 123

135 Author's note: such was the case with New Zealand: the venture capital industry was missing at all, but with the right measures government succeeded in creating VC ecosystem. The Yozma programme in Israel succeeded in establishing well-functioning VC industry, because aligned properly the public and private interest.

of innovative ideas[136]. Each of these will emerge if the other two are present, but non will occur in isolation of the others. Public authorities must take into account at what stage of its evolution is the current VC market, because every stage requires different government responses. However, Avnimelech and Teubal[137] provide other point of view: that without a crucial mass of innovative ideas and entrepreneurs the VC industry can not be established, no matter of the availability of funds at the supply side. Consequently, simultaneity theory works only in later phases of the development of the VC industry. With increasing the maturity of the VC market the focus of the government support is changing from broad indirect measures to create and improve the VC environment (like encouraging entrepreneurial activity by tax or better education) and giving incentives to limited partners to step in the countries' VC industry, throughout promoting fund managers, and finally down to financing specifically targeted companies as economic operators[138]. At the outset it must be said that initiatives where government deals with simultaneity problem by both providing capital and itself acting as a financial intermediary are likely to fail. The reason is that public authority can not be a substitute to a specialized financial intermediary familiar with the "double-moral hazard" and information asymmetries[139], inherent in financing high-technology start-ups[140]. Direct involvement in investing by government agencies carries the material risk of market distortion through potential misallocation of capital and the consequent "crowding out" effect[141]. Other problem is the so-called "cherry-picking"[142]- by offering more "favourable" investment conditions (because public authority, relying on the taxpayers' money can easily afford it) than does in effect on the market by investing in companies that private investors also would find attractive[143]. The second important argument against direct state intervention is based on the doubt whether government officials are able to choose the appropriate investment projects, especially having in mind their independent of the outcome of the project remuneration system that

136 Gilson, Ronald J., (2002), "Engineering a Venture Capital Market: Lessons from the American Experience", Stanford Law School, John M. Olin Program in Law and Economics, Working paper 248

137 Avnimelech, G. & Teubal, M., (2006), "Evolutionary Innovation and Technology Policy: A Four-Phase High Tech Policy Model", DRUID Summer Conference, Copenhagen, Denmark, June 18-20, 2006

138 Mayer, Thomas, (2007), see supra note 123, pp. 7

139 Author's note: for explanation see supra, chapter I

140 Gilson R. J. (2002), see supra note 136

141 See: Cumming, D. J., MacIntosh, J. G., (2006), "Crowding out private equity: Canadian evidence", Journal of Business Venturing, 21(5); Leleux, Benoît, Surlemont, Bernard, (2000), "Public versus private venture capital: seeding orcrowding-out? A pan-European analysis", Working Paper

142 Avnimelech, G, Teubal, M., (2006), "Creating venture capital industries that co-evolve with high tech: Insights from an extended industry life cycle perspective of the Israeli experience", Research Policy 35(10)

143See: Lerner, J., (1999), "The government as venture capitalist: The long-run effects of the SBIR program", Journal of Business, 72; Manigart, S. and Bauselinck, Ch. (2001), "Supply of Venture Capital by European Governments", Working Paper, 2001/111, Ghent University

hardly would encourage the proper incentives[144]. What is more, public intermediaries hardly can provide proper monitoring and the "non-monetary contributions" that add real value to the start-ups' portfolio. The German WFG experience is example of badly created structure that led to plain project selection, lack of incentives for the public officials to monitor and maximise the value of the portfolio[145]. Further, the entirely public fund/investment company tempted by political considerations will be financing larger and established firms then start-ups with uncertain future. There is also inherent tension between the "social gains" of such funds and the requirements of self-sustainability that state's authorities will adopt. For instance, the Finnish Industry Investment fund operated under the rule that its investments must be undertaken profitably, but bureaucrats interpreted this requirement that each year returns must be above the inflation rate[146]. This shows government's inability to understand venture capital process where regular and steady income flow is not possible. Moreover, civil servant's logic is incompatible with the portfolio-based thinking that requires uneven distribution of available funds[147]. Politics and venture capital differ also in their attitude to failure and bankruptcy. In venture capital write-offs are a means that helps venture capitalist to preserve and concentrate only into the truly potential start-ups, while for government an insolvency of a portfolio company would mean failure in achieving social returns.

Consequently, the involvement of commercially motivated private sector investors as "agents" on behalf of government "principals" is the predominant modus operandi nowadays[148]. The idea of the "hybrid" venture capital programmes is government's involvement to be *"subordinated to the executive commercial actions of experienced private sector investors"*[149]. Typically in Europe venture capital funds are structured as investment companies[150]. In this pattern government is involved as founder and main sponsor. The management can be delegated either to the fund by itself (by the board of directors, consisting of private sectors professionals) or more often provided to outside, separate Management Company that receives management fee for its services. Fund managers have licences for a certain period of years and are selected on a merit basis including their experience in early stage equity investing and raising private capital. The fund managers are responsible for all investment decisions, which are made on a commercial basis in accordance with

144 See: Leleux, B., Surlemont, B. and Wacquier, H. (1998), "State versus Private venture capital: cross-Spawning or Crowding-out? A Pan-European Analysis", Paper, presented at the Babson College-Kauffman Enterpreneurship Research Conference

145 See: Becker, Ralf, Hellmann, Thomas, (2002), "The genesis of venture capital: Lessons from the German experience", CESifo Working Papers series No 883, Sauder School of Business Working paper

146 Lerner, Josh, (2009), Boulevard of broken dreams, see supra note 133, pp. 116-117

147 Florida R. and Smith D. F. (1993), "Keep the Government out of Venture Capital". Issues in Science and Technology, 9

148 See: Murray, Gordon, Cowling, Marc, et al., "Government co-financed "Hybrid" Venture Capital programmes: generalizing developed economy experience and its relevance to emerging nations", Kauffman International Research and Policy Roundtable, Liverpool, 11-12 March 2012

149 Ibidem, pp.3

150 Author's note: See supra, chapter II, pp. 26- 27 for fund structures

their own investment practices, subject to the fund's program guidelines. If the hybrid fund is organised as limited partnership the government is a limited partner that just invests in the partnership. The governance of the fund is let to the GP- usually a private venture capital firm- that possess the full operational autonomy to achieve commercially attractive investment returns (of course in accordance with investment eligibility guidelines that the public authority had adopted). The general partner collects the carried interest and management fee, but the problem here is that the returns of the managing general partner of a governmental program are lower, as early-stage investments frequently raise smaller funds (which mean smaller income fees) and yield lower returns (leading to a smaller carry)[151]. Hence, the typical private sector scheme[152] will attract to the public programmes only less experienced managers with low opportunity costs.

Hybrid fund structures can vary from country to country, but basically practise has been proved that two main types of vehicles are successfully operating. The first one is the model of "equity enchasing program" where the government involvement (either by direct investment to the fund or acting as a guarantor to other funds raised) enables additional and cheaper funds to be raised via creating a leverage advantage to private investors (*see figure 3:3)*. Consequence of the global recession is the scarcity of funds and investors unwillingness to participate in highly risky and not profitable (as compared to private equity investments for example) venture capital industry[153]. As a solution, rather than forcing skilled investors to act against their own commercial interest (by committing money in areas of poor internal rate of return), government uses several mechanisms that enhance the expected returns of private limited partners, thus incentivising them to get involved into seed and early stage investing: i.e. *different timing of the investment drawdown of public and private investors, leveraging the returns to private investors with debt, capping the profits entitlement of public investor, buy-out option for private investors, down-side guarantee to the private investor for loss of invested capital[154]*. Incentives increase size of the fund, in such way dealing with the problem that European venture capital funds operate below the optimal size[155]. Government either invests 50/50 along with the private sector or is the single biggest investor at the start of the programme. This gives the hybrid fund the possibility to cover the establishment and transaction costs, thus achieving economies of small scale that usually funds above $100

151 Murray, G. C. and Marriott, R., (1998). "Why has the investment performance of technology-specialist, European venture capital funds been so poor?", Research Policy 27, (9), pp. 947-976

152 Author's note: the remuneration being in a form of annual management charge which is traditionally equal to 2, 5% of investor's initial commitments to the fund. In addition, the management company/team and the sponsor are commonly entitled to a "carried interest", typically up to 20% of the profits of the fund.

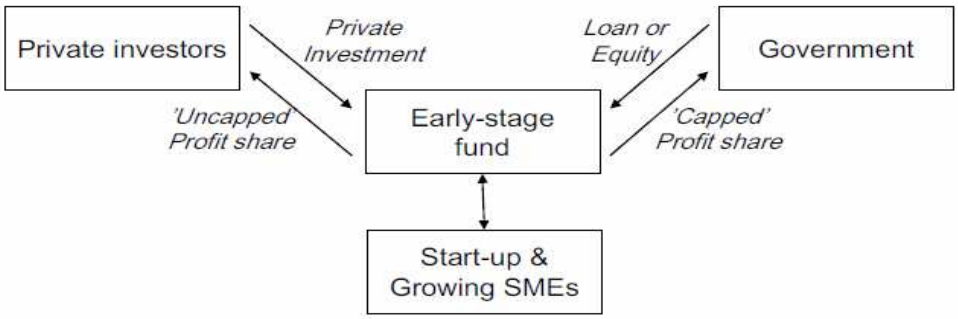
153 See: supra, Chapter II, 2.2. "2007 crisis"- intensifying European venture capital's weak points"

154 See: supra note 148, pp.4

155 See: supra Chapter II 2.2.3.

million enjoy threshold[156]. The majority of European venture capital funds have less then 60 million euro assets under management[157]. Australian's Innovation Investment fund (IIF)[158] and UK's nine Regional Venture capital funds[159] are example of government matching with the private investors' participation by committing more than 50% of the assets under management.

Figure 3:3: Typical model of the Equity Enhancement Program; source: Murray, Gordon, Cowling, Marc, et al., "Government co-financed "Hybrid" Venture Capital programmes: generalizing developed economy experience and its relevance to emerging nations", Kauffman International Research and Policy Roundtable, Liverpool, 11-12 March 2012



The second type of successful hybrid fund structure is the so-called "fund of funds" where the state and other investors form a pool of finance (the fund-of-funds (FOF)) that is subsequently allocated by the FOF manager to a number of independent VC funds. The government provides funds to an "arms length", independently managed, "quasi-governmental" organization- the fund-of-funds. In this structure government makes passive commitments in order to distance itself from the risks of the investments and ensure the independence of the FOF manager's decisions about which private venture capital funds to be chosen for investment. These commitments are structured usually as equity and the private VC funds have an option to buy out the investment at a nominal price plus interest, thus receiving the upside return above this amount. Selection of the portfolio companies is left exclusively onto the private venture capital funds' discretion; private venture capitalists bare the risk of losses and hence have the incentive to monitor the portfolio companies carefully. Two famous and successful examples of fun-of-funds structure are the Israeli Yozma programme[160] and the New Zealand Venture Investment fund (NZVIF)[161].

