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Abstract

In this paper I focus on the exit phase in the venture capital investment. I investigate the decision of the exit timing and the choice of the exit strategy made by venture capitalists, and discuss the factors affecting the venture capitalists' exit decision. I begin with a brief introduction of the venture capital industry to give a basic picture of venture capital investment, followed by a description of the most important exit vehicles and a comparison of their advantages and the disadvantages. In the main part of this paper, I discuss the factors affecting the exit decision in two aspects: the decision of exit timing and the choice of exit routes. The factors determining the exit timing are mostly associated with information asymmetry. Due to the special standing of the IPOs in the venture capital exit decision, I highlight the factors which are particularly significant in the course of an IPO, like the market conditions, the venture capitalist's reputation, the grandstanding problem, etc. In contrast, the factors influencing the choice of exit vehicles are more versatile, for example, the managerial incentives, the transactions synergies and the underpricing of venture backed IPOs. All these factors are discussed with empirical evidence from numerous studies.

I would like to thank Dr. Yongchang Wu for his comments and suggestions on my paper. His advice on the structure and contents were very helpful for completing my thesis.

Abstract (Deutsch)

In dieser Arbeit behandle ich die Exit-Phase bei Venture-Capital Investitionen. Ich untersuche den Entscheidungsprozess betreffend Exit-Timing und Auswahl der Exit-Strategie von Venture Kapitalisten und die diversen Faktoren, die die Exit-Entscheidung beeinflussen. Zunächst beginne ich mit einer kurzen Einführung in die Entwicklung der Venture Capital Industrie, anschließend beschreibe ich die wichtigsten Exit-Methoden und vergleiche deren jeweilige Vor- und Nachteile. Der Hauptteil der vorliegenden Arbeit beschäftigt sich mit den Einflussfaktoren auf die Exit-Entscheidung – diese können in zwei Kategorien eingeteilt werden: Entscheidungen, die sich auf das Exit-Timing beziehen und solche, die die Auswahl der Exit-Methode betreffen. Die Einflussfaktoren auf das Exit-Timing betreffen hauptsächlich die verschiedenen Aspekte der Informationsasymmetrie. Da IPOs eine besondere Stellung innerhalb der Exit-Methoden einnehmen, werde ich besonders auf Faktoren eingehen, die bei einem Börsengang eine Rolle spielen, wie zum Beispiel Umwelteinflüsse auf dem IPO-Markt, die Reputation des Venture Kapitalisten, das sogenannte „Grandstanding“-Problem und so weiter. Im Gegensatz zum Thema Timing, spielen bei der Auswahl der Exit-Methode außer der Informationsasymmetrie noch eine Reihe weiterer Faktoren eine Rolle. Beispiele dafür wären die Anreizmechanismen für Manager, Transaktionssynergien, und das Problem des Underpricing bei neu emittierten Wertpapieren. Bei der Diskussion all dieser Faktoren werde ich versuchen, meine Aussagen mit Untersuchungsergebnissen von verschiedenen empirischen Studien zu unterstreichen.

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1 Introduction

Although the venture capital industry is relatively new in Europe, it has been significantly expanded in recent years and became a recognized source of finance and profit and the most important alternative form of financing for start-up and technology companies. Initially, venture capital played an important role only in the United States. More recently, venture capital has been also recognized in Europe as an important tool for job creation, technological innovation, export growth and regional development.

Generally, the return of the capital invested is the most important criterion to measure the investment's success, the exit stage of an investment is therefore a significant determinant of performance. Due to the special characteristics of venture capital investment – namely that the venture capital firms are engaged in their portfolio companies only for a limited period of time – venture capitalists have to plan their exit decision before the investment is made. In this paper, I would like to discuss the various exit possibilities and the factors affecting the exit decision made by venture capitalists.

For a better understanding of the exit decision and the factors influencing the exit decision, I begin with an overview of the venture capital industry. First of all, I briefly review the development of venture capital, followed by venture capital fund structure and a short description of the venture capital cycle.

In the next chapter, the diverse exit vehicles will be discussed. I explain the different routes by which venture capitalists can disinvest their portfolios, namely IPO (initial public offering), trade sale, share buyback and write-off. I compare these vehicles with their advantages and disadvantages.

The main focus of my paper is to analyse the factors affecting the venture capital exit decision. They will be separated into two categories: the decision of exit timing and the decision on the choice of exit vehicles.

The factors determining the exit timing will be discussed in chapter 4. Firstly, I would like to discuss the exit timing in a perfect world. I use the assumption by Cumming in his 2003 study and the cross curve theory to find out which factors may influence the exit timing decision in a “perfect world”. However, we are living in a real world; there are more factors which could have impact on the venture capitalist’s decision on the exit timing. Information Asymmetry is in the real world the most significant reason for the deviation of exit timing from its track described for a perfect world. I use the empirical evidence from numerous academic studies to discuss the factors associated with information asymmetry which affect the exit timing decision.