156 Dimov, D. and Murray, Gordon, (2008), "An examination of the determinants of the incidence and scale of seed capital investment activity by venture capital firms 1962-2002", Small Business Economics, 30(2), pp. 127-152

157 See supra note 102

158 See: http://www.innovation.gov.au/Innovation/Policy/Pages/InnovationInvestmentFund.aspx

159 For more information see: http://www.thecapitalfund.co.uk/links/regionalvcfunds/

160 See: http://www.yozma.com/home/

161 See: for more information http://www.nzvif.co.nz/entrepreneurs.html

4. CASE STUDIES

The sample of countries for the case study has been chosen, because it includes two bank-orientated systems (Germany and Japan) and a market-orientated system (Ireland), but still with quite active government involvement in the venture capital industry. The common feature of the three countries is that due to the financial crisis the traditional institutional investors has withdrawn their commitments from the venture capital industry and the government stepped in their place in order to fund the equity gap that has occurred, ensure that financing conditions for innovative start-ups are improved in a long term and give impetus to the economic growth and job creation. Public authorities engineer different kinds of hybrid funds with the cooperation of the private sector to achieve these aims. The other common feature of these three countries is that they both have existing venture capital market, but the VC and entrepreneurial eco-system is still at the borderline and far from the self-sustainable one in the USA, Israel, Canada and Hong Kong[162].

There are four factors that can indicate what is the relative position of a venture capital market in comparison with other states and show what is the condition of country's VC ecosystem: if it is unfavorable, borderline, nearly healthy or self-sustain[163]. These factors are: the legal and tax environment and venture capital investment as % of GDP[164].

As EVCA legal and tax benchmark shows[165] Ireland is much more ahead of Germany as fiscal incentives for the venture capital industry are concerned *(see figure 4:1)*. Firstly, pension funds and insurance companies are free to invest in VC (of course, within the limits set by the EU Directives). Secondly, the country provides a suitable domestic fund structure (limited partnership) that is transparent for tax purposes for both domestic and non-domestic limited partners. Thirdly, Ireland provides legal incentives to encourage investments in VC through the Business Expansion Scheme (in a form of tax deductions in a certain Irish unquoted companies). The country provides as a Fiscal R&D incentive a tax credit of 20% is respect of wide range of qualifying R&D expenditures and a corporate tax deduction at 12, 5 %, as well. Legislation allows performance-related incentives for VC fund managers. In practice, fund managers structure carried interest in such a way as to ensure that the stream of profit attracts a capital gains tax rate of 20%.

Figure 4:1: EVCA Legal& Tax Environment for venture capital, overview of results 2004, 2006, 2008; source: EVCA report on Benchmarking European Tax and Legal Environments 2008, available at: http://www.evca.eu/uploadedFiles/Benchmark.pdf

162 See: Cope, Graham, (2005), "Issues and Policy Framework for the Development of Self-Sustainable Venture Capital Markets in Europe", Master of Science in Banking and Finance, Class 2004, Luxemburg School of Finance and University of Luxemburg, chapter 4

163 Ibidem, pp.46

164 Ibidem, pp. 41

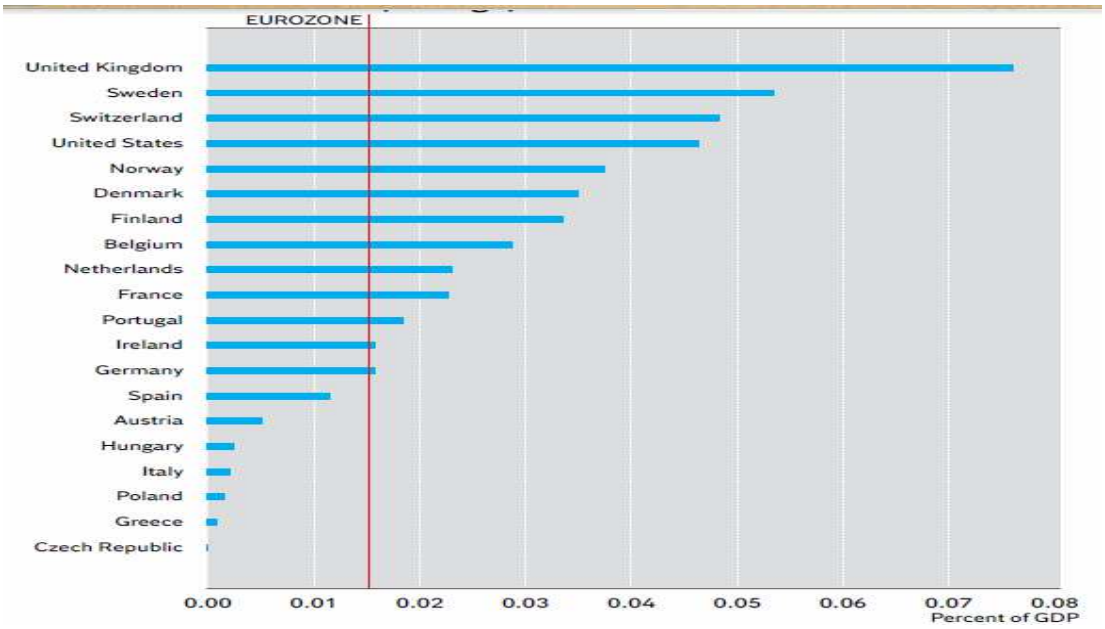
165 EVCA report on Benchmarking European Tax and Legal Environments 2008, available at: http://www.evca.eu/uploadedFiles/Benchmark.pdf

Results for 2008		Results for 2006(*)		Results for 2004(*)		Results for 2003(*)	
Country	Total score	Country	Total score	Country	Total score	Country	Total score
France	1.23	Ireland	1.27	The United Kingdom	1.26	The United Kingdom	1.20
Ireland	1.32	France	1.36	Luxembourg	1.49	Ireland	1.58
Belgium	1.33	The United Kingdom	1.46	Ireland	1.53	Luxembourg	1.67
The United Kingdom	1.45	Belgium	1.51	Greece	1.75	The Netherlands	1.79
Greece	1.46	Spain	1.52	The Netherlands	1.76	Italy	1.96
Spain	1.58	Greece	1.55	Portugal	1.81	Greece	1.96
The Netherlands	1.63	The Netherlands	1.60	Belgium	1.82	Total average	2.03
Portugal	1.63	Luxembourg	1.62	Hungary	1.86	Belgium	2.08
Luxembourg	1.65	Portugal	1.71	Italy	1.86	France	2.09
Lithuania	1.75	Italy	1.72	France	1.89	Sweden	2.09
Switzerland	1.76	Austria	1.74	Switzerland	1.95	Spain	2.17
Denmark	1.77	Denmark	1.75	Spain	1.96	Finland	2.25
Hungary	1.84	Hungary	1.83	Total average	1.97	Portugal	2.32
Total average	1.85	Switzerland	1.83	Norway	2.04	Denmark	2.36
Austria	1.87	Total average	1.84	Sweden	2.05	Germany	2.41
Latvia	1.88	Finland	1.91	The Czech Republic	2.12	Austria	2.53
Finland	1.92	Estonia	2.08	Poland	2.13		
Poland	1.95	Norway	2.08	Finland	2.30		
Italy	1.96	Sweden	2.12	Germany	2.37		
Sweden	2.02	Latvia	2.12	Austria	2.42		
Norway	2.03	Germany	2.15	Denmark	2.46		
Estonia	2.06	Poland	2.16	Slovakia	2.49		
Germany	2.18	Slovakia	2.17				
Cyprus	2.24	The Czech Republic	2.21				
Romania	2.27	Slovenia	2.26				
Slovenia	2.30	Romania	2.35				
Slovakia	2.33						

As venture capital investments as % of GDP are concerned the two countries are similar, just a little bit above the EU average (*see figure 4:2).* Still, the figures are incomparable with countries will self-sustainable VC market (Israel is the current number one with 0.18% of its GDP invested in VC and USA- 0.09%, of course due to the financial crisis the % in the year 2012 is quite lower from that it used to be in 2003 for example- 3, 17% for Israel and 1, 33 % for the USA[166]).

Figure 4: 2: Venture capital investments as a percentage of GDP, 2006-2009 (average); source: Global Benchmark report 2012, Confederation of Danish Industry, available at: http://di.dk/English/Shop/Productpage/Pages/isdefault.aspx?productid=6884

166 Word Bank GDP Report 2003



Another factor that indicates the condition of the VC market is the possibility of an exit via IPO. Ireland's venture capitalists prefer to exit via London Stock Exchange or through the biggest international stock exchange NYSE Euronext. German venture capitalists prefer the Deutsche Borse if at all choose IPO as an exit.

As a conclusion, it can be said that Germany and Ireland successfully have created their venture capital markets: they both have entrepreneurs and intermediaries, only the institutional investors must be introduced to venture capital as an asset class and encouraged to get involved in it. However, these markets are still young and still are lacking self-sustainability, thus active involvement of the governments is justified. In a time downturns VC firms need to be supported as the economic incentives of the private players are to switch to other types of investment (such as buyout and growth capital) as they are more lucrative and less risky. The best behaviour of the government in such situation is to be a leading investor who contributes the biggest piece of the commitments and with its participation certifies the funds he invests in and signals that the economic environment is hospitable for venture capital investments. In this stage of development of VC market governments can provide different incentive structures to the private sector: like upside leverage. Of course without abusing the leverage over VC fund managers to promote policies with unreasonably high risk[167].

167 According to: Meyer, Thomas, (2007), supra note 123, pp.6

4.1. The High-Tech Gründerfonds (HTGF)[168]

Germany's High-Tech Gründerfonds is a model of public-private partnership between the Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie (BWiT)), KfW Banking group and six big German corporations (Siemens, BASF, Daimler, Bosh, Carl Zeiss and German Telekom). The participation of private investors contributed to the market-orientated approach of the fund. The existing know-how in the sphere of financial engineering was taken into account when the fund was created[169] and the best practises of the private sector as well. The Federal government provided funds in the amount of 240 million euro and the private partners committed totally 32 million euro, so the fund total assets under management were 272 million euro. The background of its creation is interesting: after the bursting of dot.com bubble in the year 2000, institutional and corporate investors withdrew almost completely from the area of seed financing of high-tech start-ups and the VC market collapsed. Thus, HTGF was established for the revival of the seed market with a term of twelve years: five years investment phase followed by seven years divestment period. The duration of the fund follows successfully the life span of the venture capital cycle (and the prolonged VC cycle due to financial crisis[170]). The fund is incorporated as a limited liability company- GmbH (Gesellschaft mit beschränkter Haftung). It is a form suitable for hybrid investment vehicle as it offers limited liability to the partners involved. What is more, taxation on returns of investors is favourable as gains from sales of shares and gains from distribution of dividends are 95 % exempted from corporate income tax for corporate investors. Interest received by the GmbH is treated as income and taxed accordingly, applying the general corporate income tax rate of 26, 375% (including solidarity surcharge) and a trade tax around 16, 7%. The disadvantage is that it is not transparent in regard of taxes[171]. The High-Tech Grunderfonds is structured as a public-private vehicle that invests into the portfolio companies (*see figure 4:3*). Government is the lead investor and its involvement is direct fund participation. By contributing more then 50 % of the total assets under management (240 million from 272 million funds) government tries to encourage additional and cheaper funds to be raised via creating a

168 The information about the fund in this chapter is taken from: Geyer, Anton, Heimer, Thomas, et al., (February 2010), "Evaluierung des High-Tech Gründerfonds", Endbericht, Studie im Auftrag des Bundesministeriums für Wirtschaft und Technologie, Tehnopolis Group and Frankfurt School of Finance & Management, available at: http://www.bmwi.de/BMWi/Redaktion/PDF/Publikationen/Studien/evalueirung-des-high-tech-gruenderfonds-endbericht,property=pdf,bereich=bmwi,sprache=de,rwb=true.pdf

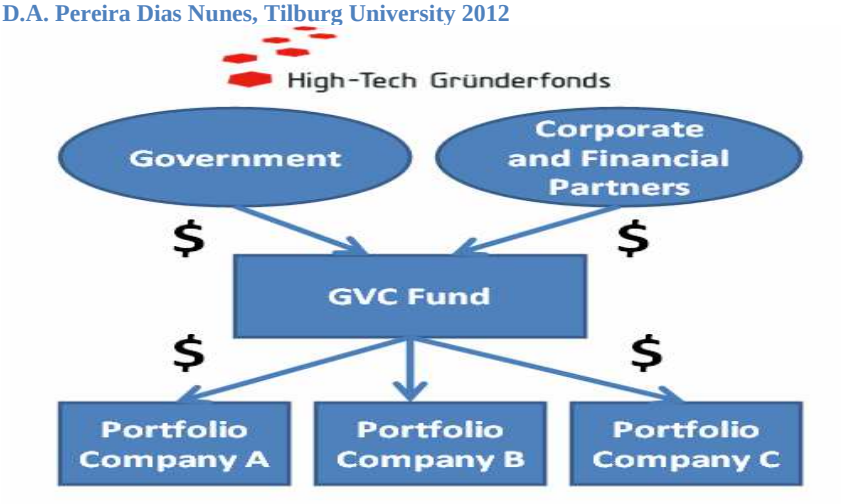
169 Author's note: the failed attempt for financial engineering with WFG fund; for more information see: Becker, Ralf, Hellmann, Thomas, (2002), "The genesis of Venture Capital: Lessons from the German Experience", supra note 145

170 See: supra Chapter II, pp. 34-35 and Mendoza, Jose, M., Vermeulen, Eric, P., M, (2011), supra note 93

171 See: Private Equity Fund structures in Europe, an EVCA Tax and Legal Committee paper, 2004, supra note: 70

leverage advantage to private investors. Thus, public authority by its willingness to invest, acts as a catalyst for attracting private funding to seed stage. In fact, government's investments serve as a kind of guarantee for the other limited partners since at least part of their value would be lost by the government should the fund not perform[172]. Private and public investors invest under identical conditions (*parri passu*[173]). This method of profit distribution increases the size and the scale efficiencies of the fund, but usually at the cost of introducing the corporate and financial partner with widely different interests from public ones. Investing *parri passu* does not have profit distribution effects, which in the case of HTGF may be is positive as it provides more then 80 % of the capital. There are no other profit distribution structures established between the government and the corporate/financial partners[174]. As the incorporation form is GmbH the governance structure of the Fund is quite flexible. It consist of two persons management team and three investment management committees which are responsible for the due diligence process, negotiation of the term sheet and actual distribution of the funds. As there is a supervisory committee it can be said that the Fund adopts the two-tier governance system.

Figure 4:3: Structure of High-Tech Gründerfonds, source: Legal Negotiation Workshop seminar lectures, Handouts lecture No 2, held by D.A. Pereira Dias Nunes, Tilburg University 2012



4.1.1 Participation conditions

Initial funding of the targeted company: HTGF participates with up to € 500 thousand per company. Financing instrument is a combination of equity share and debt. The fund acquires 15 % of the start-ups shares at their nominal price and the rest of the commitment is structured as subordinated shareholder loan with conversion option. The maturity of the loan is seven years. The interest is payable from the fifth year in order the liquidity of the young company to be preserved

172 See: Mayer, (2007), supra note 123, pp. 26

173 Author's note: other examples of parri passu profit distribution Australian IIF and Pre-seed fund and UK's regional venture capital funds.

174 Author's note: different kinds of profit distribution structures are explained in Murray and Cowling, see supra chapter III, note 148

in the initial years when it is likely the cash flow to be negative. HTGF becomes a minority shareholder in the start-up, a significant difference from the seminal US venture capital model. The reasons are various; it is a matter of the institutional infrastructures, such as capital markets, reputational markets, and the legal framework in a bank-centred system and different entrepreneurial culture in Germany. Venture capital industry cannot exist independently and is inevitably influenced by the capital market situation as a whole[175]. In Germany, stock ownership of publicly held corporations has been stabilized by bank cantered cross shareholding. Black & Gilson's propose[176] that management keeps their control based on dispersed stock ownership (as the USA one), but that proposition is lacking in European stock market after IPOs where usually a controlling shareholder (usually an institutional investor) purchases the majority stake.

One disadvantage of this HTGF's initial investment policy up to 500 000 euro is that such a contribution can be quite insufficient for start-ups in biotechnology, renewable energy and pharmaceutical sectors where reaching a "prove of concept" is quite demanding.

Entrepreneur's initial contribution to the financing must be at least 20% (10% in the former East German states, including Berlin) of the amount of HTGF's investment. Half of this amount can be provided by other investors (like business angels, regional seed funds, public and private investors) *see figure 4:4.*

HTGF can work in collaboration with other investors (usually other public schemes) to provide the start-up with side-investment up to € 200 thousands. The conditions of such funding will be the same as the HTGF by itself invests. This joint commitment in the first round of financing can not exceed € 600 000. The conditions of the side-investment are negotiated freely between the entrepreneur and the other investor, but with the agreement of the HTGF. The side-investments share of the whole funding can not exceed 50 %.

Follow-up financing: The maximum amount per company is € 1 million and the participation of the Fund over start-up's common stock can not exceed 25%. The follow up financing is again combination of debt/equity: i.e. in the form of open participation and subordinated loan. The terms and conditions of the follow-on financing are the same as those in the initial funding round. However, if private investors are prepared to invest more, than High-Tech Gründerfonds would subscribe, in certain circumstances, to the investment terms of these investors. So far, private investors provided a total of 200 million euros in funding rounds subsequent to the seed finance

175 Author's note: for more information and reasons why entrepreneurs in bank-centered system do not abandon control see: Shishido, Zenichi, (2009), "Why Japanese Entrepreneurs Don't Give Up Control to Venture Capitalists", Hitotsubashi University, Working Paper Series; The assumptions that the author makes can be applied also to the German reality.

176 See: supra chapter II for Black and Gilson's theory of "implicit contract over future control", pp. 31-32

from High-Tech Grunderfonds. By additional funding made available, HTGF certifies that the companies chosen have high-growth potential. This attracts private investor's willingness to participate.

The cap on the amount of the initial funding makes the investment too tiny. Certain sectors[177] would need more financing in order to reach the proof of concept of their product and also the "break-through" point where the business becomes profitable. As theory proves, VC- backed firms which receive too little money perform much worse than innovative companies that try to develop their business model without VC involvement at all; thus insufficient availability of funds clearly impacts adversely overall performance of the start-up[178].

One questionable provision of the HTGF investment terms is the anti-dilution provision. The subordinated loan is protected by anti-dilution provision in case of further rounds of financing. It allows the conversion of the loan (including the interest accrued) at the time of the follow-up financing into company's common stock. The conversion is done economically at the same conditions, to which the new investors participate in the subsequent financing, this is the so-called "full-ratchet basis". The problem is that it will be hard for the entrepreneur to find investors, independent from the HTGF network in case the Fund denies follow-up financing.

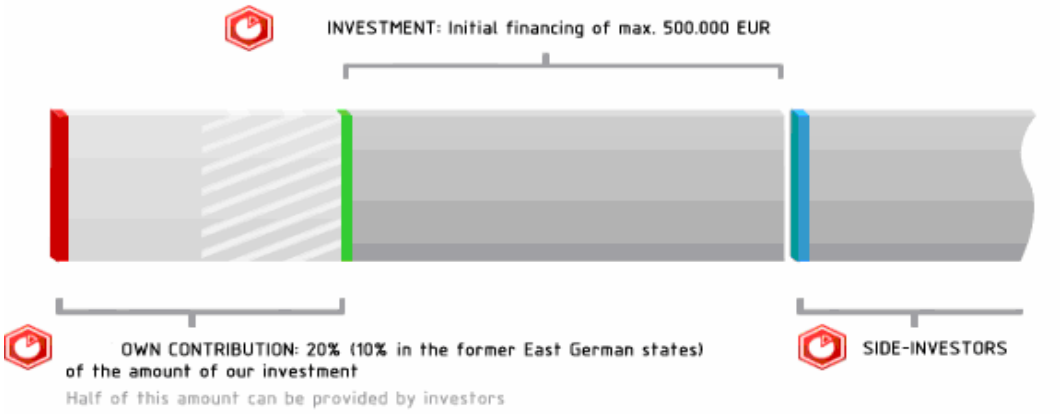
HTGF like private venture capital funds provides its portfolio companies not only with capital, but also with "non-monetary contributions" as guidance for the development of the firm's product and financial advice. The Fund built a network of high experienced professionals: angel investors, venture capitalists from other seed end early-stage funds, representatives from university and research institution spin-offs and consulting firms. Of course, HTGF's concept of coaching differs from the seminal USA venture capital model where the general partner monitors thoroughly and closely the portfolio company. In HTGF's case the assistance is provided "on request" and after paying a fee in consideration for the service. The help is provided only until the point where the young firm until follow-on financing has been obtained or until the enterprise is self-financing from cash flow. In contrast, US venture capitalist monitors the start-up quite longer until the point of the exit (usually this is the point the firm goes public). Hence, US entrepreneurs can enjoy longer the gainful collaboration with the experienced venture capital manager. Also, coaches provide assistance with operational and strategic matters, the establishment of relevant networks, help with acquisition of further financing, and advice on what necessary adjustments should

177 Author's note: such as: nanotechnology, renewable energy, drug development

178 Clarysse, B., Knockaert, M., and Wright, M. (2009). Benchmarking UK venture capital to the US and Israel; What lessons can be learnt", survey London: British Venture Capital association

business models undertake, while the "non-monetary" contributions of the US venture capitalist are brother in their scope.

Figure 4:4: Equity share of the entrepreneur, HTGF and other investors at the initial round of financing; source: http://www.en.high-tech-gruenderfonds.de/financing/financingterms



4.1.2 Investment criteria

The fund chooses its portfolio on economic criteria, but yet as a typical hybrid financial vehicle pursues social gains as: dealing with the market inefficiencies at the seed stage and "innovation spillovers" by promoting only technology-orientated start-ups with high growth potential. Therefore, the HTGF is wiling to finance projects that bear high technological and market risk and hence are not attractive for private venture capital. At the same time, the evaluation of the portfolio companies is made on the sound assessment of the risk profile; hence the candidate firm must satisfy the requirements of the fund's investment policy. Firstly, the start-up must have "*technological orientation*", meaning that the innovation has to be "challenging" and at a level *close to prove of concept* (prototype being ready to obtain a patent, utility model). What is more, all the IP rights must be protected exclusively and unreservedly and incorporated to the company. Other big group of criteria are connected with the "*market perspective*": the product/ service must possess distinctive selling features that lead to recognizable customer benefits (i.e. add value to the consumer and to the society as a whole). Third, the entrepreneurial team must possess the know-how and determination to carry the business.