Because IPO is often considered as the most important exit strategy for venture backed companies, and the conditions required for going public differ from those of other exit routes, there are several unique factors which influence the exit timing in the course of an IPO. I summarize the theories about these factors suggested by different studies and compare the empirical evidences to support the theories. The factors include market conditions, venture capitalist’s reputation incentives and the underpricing problem in the course of an IPO.

In chapter 5 I focus on the factors that determine the venture capitalist’s choice of exit vehicle. IPOs are widely considered as the superior channel of exit, because they provide high returns while allowing the management to stay in charge. Trade sales are often seen as the next best exit vehicles, followed by secondary buyouts, buybacks and write-offs. But as there is a wide variety of other factors besides the IRR that affect the venture capitalist’s exit decision, this suggested “pecking order” of exit vehicles has to be viewed critically.

Again the information asymmetry plays a significant role in the decision of exit strategy, the information asymmetry between the venture capitalist, the managers and the potential new owners can influence the exit choice in so far as the choice of exit vehicle also determines who the venture capitalist's interest will be offered to. Also the potential new owner's ability to monitor and incentivize the managers will influence the price they are willing to pay. Potential transaction synergies favour the use of trade sales as exit vehicle since those synergies can be best realized if the target firm gets incorporated into the acquirer firm. Liquidity considerations also play an important role in determining the optimal exit vehicle. Venture capitalists prefer the method that provide them with greatest liquidity – this can be the IPO, given that the stock market in the respective country is well developed; or in other cases, an acquisition by a strategic investor.

2 Venture Capital Background

As an important means of raising private equity capital, venture capital plays a more and more important role in the economic world. This investment form is generally provided by professional, outside investors to young businesses with promising growth potential. The venture capital investment usually takes the form of cash in exchange for shares of the investee company. Venture capital investments are often considered to be highly risky, but they in exchange promise attractive rates of return. A venture capitalist is a person who manages such investments and provides additional managerial and technical expertise. The funds that are needed to operate the venture capital firm are mostly provided by groups of wealthy investors, for instance investment banks and other financial institutions that pool such investments or partnerships. Venture capital is especially popular among start-up firms that – due to their limited operating history – can not or do not want to raise funds by issuing debt.

2.1 Development of Modern Venture Capital

The earliest origins of venture capital can be traced back to the story of Christopher Columbus. His adventurous idea did not arouse the interest of the King of Portugal, but convinced Spanish Queen Isabella, who financed his journey, and enabled his great discoveries. Queen Isabella could hence be regarded as the earliest ancestor of venture capitalist.

The venture capital industry originates in the post – Second World War years, as technological innovation was prospering, primarily due to military applications in The Second World War.

In the history of modern venture capital, General Georges Doriot is considered as one of the forefathers by most economists. In 1946, the American Research and Development Corporation (AR&DC) was funded by him and some associates; the most notable success of the AR&DC was the Digital Equipment Corporation where they multiplied their initial investment by 5800 over 15 years. They originally invested \$70,000 in Digital Equipment Corporation and when the company went public in 1968, this investment had already gone up in value to \$355 million, generating an averaged annual return of more than 100% on the investment. Digital Equipment Corporation is thus generally seen as the first successful venture-backed investment in the modern venture capital history.

Prior to the Second World War, venture capital investments were almost exclusively undertaken by wealthy individuals and families. Only after the passage of the Small Business Investment Act of 1958 a gradual change towards a professionally managed venture capital industry began (Allen & Andrew 1995). This Act provided the legal framework for the U.S. Small Business Administration to license private “Small Business Investment Companies” (SBICs) whose purpose was to finance small entrepreneurial firms in the U.S. and to offer help and advice for their managers, and thereby facilitating the flow of capital in the economy (Miller & Reilly 1987; Anderson 1997).

But until the beginning of the 1980s, the venture capital industry was still in a rudimentary phase. Apart from the culture unsupportive of entrepreneurial spirit, one of the main reasons that prevented the development was the poor exit alternatives offered by the stock markets at the time. Also the absence of pension funds in providing capital was a hindrance for the venture capital development, because the funds raised mainly from banks and financial institutions which typically had a very long investment lifetime.

In the 1980s, the climate for venture capital investments experienced considerable improvements due to a series of changes in the laws and regulations. This was also the period of some very successful and well-publicised high profit IPOs, like in the case of

Federal Express, Apple Computer and Genetech, Inc. In 1987, US venture capitalists raised and invested nearly \$4 billion – a remarkable growth from the less than \$600 million invested in 1980 (Galante).