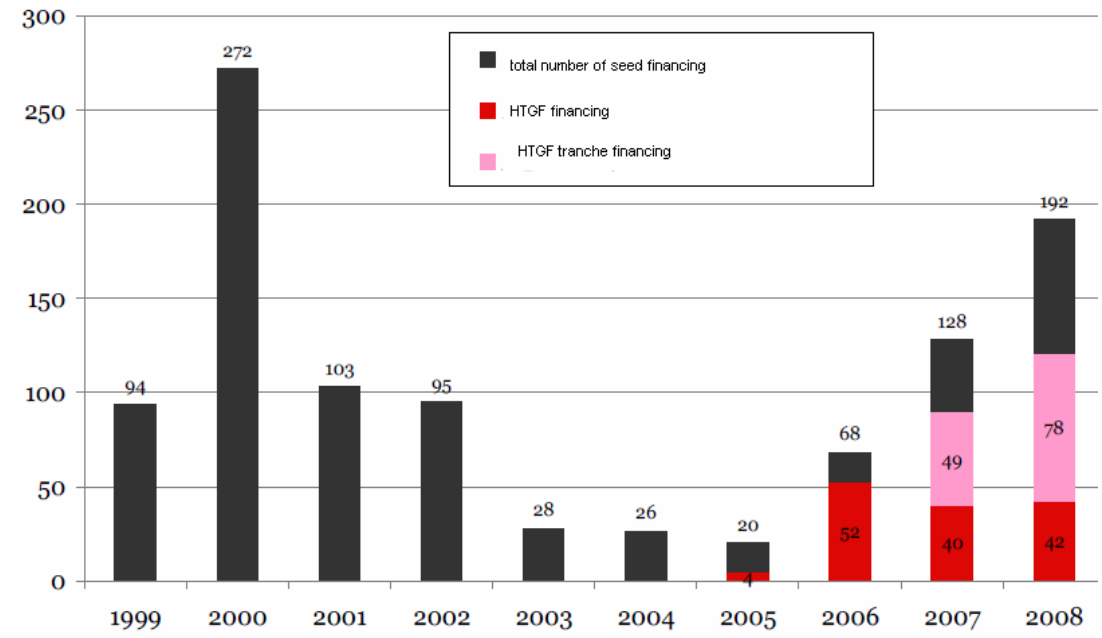
Interesting requirement is that start-ups seeking to qualify for investment must not be established more then a year ago. The rationale behind this decision is Fund's portfolio to consist only of companies in their seed stage. However, in the survey[179] practitioners (entrepreneurs and venture capitalist) consider this requirement as artificial: a company can be in its initial phase even after

179 See: supra note 168

one year from incorporation has passed. Problem is severe especially for R&D spin-offs from big corporations. What is more, such a requirement has the potential of not achieving the "social gains" objective since high-potential start-ups that deserve financing and fulfil all the other criteria may fell "off board".

As a conclusion, the result of the survey shows that HTGF operates in market segment where a severe and persistent funding gap exists. After its establishment HTGF become the most important source of funding for start-ups in their seed stage (*see figure 4:5*). As government instrument the Fund succeeds in supplying its portfolio companies not only with capital commitments, but also with the possibility to find subsequent funding from the private sector. What adds value of the HTGF is the wide network of venture and corporate partners that are ready to invest in seed-stage firms.

Figure 4:5: Changes in the number of seed investments in Germany in the years 1999 to 2008; source: : Geyer, Anton, Heimer, Thomas, et al., (February 2010), "Evaluierung des High-Tech Gründerfonds", Endbericht, Studie im Auftrag des Bundesministeriums für Wirtschaft und Technologie, Tehnopolis Group and Frankfurt School of Finance & Management, available at: http://www.bmwi.de/BMWi/Redaktion/PDF/Publikationen/Studien/evalueirung-des-high-tech-gruenderfonds-endbericht,property=pdf,bereich=bmwi,sprache=de,rwb=true.pdf



4.2. Ireland- the proactive government

Enterprise Ireland (EI) was established in 1998 as a merger of several different government agencies, aiming to have single customer interface which can offer tailored support for enterprises across the Ireland. The agency is still developing, but it is becoming increasingly effective in performing its support functions. Enterprise Ireland pursues innovative type of public-private

partnering in order to provide "smart" capital to support high-potential start-ups in view of economic recovery and growth. As centralized government agency, EI pursues wide range of measures to promote VC industry. It takes the "bottom-up" approach: the needs of every region are taken into account and the appropriate policy measure is adopted. What is more, Enterprise Ireland provides not only financing, but advice and manager capability development[180]. The structures used by the Irish government to deliver financial assistance to High-potential start-ups (HPSUs) are both direct and indirect and are focused on creating hospitable entrepreneurial eco-system: both at demand and supply side.

Direct policy measures do not rely on intermediaries and provide the funding directly to the intended recipients. Such programmes can be generally viewed as being demand-side measures. They never provide all the necessary financing needed by the recipient firm, but they increase the enterprises' survival rate, they create demand for subsequent fundings[181]:

- Incubators – direct program involvement in the establishment of incubators at or around universities and research institutions. In addition to financial resources, these programs provide advisory services, training, and operational assistance. An example is **New Frontiers** national entrepreneur development programme in collaboration with more than ten Technology institutes all around Ireland. Launched in February 2012, the New Frontiers Programme aims each year to support the creation of 100 high value, knowledge based, and Irish owned businesses[182].
- Grants and subsidies – programs offer these on an award basis, subject to fulfilment of the stated program criteria. An example is the High Potential Start-Up (HPSU) Feasibility Grant, which aim is to help entrepreneur to investigate the viability of a new export orientated business or proposition. The maximum grant funding available for a High Potential Start-Up feasibility study is 50% of eligible expenditures. The maximum level of grant funding currently available is €15,000[183]. Another initiative: Competitive Feasibility Fund for the North West Region provides grants for local (North West region) entrepreneurs to investigate the viability of a new significant growth orientated business. The maximum grant funding available for the feasibility study is 50% of eligible

180 See: Arnold, Eric, Kuusisto, Jari, "Government Innovation support for commercialization of research, new R&D performers and R&D networks, Technology Review 121/2002, available at: http://www.jinnove.com/ upload/documentaire/PP-fe-91.pdf

181 Dimov, Dimo, Murray, Gordon, "Literature Survey of Venture Capital Support Schemes in Europe", London Business School, Project IFISE (No. IPS029032PR)

182 See: http://www.enterprise-ireland.com/en/Start-a-Business-in-Ireland/Supports-for-High-Potential-Start-Ups/New-Frontiers-Entrepreneur-Development-Programme.html

183 Author's note: for the eligibility criteria, see: http://www.enterprise-ireland.com/en/Funding-Supports/Company/HPSU-Funding/HPSU-Feasibility-Study-Grant-.html

expenditures. The maximum level of grant funding is up to €25,000. Up to €200,000 in grant funding, in total, is available to successful applicants[184].

- Venture capital- in this case the government acts by itself as a venture capitalist by investing directly into the chosen portfolio of HPSUs (*see figure 4:6)*. The ownership of the government venture capital fund is 100 % held by Public sector entities. [185]. The "non-monetary contributions" of such funds are the guidelines provided in developing a market entry plan, expanding start-up's business network and securing partnership or strategic alliance with private venture capitalists. The Irish example of such fund is the Competitive Start Fund (CSF).[186] One noticeable drawback of the CSF is that it does not provide the opportunity private sector to commit capital alongside the public investment as it is the case with the Dutch N.V. Brabantse Ontwikkelings Maatschappij (BOM) and the New Zealand's Seed Co-investment fund. These funds can form co-investment syndicate with accredited private players, chosen by certain criteria. These programs encourage private sector cooperation using upside leverage as a profit distribution structure. This is achieved by the state funds assuming some form of subordinated and lower level investment return than that available to the private investors[187]. Such kind of direct funds bare the highest risk of failure, because public authority can not be a substitute to a specialized financial intermediary familiar with the "double-moral hazard" and information asymmetries[188], inherent in financing high-technology start-ups[189]. Direct involvement in investing by government agencies carries the material risk of market distortion through potential misallocation of capital ("cherry-picking") and the consequent "crowding out" effect[190].
- Other Schemes - these refer mostly to training, operations, and network support offered to young companies by the program agency in order to lower costs and/or increase survival rates. For instance, the Enterprise Ireland Mentor Network provides advice, guidance and support, to help the start-up accelerate growth and build management capability[191]. Another example is the Internet Growth Acceleration Programme (iGAP) is an intensive management development programme aimed exclusively at high potential internet/games

184 Author's note, for eligibility criteria see: http://www.enterprise-ireland.com/EI_Corporate/en/funding-supports/Company/HPSU-Funding/Competitive-Feasibility-Fund-North-West-Region.html

185 Murray, Gordon, (1999), "Early-Stage Venture Capital Funds, Scale Economies and Public Support", Warwick Business School

186 Author's note: for more information see: http://www.enterprise-ireland.com/en/funding-supports/Company/_HPSU-Funding/Competitive-Start-Fund-CSF-.html

187 Murray, Gordon, (1999), see supra note 184

188 See: supra, chapter I

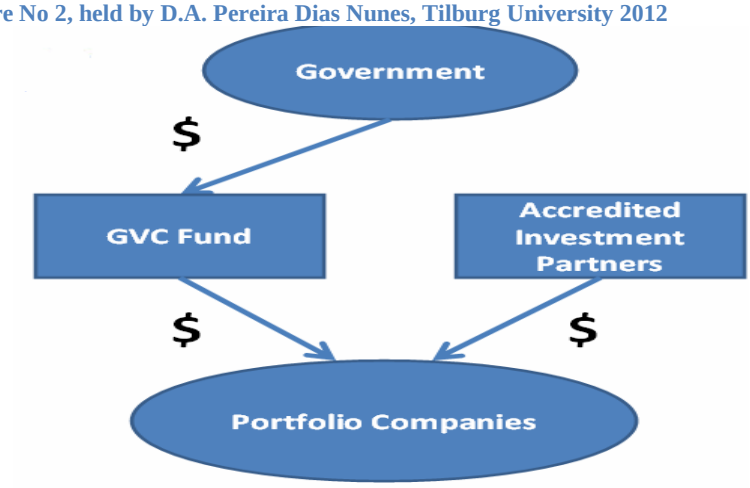
189 Gilson R. J. (2002), see supra note 136

190 See: supra note 141

191 Author's note: for more information see: http://www.enterprise-ireland.com/en/Funding-Supports/Company/_HPSU-Funding/Mentor-Grant.html

companies. The overall cost of iGAP is €10k per participating company and up to two individuals from each company can participate. 70% of the programme fee is funded by Enterprise Ireland[192].

Figure 4:6: A structure of direct government's investment in a start-up source: Legal Negotiation Workshop seminar lectures, Handouts lecture No 2, held by D.A. Pereira Dias Nunes, Tilburg University 2012



Enterprise Ireland has been investing in a range of Irish private venture capital funds as a limited partner through the Seed and Venture Capital Programme 2007-2012[193].

Separately to the Seed and Venture Capital Scheme Enterprise Ireland and Bank of Ireland and Allied Irish Bank plc have invested in a number of seed capital funds as limited partners. The main seed capital funds are:

- AIB Start Up Accelerated Fund – single sponsor is the Allied Irish bank plc with total commitments €22m and managing partner is the ACT Venture capital LP[194].
- Bank of Ireland Early Stage Equity Fund (total commitment €32m) is a joint fund incorporated as limited partnership, built with contributions from the Bank of Ireland, the University of Limerick Foundation and the government agency Enterprise Ireland (the limited partners). The general partner is Kernel Capital LP. Investment is made by way of equity and loan with an option to convert the loan (excluding any interest accrued thereon) at any time. The payment of the loan is postponed for 5 years from the date of advance save in certain limited circumstances and thereafter shall be repayable on demand; the loan ranks for repayment ahead of all other loans except those loans from a commercial banks.

192 See: http://www.enterprise-ireland.com/en/Funding-Supports/Company/HPSU-Funding/I-GAP.html

193 Author's note: for detailed information on the venture capital funds that obtained investments from the Programme see: Irish Seed and Venture Capital Programme, 2010 Report, available at: http://www.enterprise-ireland.com/en/Publications/Reports-Published-Strategies/Seed-and-Venture-Capital-Report-2010.pdf

194 See: http://www.actventure.com/index.php?option=com_content&view=article&id=323&Itemid=123

The interest will be payable on the fifth anniversary of the date of the loan or on conversion whichever first occurs[195];

- Bank of Ireland Start Up Emerging Sectors Equity Fund: Bank of Ireland acts as sponsor and limited partner with total commitment of €17 million. The Fund is managed by Delta Partners LP on behalf of Bank of Ireland[196].

The structure of all these funds is similar to the one depicted on *figure 4:3.* The difference with High-Tech Gründerfonds is that Irish funds are incorporated as limited partnerships (according to the seminal US model) and hence advantage from the business experience and management expertise of professional financial intermediary. German fund, incorporated in the form of GmbH has internal management, consisting of experienced investment managers with banking and corporate background. The theory says that such a structure does not provide the management with the financial incentives to monitor properly the portfolio companies. This might be true for the typical venture funds, but HTGF offers the system of coaching to provide advice to the entrepreneur. Second, difference is that Irish Government is a controlling shareholder of both the AIB Group and Bank of Ireland. Hence, in fact in all these funds there are no private corporate or financial partners, acting as co-investors. One advantage of government fund structured as a LP is that the government (through its agencies or controlled banks) acts as a limited partner and the actual investment decisions are taken by experienced venture capitalists, of course in accordance with ex ante set guidelines by the state authorities.

An example of active involvement in the VC industry, but indirect- because government's commitment is not poured directly to the portfolio, but is provided as a capital subscription to private venture capital funds' investment capital- is the Innovation Fund Ireland. It is an Irish government initiative designed to attract leading international venture capital fund managers to Ireland. The Fund has up to €250m available to make commitments to invest in private venture capital funds. Its funding comprises two elements. The first is exchequer funding of €125m which is managed by Enterprise Ireland. Successful applicants who receive an investment from Enterprise Ireland will have to commit to investing at least an equivalent amount in Irish companies or companies with significant Irish operations over the lifetime of their fund. The second element allows the National Pensions Reserve Fund (NPRF) to invest €125m as part of its private equity programme[197]. The structure of this Innovation Fund Ireland is in fact "fund-of-funds type" and reminds of the structure of Yozma programme (*see figure 4:7).* Using private VC

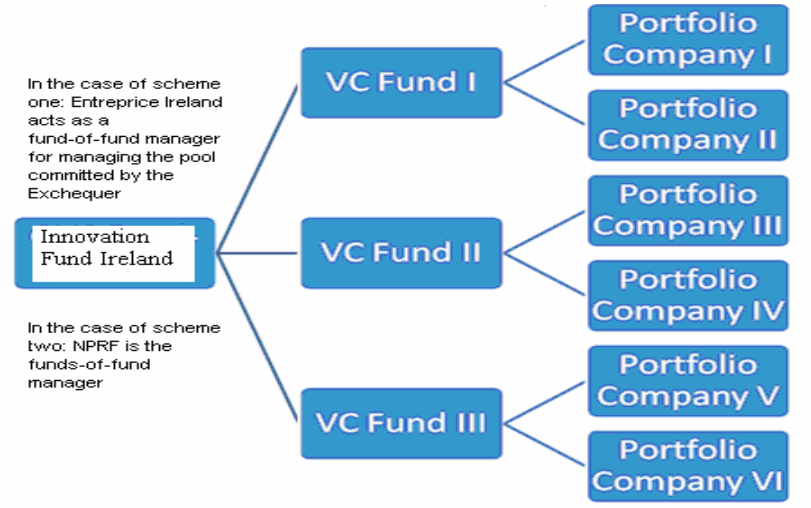
195 Author's note: see the Kernel Capital LP term sheet, available at: http://www.kernelcapital.ie/ investment/ seedfund.html

196 See: http://delta.ie/What%20We%20Do/_default.htm

197 See: http://www.enterprise-ireland.com/en/Invest-in-Emerging-Companies/Investors/Innovation-Fund-Ireland

funds as financial intermediaries mitigates the contracting problems inherent to early-stage financing[198]. It is important that Innovation Ireland's Fund's investments are passive- made through private VC funds whose managers are highly incentivised to add value to the portfolio companies and increase the internal rate of return. Profit distribution structure of the Irish fund is: private investors co-invest *pari passu* with the public contributions. In order profit distribution effect to be achieved for the private investors (in order the aim of the fund to attract foreign venture capital in Irish firms) ordering of the cash flows is changed: public investor puts the money first and gets the money out last. Thus, by differential timing the IRR of the private investor is enhanced. Part of the Innovation Fund Ireland commitment to the VC Funds is structured as a subordinated loan. The loan with interest creates a leverage effect on the return of the private investor when the returns from the fund exceed the interest rate. Correspondingly, losses are increased with low performance. This is also an incentive for the venture capitalist to monitor thoroughly the portfolio company and to maximize as far as possible their value.

Figure 4:7: Structure of the Innovation Ireland Fund, according to source: Legal Negotiation Workshop seminar lectures, Handouts lecture No 2, held by D.A. Pereira Dias Nunes, Tilburg University 2012



Up to date still there is no evaluation of the Innovation Fund Ireland. No results have yet been published in relation to the thirty-two expressions of interest that Enterprise Ireland received in relation to its first call which closed on 26 November, 2010. These applications are now being evaluated by Enterprise Ireland, in conjunction with the National Pension Reserve Fund, with a view to selecting appropriate investments which will help develop Ireland as a Global Innovation Hub.

198 Author's note: for details see Gilson R. J. (2002), see supra note 136

4.3. Japan- the venture capital that wasn't

The Japan example of a hybrid fund is unique as it emphasizes in partnering between the government, corporations and institutional investors. This is due to the unique Japanese collectivist culture where the bonds between contracting parties are strong and honoured. Typical venture capital firm in Japan is a captive one, i.e. a subsidiary of a big financial institution, usually a bank. The capital of the subsidiary is nurtured by the form of debt, rather than equity. Thus, the VC is forced also to structure its commitment to the portfolio company as a loan with convertibility, something that is undesirable for the entrepreneur, since he does not have the opportunity to pay the interest. The other possibility is the commitment to be structured as equity participation in firm's common stock, but with higher "equity kicker"[199]. The situation is even more problematic as it takes longer to Japanese ventures to reach IPO. The aforementioned explains why Japanese capitalists invest in the later stages of firm's growth, where the repayment of their commitment is sure and the expected rate of return is higher. The time to successful divestment is shortened as well. The goal of the entrepreneur is to create a "family firm", that he is quite reluctant to cede control to venture capitalist. The situation remains the same, even after the change of law was introduced, where a subscription of preferred stock was made possible[200]. Something more, the Antimonopoly law prescribes when the shareholdings are more then 25% the shareholder is not allowed to control the Board of Directors. That is why, usually Japanese venture capitalist acquire not more than 20% of the portfolio company that means the investments made are relatively small[201]. Thus the value-adding monitoring is no more economically feasible.

As the demand site is involved, innovation usually takes place at a corporate level or by R&D spin-offs that remain closely connected and subsidised by the parent company.

This is the environment in which Japanese Ministry of Economic, Trade and Industry (METI) started the Innovation Network Corporation of Japan (INCJ) public-private partnership (*see figure 4:8)* with the Japanese major corporations. INCJ aims are at fostering flow of technology and expertise "beyond the boundaries of existing organisational structures"[202]- be they start-up companies, medium-sized enterprises or large, established firms- and at building an ecosystem of innovation. The INCJ is capitalized at 90.5 billion yen, with the Japanese government injecting 82

199 See: Kenny, Martin, Han, Kyonghee, Tanaka, Shoko, "The globalization of venture capital: the case of Taiwan and Japan", Paper presented at the International Conference on Financial systems, corporate investment in innovation and venture capital, Brussels, November 7-8, 2002

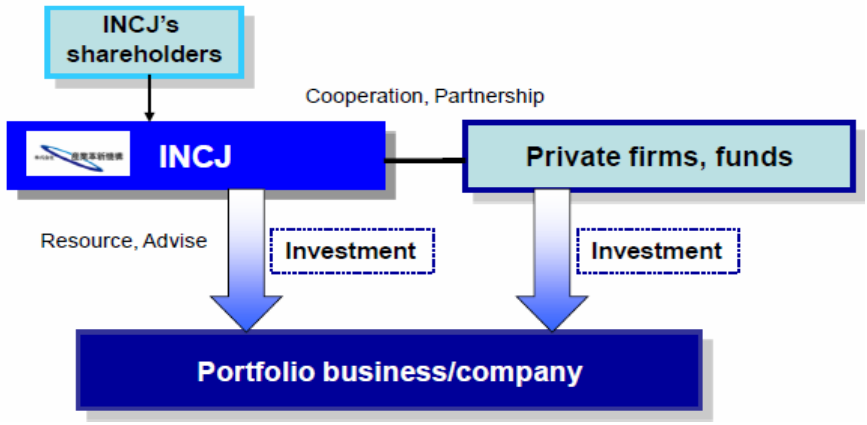
200 Author's note: for brilliant explanation why Japanese entrepreneurs do not cede control see Shishido, Zenichi, (2009), supra note 175

201 See: supra note 198, pp. 72

202 See: http://www.incj.co.jp/english/

billion yen and 16 private corporations providing a further 8.5 billion yen[203]. *This funding is used partly as a combination of venture capital and "buy-out fund" to provide risk money to support a growth strategy of small and mid-size companies and to facilitate consolidation among established companies*[204].

Figure 4:8: The structure of INCJ, according to INCJ presentation, July 2009, available at: http://www.incj.co.jp/PDF/091001.pdf



In addition to being an active investor in new ventures and fostering industry consolidation, *INCJ seeks to serve as an "honest catalyst"- for networking among technologists, functional/operational experts and business professionals. In Japan, many industries retain "silo" mentalities and many companies have a tradition of "going it alone."*[205] INCJ undertakes the mission to overcome the "capsulation" between Japanese companies as a psychological barrier in order to foster innovation. This task is given to the INCJ's Innovation Network Committee in which technological experts, PE and VC Funds managers, Public-sector professionals and corporate investors interact.

The problem is that INCJ from the beginning lacks clear sector or stage specificity. The outcome is that INCJ's investments are predominantly directed to growth and buy-out activities as there are no independent high-tech start-ups. Professionals have established bonds with their companies and innovative projects happen inside the R&D departments of the big corporations. This was the answer of two Japanese professionals[206] when asked: "How would you estimate the influence of INCJ on the Japanese VC market?" Consequently, Japanese venture capital industry is incomparable to the USA seminal model. When asked "What is the influence of the global crisis on the Japanese VC industry? Do the banks withdraw their contributions from the VC and does the government is involved more in order to cover the funding gaps as is in Europe", professor Zenichi Shishido answered: "Global crisis did not affected so much Japanese bank system in order to cause

203 Ibidem

204 Author's note: taken from Mike Lippitz, "Exploring the Innovation Network Corporation of Japan (INCJ)", Innovation Excellence, 14 February 2012, available at: http://www.innovationexcellence.com/blog/ 2012/02/14/exploring-the-innovation-network-corporation-of-japan-incj/

205 Ibidem

206 Jun Saito - Research Executive at Nikon Corporation and Professor Dr. Masato Hisatake - Senior Official at the Ministry of Economy, Trade and Industry (METI)

banks to withdraw from venture capital. The volume of fundraising of captive VC firms remains unchanged; they just invest in later stages. Active government involvement in VC industry is undesirable; it is better indirect measures to be taken, such as tax incentives".

In August 2011 Innovation Network Corporation of Japan, Hitachi Ltd., Sony Corporation and Toshiba Corporation announced that they have signed a non-binding Memorandum of Understanding to integrate their small- and medium-sized display businesses, which are operated by subsidiaries of Hitachi, Sony and Toshiba, in a new company ("New Co") to be established and operated by INCJ. INCJ, as a public-private partnership that provides financial, technological and management support for next-generation businesses, plans to invest a total of 200 billion yen in NewCo in exchange for shares to be newly issued to INCJ by NewCo as a third-party allotment. Eventually, INCJ will hold 70% of the shares with voting rights of NewCo, while Hitachi, Sony and Toshiba each expect to hold 10% of such shares[207]. This is the example of the partnering approach to foster innovation undertaken by Japan. In particular, corporate venture capital offers strategic resources (such as technological synergies and brand image)[208] and professional key employees, whereas government helps raising additional finance. This scheme works appropriately for the Japanese legal and social environment and there is no place for the USA model of independent VC firms. Or this is the Japanese venture capital that was not.

5. BULGARIA- THE UNDEVELOPED OPPORTUNITY

5.1. The environment

Venture capital and private equity in Bulgaria are unfamiliar type of alternative class investments. Due to historical, economic and cultural reasons only quite recently scholars and financial practitioners have started to speak about this industry and try to import the know-how from the other European countries. By joining the European Union in 2007, Bulgaria become part of European Investment Fund's and European Development Bank programmes for promoting growth-potential SMEs. Experts predict that shortly after the EU accession a major break-through

207 See: http://www.incj.co.jp/PDF/e_20110831.pdf

208 Author's note: In their study Dushnitsky and Lenox (2006) prove that high-tech firm take the best advantage of the "window on technology" offered by CVC; See: Dushnitsky, G, Lenox, M.J., "When does corporate venture capital create firm value?", Journal of Business Venturing 21, pp. 753-772

would take place on the venture capital market in CEE. Apart from removing the administrative obstacles, another reason why they expect that the interest for the region would increase is that the North American and Western European VC and PE markets are already rather saturated, therefore in addition to Asia, this region also had the potentials to be a main attraction for investors[209]. It is believed that the funds of institutional investors targeting Europe would approach the CEE region's countries with reduced reservations due to reduced risks[210]. During all the period foreign private equity and venture capital funds as entering the other East-European countries' markets have been making investments in Bulgaria as well: in different regions (with good infrastructure facilities and natural resources) and sectors like food-processing, tourism, computer technologies, agriculture. These were in fact direct foreign investments which were dealt under the Bulgarian Foreign Investments act. In this sense there was no "genuine" venture capital industry in the USA and Western Countries notion of the term. All the industries that received investments are working in non-innovation sectors of the economy and this is one more reason that they can not be taken into account when estimating the Bulgarian VC industry. Although an emerging economy has many funding gaps to be covered (especially in time of crisis), the future prospective that venture-backed high-tech companies could give the growth impetus, so needed for a small open economy, should be taken into account by the public authorities.

Bulgaria is bank-centered economy. Commercial banks rarely invest in small projects, or make small loans. Besides, they require large collateral and prefer reduced risk. What is more, they charge high interest. Banks very rarely held equity in the firms they finance. If they do that it is the stock from the largest publicly listed companies (which are also scarce number in Bulgaria).

It is argued that in Bulgaria most equity investments are made by so-called strategic investors - i.e. international financial organizations like International Finance Corporation (IFC), European Bank for Restriction and Development (EBRD), USAID etc. Venture capital funds operating in Bulgaria are just another proof of this statement - Global Finance (strong participation of IFC and EBRD), Caresbac- Bulgaria (USAID money), Bulgarian American Enterprise Fund, Europe Capital Management- Bulgarian Post Privatization Fund, or ECM-BPPF (EBRD and PHARE money)[211]. The participation of a well-known lead investor from the above-mentioned organisations is critical

209 See: Author's note: for deep insight on the recent VC/PE funds development trends in CEE countries, see: Karsai, Judit, (2009), "The End of the Golden Age" The Developments of the Venture Capital and Private Equity Industry in Central and Eastern Europe", Institute of Economics, Hungarian Academy of Sciences discussion papers, MT-DP- 2009/1 and Sormani, A. (2003), "Central and Eastern Europe: the accession years", European Venture Capital Journal, July-August, pp. 63-71

210 Ibidem

211 See: Economy Policy Institute, Bulgaria, (2000), "Venture Capital Financing (a comparative study of US, European and Bulgarian experience", Volume 2, Number 4, pp 14, available at: http://www.epi-bg.org/epi_old/uploads/docs/pubs/ 04/occasional4.pdf

for the success of the incorporation of a venture capital fund in Bulgaria. EVCA statistics[212] also shows that currently there is no domestic venture capital fundraising, all the commitments of the fund come from international organisation funds.

Generally, Bulgarian banks are unwilling to contribute risk capital; the same is the situation with the pension funds. Bulgarian pension funds are still not an important actor at the capital market: so far they have accumulated small funds, which could not affect significantly the market. The main pension funds active in Bulgaria are organized as an Association. These are "Doverie" PLC, Bulgarian Pension Fund, , "Suglasie" PLC, Cooperative Pension Fund, ODPF "Solidarnost" PLC; they have been set up within the last five years to bring into existence the voluntary supplementary pension insurance scheme. The regulation of these pension funds is provided by the Law on the Supplementary Voluntary Pension Insurance[213]. "According to the Law pension funds shall only deal in supplementary voluntary pension insurance activities. The Law regulates the investments and rate of return of the pension insurance funds. The earnings of the contributors are not cashed but used to increase the amounts in their individual accounts. The contributors earn a return on their individual accounts with the pension funds exceeding by several points the annual interest rate accrued on the one month term deposits in the commercial banks. The rate of return varies depending on the interest rate base used by the pension funds, on the return of investments made by them and their overhead costs. The pension funds allocate earnings representing the return on the invested contributions of the participants. The Law on the Supplementary Voluntary Pension Insurance sets the principles of the investment policy of pension insurance funds - reliability, diversification and profitability. The assets of the voluntary pension insurance funds may be invested in: bonds, issued or guaranteed by the Government; securities tradable on regulated stock markets; municipal bonds; accounts receivable on bank deposits; real estate and mortgages as well as other investment instruments"[214].

In a nutshell, the law does not allow pension funds to participate in alternative kinds of highly risky investments (and also not highly profitable as certain rate of return must be met according to the legal provisions) such as venture capital. The same is the situation with the insurance companies.

The tax environment is unattractive for venture capital investments as there is no legal structure transparent for tax purposes (*see figure 5:1*). In its 2008 Tax and Legal Benchmark report

212 EVCA Yearbook 2012, available at: http://www.evca.eu/uploadedfiles/Home/Knowledge_Center/EVCA_Research/Statistics/Yearbook/Evca_Yearbook_2011.pdf

213 The Law on the Supplementary Voluntary Pension Insurance is now part of the Social Security Code, available at: http://www.lex.bg/bg/laws/ldoc/1597824512

214 See: Economy Policy Institute, Bulgaria, (2000), supra note 210: pp 15, available at: http://www.epi-bg.org/epi_old/ uploads/docs/pubs/04/occasional4.pdf

EVCA[215] did not include Bulgaria. . The corporate income taxes should allow genuine business costs to be offset against the actual business incomes. Bulgarian current tax regime creates impossibility to offset capital losses against capital gains: if a non-resident person realizes both capital gains and capital losses as a result of a trade of stock in Bulgarian companies the losses will not be deductible from the taxable base. However, in European Commission report on removing obstacles for venture capital from October 2009[216] noted some positive changes:

• 10% corporate tax since 2007 (34.3% in 1999);

• 0% corporate tax in 138 municipalities with unemployment rate higher than the average level;

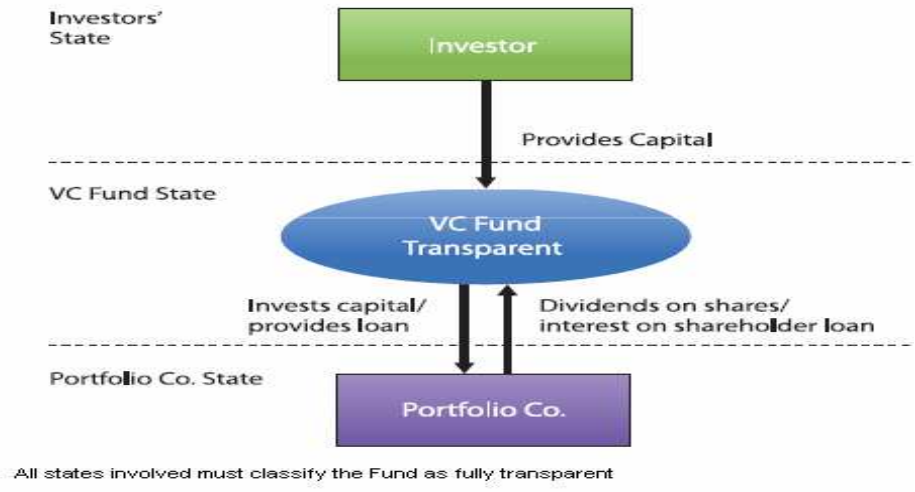
• 0% capital gains tax - income from transactions on capital market (incl.public trade of shares on stock exchange and private placement) is not taxed;

• 5% dividend tax as from 1st January 2008;

• 10% "flat tax" for incomes of physical persons since 2008;

It must be emphasized that the tax rate of the corporate income tax is really important factor for investors (limited partners in a fund): low taxes can be seen as incentive, but high ones as an impediment for investments in venture capital asset class.

Figure 5:1: Transparent legal structure for cross-border venture capital investments, source: European Commission, (2007), Report of expert group on Removing Tax Obstacles to Cross-border Venture Capital Investments, available at: http://ec.europa.eu/taxation_customs/resources/documents/taxation/company_tax/initiatives_small_business/venture_capital/tax_obstacles_venture_capital_en.pdf



Another means of encouraging high-tech industry at its demand side is providing tax incentives to SMEs. A good example of success stories is Ireland where the implication of this approach has lead to generating significant economic growth[217].

215 EVCA, KPMG, (October 2008), Benchmarking European Tax and Legal Environments, available at: http://www.evca.eu/uploadedFiles/Benchmark.pdf

216 European commission, (October 2009), "Cross border venture capital in the European Union", summary report, available at: http://ec.europa.eu/enterprise/newsroom/cf/_getdocument.cfm?doc_id=5646

217 Author's note: for some ideas how the tax environment can be improved see the section about Ireland in EVCA, KPMG, (October 2008), see supra note 215

Suitable structure in Bulgaria for the venture capital is the KD ("komanditno drujestvo"), which is close to the German KG: there are general partners with unlimited liability and limited partners' liability is limited to their fixed contributions to the partnership. According to Bulgarian law it has legal personality. Also, there is a possibility the general partner to be structured as a legal entity, in a form of company with limited liability, similar to the German GmbH or French Societe a responsabilite limitee. The problem however is the tax treatment of such an entity.

As investment phase of VC cycle is concerned EVCA[218] statistics shows that total number of VC investments is in early and late stage, no investments at seed stage at all. The preferred industries are Communications and Computer/consumer electronics.

As was emphasised many time before, exit strategies are critical for a vibrant venture capital sector. The most realistic exit strategy for venture capital funds in Bulgaria is acquisition by another investor. Rarely entrepreneurs/owners of the investee company can acquire back the whole company from the venture capital fund. The other probable exit strategy is initial public offering (IPO) at the Bulgarian Stock Exchange, which is regulated by the Law on Public Offering of Securities[219]. The procedures for initial public offering are quite time consuming and heavily regulated. What is more, the capital market is under-developed: the primary market is almost non-existent. All the companies launched on the Bulgarian stock exchange were not start-ups, but privatized companies. Virtually all stocks currently traded on the stock exchange are either the company stakes sold through the mass privatization or those of the former privatization funds. Potential issuers do not prefer direct financing compared to other means of financing of their investments. With a few recent exceptions (Balkanpharma and Neftohim that were acquired by foreign investors) no companies raise new equity through the stock exchange.

Last but not least, a vibrant venture capital industry needs adequate entrepreneurial culture. Bulgarian entrepreneurs do not like the idea of giving up ownership to "an outsider", pretty much like their Japanese counterparts[220]. What is worse, anybody assuming entrepreneurial risk is considered "foolish", the situation is pretty much the same as it was in Germany at the time WFG was created[221]. Due to historical reasons, lifetime employment with big company or state body is preferred to starting own Business. However, in recent years, due to economic changes and high rate of unemployment the trend is people to become more entrepreneur-orientated since they are pushed to by the environment. High tax rates would limit the returns for the entrepreneurs and their investors at the upside. Bankruptcy has negative social response and the Bankruptcy laws require

218 EVCA Yearbook 2012, see supra note 216

219 Author's note: available at: http://www.bse-sofia.bg/pdf/LawEN.pdf

220 See: Shishido, Zenichi, (2009), supra note 175

221 See: Hellmann, Thomas, (2000), supra note 145

personal guarantees from the entrepreneur, it is possible he as a person to be declared bankrupt as well as his firm. Another problem is the lack of management skills and experience in running the complex tasks of the start-up business. In Bulgaria network of coaches and angels that would provide professional advice is still underdeveloped.

As a conclusion Bulgarian venture capital environment is quite unfavourable. Public authorities must take simultaneous measures both at the demand and supply side in order to create a VC industry. The government must start first with indirect measures (as Lerner says "setting the table"[222]): by promoting R&D in order to cure the lack of deal-flow and by adopting the appropriate laws (especially the Tax and bankruptcy legal framework and the IP protection). This is step one called "preparation of VC market"[223]. The second step "Creating VC market"[224] involves active and direct measures by the government, aiming to increase the supply of VC. In this phase public authority aligns the financial incentives of the private limited partners in order to attract them to VC investment class.

5.2. Some positive trends..?[225]

Bulgarian Development Bank (BDB) was established after the adoption of a special law by the Parliament of the Republic of Bulgaria in April 2008. The aim of this financial institution is to support micro, small and medium-seized enterprises via a range of financial products, such as pre-export direct and indirect financing, guarantees, long-term investment financing and risk-capital financing. In addition, the Bank will attract medium and long-term local and foreign resources and grants intended for economic development. According to Bulgarian Development Bank Act 2009 the Bank is incorporated as Joint Stock Company. The controlling shareholder (with 99, 99%) is the State (represented in the shareholders meeting by the ministry of Finance). The governance system is two-tier with managing board and supervisory board. There is a possibility shares to be subscribed by the European Investment Bank (EIB), The Council of Europe Development Bank, European Investment Fund (EIF) and Development Banks of other Member States, but state's majority stake of 51% is un-transferable**.** The BDB can receive credit lines and loans from these

222 See supra note: 133

223 See: Meyer, Thomas (2007), supra note 123

224 Ibidem

225 Author's note: information about the Bulgarian Development Bank is taken wholly from its website: http://www.bbr.bg/en/bulgarian-development-bank.html

institutions, as well[226]. The BDB have two joint stock companies as its subsidiaries: The National Guarantee Fund (NGF) and Capital Investment Fund (CIF). These are the two instruments that government will use to promote high-potential SMEs in Bulgaria.

The controlling stake (51%) of The Capital Investment Fund is held by the BDB. Shareholders in the Fund may be local, foreign and international financial and credit institutions (and not involvement of corporate sector at all). The Fond has one-tier governance structure with Board of Directors and shareholders' meetings. The Fund will take equity positions in small and medium-sized entities in order to encourage their competitiveness and R&D activities. The law does not allow the Fund to take more than 34% of SMEs' common stock. In addition, management expertise will be provided by investment managers and economic professionals. On paper the idea seems nice, it resumes the German experience with HTGF, as the structure of the fund is the same (*see Chapter IV, figure 4:3*). The possibility the Board of Directors to set the conditions under which the Fund will participate in the investee companies' capital is a try flexibility of in negotiating the terms of the financial commitment to be introduced. However, there is also the danger of wrong management decisions as usually Board of directors, consisting of government and big financial institutions representatives is unfamiliar with equity. Here, the Fund faces problems pretty much the same with the WFG[227]. The Capital Investment Fund does not have considerable success and in December 2010 after decision of the Bulgarian Council of Ministers is restructured as wholly-owned subsidiary of the BDB- Micro financing Institution (MFI) Jobs that simply provides investment loans and working capital loans, and leasing for industrial equipment to micro and small entities, without holding equity. Thus, the idea of venture capital is abandoned. Bulgarian government is aiming to fill the general funding gaps in the economy, but without concentrating on high-tech sectors and high-potential and risky start-ups with innovative ideas. The resources are committed to firms acting in already established sectors of the economy (agriculture, industry, tourism). Other disadvantage is that there is no strategic partnering with private corporate sector as it is the example of Dutch BOI Fund or German HTGF.

The National Guarantee Fund[228] involves partnering with biggest commercial banks in Bulgaria. NGF offers to the commercial banks guarantees when start-ups less then one year old are provided with investment loan or working capital loan. The guarantee coverage up to 50% of the loan (in figures: up to 125 000 euro). As a conclusion government takes old-fashioned, typical for bank-

226 Author's note: for more information about Banks partners and their relationship see: http://www.bbr.bg/en/ duplicate-of-%D0%BC%D0%B5%D0%B6%D0%B4%D1%83%D0%BD%D0%B0%D1%80%D0%BE%D0%B4%D0%BD%D0%B8-%D0%BF%D0%B0%D1%80%D1%82%D0%BD%D1%8C%D0%BE%D1%80%D0%B8.html

227 See: the commentary of the WGF in Gilson, (2002), "Engineering a venture capital market: Lessons from the American experience", supra note 136, pp.39-42

228 Author's note: for more information see: http://bdbank.bg/en/goals.html

cantered system measures for promoting SMEs and economic growth. It would be better not to rely on banks' active involvement in investing process, but to incentivise them to contribute funds as limited partners and encourage other types of intermediaries (venture and private equity funds) to choose the investment portfolio.

5.3. VC engineering[229]

Bulgarian VC market is in the creation phase. It must be understood that most successful VC programmes are funded by the governments, but managed by professionals from the private sector[230]. Consequently, direct structures as the one of HTGF or the Dutch BOI are not suitable at the early stage when the VC market is under developed. Afterwards, when the industry have its roots such measures are valuable to stabilize the market or assist it in time of economic downturns[231].

Consequently, Bulgarian government must have several policy aims:

1. Becoming part of the globalizing venture capital market, since the industry can not exist in isolation. Besides, the European Union policy is to remove obstacles in cross-border venture capital in order to create single market. Government must adopt new legislation accordingly in order to be easy foreign general partners to manage multi-national assets and invest in start-ups in Bulgaria.
2. Attracting foreign venture capitalists' investment expertise and networks of contacts to Bulgaria by aligning the proper compensation structures when returns are distributed.
3. Creating competitive domestic VC market at the demand side

The know-how of New Zealand and Israel that created their VC industry from zero and the Irish experience[232] are valuable in this respect. The best structure for government involvement when VC markets are in their developing stage is the "fund-of-funds" (FOF) structure, where the state provides part of the pool of finance along with private investors and this pool is subsequently allocated by FOF manager to a number of independent VC Funds (*see Chapter IV, figure 4:7*). The public participation in the Yozma example was less then 50 % of every fund. This is reasonable to be implemented in the Bulgarian structure as well, because the aim is private investors to be

229 O'Shea, M. & Stevens, C. (1998) Governments as Venture Capitalists. The OECD Observer. No. 213

230 Author's note: as all the literature survey so far leads to this conclusion.

231 See: See: Meyer, Thomas (2007), supra note 123

232 See chapter IV, about the fund-of-fund structure of Innovation Fund Ireland, pp. 63.

encouraged to commit funds. Another reason for such a solution is that in a time of crisis public money are scarce and it might be unreasonable to make too large commitments in a risky industry which is still in its infancy. It is suitable Bulgarian Development Bank to establish a wholly owned subsidiary, which will be the Fund-of-funds. This subsidiary will only invest in VC funds (predominantly foreign[233] and afterwards in domestic as well) which have been successful in raising matching capital from private investors. The amount invested in a VC fund can depend on the overall fund size as well as the investment stage and focus of the fund. The initial capitalization of the fund must be not less then 25 million euro in order to be of optimal scale and make the difference at the market. The level of public fund participation shall not exceed 25% in every VC fund. So overall the targeted level of the capital invested in Bulgarian economy would be 100 million euro. This would lead to mass of capital that would really "make the difference" and launch Bulgarian VC industry. There will be distributed to a limited number of investments (around 6) in order the commitments not to be too "tinny" and go to only high-quality funds. Also, another outcome of the limited number of contributions of the government FOF is that the private venture capitalists are incentivised to join fast.

FOF structure's advantage is that the government is passive; it is the experienced venture capitalist that takes investment decisions which start-ups to be financed. The public fund can only participate as limited partner. Of, course, in order social gains to be achieved as well, government will choose VC funds that meet certain conditions: for example, investing in sectors where "knowledge spillovers" are needed: as pharmaceutical, telecommunications or computer software. As good examples of policy objectives can be stated the Innovation Fund Ireland ones:

- "*Increase the number and scale of innovation driven and high-growth businesses in the country.*
- *Increase the availability of smart risk capital for early stage and high-growth companies.*
- *Attract top-tier venture capital fund managers to the country*
- *Attract, leverage and develop entrepreneurial talent."*[234]

The Fund-of-funds must co-invest with private players in commercially viable ways, meaning that private venture capital firms must not be subsidized in the form of grants, deductions, downside protection[235].

233 Author's note: by country of establishment

234 Author's note: see: http://www.enterprise-ireland.com/en/Invest-in-Emerging-Companies/Investors/Innovation-Fund-Ireland

235 Author's note: for the negative impact of downside protection on Hybrid funds performance see the case of WFG in Becker, Ralf, Hellmann, Thomas, (2002), supra note 145 and Jaaskelainen, Mikko, Maula, Marco, Murray, Gordon, (2007), "Profit Distribution and Compensation Structures in Publicly and Privately funded Hybrid Venture Capital Funds", Research Policy, Vol. 36, No. 7, 2007

It is important public participation in the private VC funds to be structured as equity, because if venture capitalist receives his capital as a loan he is forced to pay interest, but since venture capital investments are locked for a certain period of time (nine-ten years maybe more since the cycle becomes extended in time of economic crisis), it is undesirable to force venture capitalist to pay the interest from his initial capital. Private investors (as it was the case with Yozma) will be provided with leveraged incentive from the upside through the right of call option. This is the opportunity private investors to buy government's share at a predetermined price (the initial price of the shares and some interest) by the end of the fifth year. That would serve as a capped return for the public investor and will increase the expected IRR for the other limited partners and incentivise them to participate in the fund. Increased compensation for good performance will incentivise the general partner to put value to the portfolio companies, as well. The option has one important additional benefit that concerns the public investor. In case of success, government gets a quick exit from the fund and can reinvest the proceeds, instead of waiting for the returns in VC fund's termination[236].

In addition there will be a requirement the funds eligible for public funding to have at least one other big, famous financial institution or corporate investor. The aim is "collective learning" and VC cooperation[237].

In Bulgaria there is no developed reputation market. In order to fix this problem, the general partner of the eligible funds must invest at least 10% of the fund's total commitments (not only 1 % as it is the seminal USA model) in order to ensure that he will have a direct share of the downsides and hence is incentivised to manage properly the portfolio. This requirement enhances his returns in case of success as well. This scheme was adopted at first by Chilean fund CORFU[238].

Examples of venture capital funds (that already are present in Bulgarian's market) that can be first beneficiaries of the proposed structure are NEVEQ[239], Eleven[240] and LauncHub[241].

It is important to note that the government hybrid fund from the beginning must concentrate only at seed and early stage investments to VC funds that deal with high-tech sectors, not at all the private equity spectrum and certainly not at all kinds of start-up businesses; otherwise the creation of the VC industry would be hindered. It is suitable private funds that deal with IT, software, telecommunications and life sciences to be targeted as Bulgaria has R&D potential in these areas.

236 See: Meyer, Thomas (2007), supra note 123

237 See: Avnimelech, Gil, (2009), "VC Policy: YOZMA Program 15- Years Perspective", DRID, Paper presented at the Summer Conference 2009 at CBS - Copenhagen Business School, available at: http://www2.druid.dk/conferences/viewpaper.php?id=5606&cf=32

238 See: Meyer, Thomas, (2007), supra note 123, pp. 22

239 See: http://www.neveq.com/about.html

240See: http://eleven.bg

241 See: http://launchub.com

Afterwards, new hybrid funds (with different structure, where the public-private fund directly invests in the portfolio companies[242] or government strategic partnering with private partners) can be launched, but this is a matter of VC market maturity[243].

6. CONCLUSION

The future of the venture capital is more and more interconnected with the government's involvement in the VC industry. Venture capitalists see governments as prospective limited partners. Consequently, the question for academic research is no more: should the government actively participate in the VC cycle; the question is what structures are most suitable to do so.

For the purposes of this study in chapter 1 the USA venture capital model was taken as a theoretical example and on its grounds a comparative analysis was made of the Western European and Japanese ones. Undoubtedly, USA has created flexible and lucrative contractual model between capital providers (the institutional investors), intermediaries (venture capitalists) and the entrepreneurs in order crucial financing to the most risky and uncertain early stages of high-potential firms life cycle to be assured. Leading role has the VC manager who in response of the difficult environment will employ a number of tools to mitigate agency conflicts among entrepreneurial firms and outside investors, the most important of which are the monitoring and advice provided to the start-up and the alignment of the incentives in time of the exit. In fact these are the "non-monetary aspects" of venture capital financing which appear to be critical for the proper functioning of the venture cycle. Namely these aspects are often missing when US model is adopted in other countries. This is due to differences in political and economic development, corporate ownership regulations and business culture. In chapter 2 are explained the main differences between the US and European venture capital:

1. principal sources of funds for venture capital investing
2. the legal form under which the European VC funds are organized
3. investing attitudes of the fund managers: they do not provide the start-ups with the crucial "non-monetary" contributions, thus the agency costs are not mitigated

242 Author's note: like Germany

243 Author's note: like Netherlands

4. The method of divestment: European stock markets have been “unwelcoming” for fast-growing innovative start-ups without a proven track record. The typical company which lists is established, operates in a mature sector and goes public not because it needs new capital for investment. There is no demand in the European capital markets for SMEs shares, hence no liquidity and no demand for start-ups willing to go public.

The European VC industry is too young in its stage of development and it is far from self-sustainability. Its evolution was distressed by the current economic crisis. As long as investors’ bias in favour of private equity remains, available funds are not channeled to where they are most needed: to provide equity finance to innovative seed and start-up SMEs. The explanation why European investors shun away from VC class investment is the high levels of risk and severe information asymmetries that accompany the early stages of small and medium-sized innovative firms. It is often uncertain and challenging for venture capital managers to add value to the start-ups and create a positive internal rate of return for the investors. In addition, European VC funds generate lower return when compared to their US counterparties and secondly, they lag behind when compared to the private equity asset class. These trends are intensified by the current economic crisis. Investors concerned about their own scarce capital shun away from riskier asset classes, thus “drying up” even more the scarce investments in venture capital. Consequently, investors would prefer to pour their money in more mature and established commercially successful companies that provide certain and higher returns and lower risk.

There is other side of the medal, too. As the EVCA statistics in chapter 2 shows it seems that venture capital industry is remaining unscathed during the credit crisis if compared to the growth and buyout markets, which suffered a sharp decline. Hence, it can be hypothesized that the credit crisis has made returns from venture capital investments more favourable than returns from other types of private equity. At least, the high returns to private equity in the past few years were driven by inexpensive credit so taking away that cheap credit has brought private equity returns back into line with other investments. Here is again the proactive role of public authorities that can try to stabilize the positive trends.

The second problem is legislative: before the crisis occurred, banks and insurance companies were some of the greatest contributors of funds to the supply side of the VC industry in Europe However, because of the financial crisis, they now face stricter rules (Basel III and Solvency II) on committing money in riskier asset classes, such as venture capital. There is a potential risk that this recent legislative change in the prudential regulation framework further to transform venture

capital in a less attractive investment class, leading banks and insurance companies to scale back sharply their contributions to VC fundraising.

As a consequence, the average size of a typical European venture capital fund is significantly below the optimal size for this type of funding instrument and hence the IRR for the investors is lower. As a consequence of being below the optimal size, European funds invest only 20% of their US counterparts but support nearly twice as many companies. This means that in Europe the demand for VC finance in Europe far exceeds the supply.

It is the government that can step in as a leading investor in order to stabilize the VC market and help private sector overcome the consequences of the economic crisis. Governments' involvement in venture capital industry is based on the "principle of additionality": its capacity to provide additional finance that would have been unavailable otherwise or facilitate financing on more favorable terms in order certain policy return to be achieved, or channeling sources in more attractive conditions in order to be established well-working venture capital system. Governments can allow themselves to address market failures and liquidity gaps since they allocate taxpayers' money and are able to bear more risk as investors.

The comparative analysis between Germany, Ireland and Japan shows that there is no "golden formula" to engineer a hybrid venture capital fund and no rules how to foster innovation and economic growth; all public attempts are just experiments over the seminal US model. Solutions taken in different countries reflect their own systems of innovation, levels of entrepreneurship, political and economic development, varying labour practices, corporate ownership regulations, educational achievements and business culture. Something that can work completely successful in one country can be a failure in other, if the public authorities underestimate the existent environment and the stage of development of the VC industry.

Hybrid fund structures can vary from country to country, but basically practice has proven that two main types of vehicles are successfully operating. The first one is the model of "equity enhancing program" where the government involvement (either by direct investment to the fund or acting as a guarantor to other funds raised) enables additional and cheaper funds to be raised via creating a leverage advantage to private investors. Usually, such hybrid funds are structured as investment companies which invest directly into the portfolio companies, where the government is involved as founder and main sponsor. The management is delegated to the fund by itself (by the board of

directors, consisting of private sectors professionals). An example of such a fund is the first case study in Chapter 4: about the German High-Tech Gründerfonds[244].

The second case study about Ireland shows that in a number of initiatives public authority follows closely the USA model: the government and a general partner- a private VC firm- form a hybrid fund, incorporated as a limited partnership. The governance of the fund is let to the venture capitalist that has the full operational autonomy to achieve commercially attractive investment returns. Hence, public investor benefit from the business experience and management expertise of professional financial intermediary. HTGF, incorporated in the form of GmbH has internal management, consisting of experienced investment managers with banking and corporate background, but the theory says that such a structure does not provide the management with the financial incentives to choose and monitor properly the portfolio companies. The drawback of this structure is that private sector is not attracted as limited partner as well[245].

The third example of direct commitment of the hybrid fund to the portfolio of innovative start-ups is the Japanese Innovation Network Corporation of Japan (INCJ). The structure is a unique partnering with corporative investors: in particular, corporate venture capital offers strategic resources (such as technological synergies and brand image) and professional key employees, whereas government helps raising additional finance. In fact this is not a venture capital in a strict sense, because in Japan there are few independent start-ups. Hence, the social benefit is in Japanese government promoting the creation and enhancement of networks and exchange of ideas between corporations and financially helping the corporations in their projects[246].

The second type of successful hybrid fund structure is the so-called “fund of funds” where the state and other investors form a pool of finance (the fund-of-funds (FOF)) that is subsequently allocated by the FOF manager to a number of independent VC funds. It is the private VC funds that invest into the innovative start-ups and the commitments are based on purely economic criteria. Consequently, private venture capitalists bare the risk of losses and hence have the incentive to monitor the portfolio companies carefully. The most recent Irish initiative- Innovation Fund Ireland is structured this way[247].

Chapter 5 is a case study on Bulgaria- an Eastern European developing country with young market economy. Bulgarian VC market is in the creation phase. Hence the government must adopt wide

244 See: subchapter 4:1, pp. 53-58

245 See: subchapter 4:2, pp. 61-62

246 See: subchapter 4:3, pp. 64-66

247 See: subchapter 4.2., pp. 62-63

range of measures, aiming both to promote the demand and the supply side of the venture capital market. For example, the "setting of table"[248] can begin with favorable corporate income tax treatment for venture capital funds and creating innovation hubs with universities and research institutes. It must be understood that most successful VC programmes for active involvement in VC industry are funded by the governments, but managed by professionals from the private sector. Consequently, structures for investing directly in the portfolio companies as the one of HTGF are not suitable at the early stage when the VC market is under developed and the investment management professionals are missing. Afterwards, when the industry have its roots such measures are valuable to stabilize the market or assist it in time of economic downturns. Consequently, the study proposes an indirect "Fund-of fund structure", the know-how from Israel's Yozma programme, New Zealand Venture Investment Fund and Innovative Fund Ireland can be adopted. The main aim of the government fund will be to attract foreign venture capitalists' investment expertise and networks of contacts to Bulgaria and to follow the European trends of "globalizing" and creating a single transnational venture capital market.

In the end one reservation must be made: in this work it is presumed that the governments themselves have "free capital" to pursue social gains via venture capital funding of high-potential start-ups. Recently, the Irish economy has been suffering from financial constrains and as its venture capital industry is highly dependant on Enterprise Ireland funding, a failure in the hybrid funds could be expected to occur. In such a scenario, Japan model would be the most suitable as the corporate venture capital would fill the gap in fundraising that the government would leave.

The future of venture capital is unpredictable, as but at least two things are certain: firstly, only by partnering between public and private players at the market the crisis can be overcome and innovation and economic growth can be promoted; secondly, existing venture capital funds will have to choose between downsizing and becoming "boutique" funds or "thinking big" and becoming global[249].

248 Lerner, Josh, Lerner, Josh, (2009), Boulevard of Broken Dreams: Why Public Efforts to Boost Entrepreneurship and Venture Capital Have Failed- and What to Do about It", Princeton University Press, Princeton, New Jersey

249 Editorial, (2009), "Venture capital in crisis?", Venture Capital, An International Journal of Entrepreneurial Finance, Volume 11, Issue 4

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