The years of 1989 to 1991 were characterised by a downturn in private equity and venture capital investing, but this trend was reversed in the last few years following the economic recovery and the IPO boom. 2007 seemed to be an especially successful year for venture capital. In the United States alone, it represented the highest yearly investment since 2001, a 10% increase in investment volume compared to 2006.

2.2 Venture Capital Fund Operations

2.2.1 Roles Within a VC Firm

Venture capital general partners (also called “venture capitalists” or “VCs”) are the managers of the venture capital firms, in other words it is them who contribute their professional know-how to the firm. Venture capitalists typically come from varying career backgrounds, but many are former chief executives or other senior executives at firms working in similar fields as those which the partnership finances.

Venture capital funds investors are identified as limited partners (Morck, Strangeland & Yeung 1998). They are often either individuals with great personal wealth or institutions with large amounts of available capital, such as state and private pension funds, university financial endowments, foundations, or insurance companies (Beatty 1986).

The entrepreneurs are the managements of venture invested companies. They are normally the original founder of the company, but sometime also the employed

management, They have usually specific technology kow-how and skills, but lack of the market experience and financial knowlage.

2.2.2 Structure of the Funds

A complete venture capital investment is a process beginning with searching fund investors, raising the fund, selecting project and investing in, followed by adding value to the firms using their expertise, closing with exit from the investment and receiving the capital gain. After such a cycle is completed, the venture capitalist will then reengage himself by raising follow-up funds and by investing in the portfolio companies.

Most venture capital funds have typically a ten-year life, with the possibility of a few years of extensions to allow for private companies still seeking liquidity (Venture Capital 2008). The investment cycle for a fund usually ranges from three up to five years where the venture capitalist actively invests in start-up companies; in the remaining time the venture capitalist concentrates on helping the management and making follow-on investments in their portfolio companies (Benviste & Busaba 2002). This model was first put to test in the 1980s by successful funds in Silicon Valley that invested in technological trends broadly. The idea was to invest in promising new companies, to guide them during their period of ascendance, while at the same time minimizing the management and marketing risks faced by any individual firm. In venture capital funds, the limited partners commit to pay a fixed amount of money to the fund that is “called down” by the venture capitalists over time. If they are not able to participate in such a capital call, they have to face considerable penalties. (Berle & Means 1993).

2.2.3 Compensation

Typically, the venture capital general partners earn a management fee of 2% of the capital committed to the fund annually and on top of that another 20% of the net profits

(“carried interest”) of the fund, this compensation scheme is a so-called “two and 20” arrangement (Bhagat 1997). But in recent times, carried interests of as much as 25-30% are not unusual, especially with top-tier venture capital firms. (Pagano, Panetta and Zingales 1998).

2.3 Venture Capital Cycle

2.3.1 Fundraising

As an important premise for the venture capital investment, the process of raising capital and structuring funds is complex and difficult understood outside of the industry. The venture capitalists normally try to cultivate the connection with limited partners – investor who provide them capital. Venture capitalists typically raise their capital not on a continual basis, but rather through periodic funds. These funds, which are often in the form of limited partnerships must be returned to the investors after a certain period of time, followed with new funds raised.

2.3.2 Venture Capital Investment

Venture capital is not available for all entrepreneurs, venture capitalists are very carefully in selecting firms to invest in, in average only one in three hundred business plan received by venture capitalist will be invested (Black & Gilson 1998). Venture capitalists are generally only interested in companies with high growth potential, because only such projects are possible to provide the capital gains and can be exited within the limited timeframe (Pulatkonak & Sofianos 1999).

The high risk of these kind of ventures lead to the requirement of high return, which makes the venture capital high costly financing source. The companies looking for venture

capital are mostly companies which need a big amount of up front capital and have difficulty of receiving other alternative financing (for example debt). They are mostly high-technology firms whose majority assets are intangible, like IT-firms or bio-technology firms. This also explains why the most venture capital are invested in the high – technology and life sciences industries (Booth & Chua 1996)

Even so, not all companies with high growth potentials can receive venture capital invested. They have to meet other requirements of the venture capitalists, such as a convincing business plan, capital and energy input from the founder, a qualified management team, a good exit possibility in the limited investment period and an average annual return of at least 40%. All these characteristics make the company to a favourable candidate for venture capitalists to invest.

Venture capital is typically not given to the portfolio firm as one single payment, but in stages. The managers are expected to come back to the venture capitalist frequently to ask for additional funds. This strategy of staged financing helps to reduce the risk of investing money into unprofitable projects. One of the main characteristics that differs venture capital from other financing methods is that the venture capitalists play a more active monitoring and governance role (e.g., Gompers & Lerner, 1995) and use explicit control covenants, for example in the form of founder replacements.

2.3.3 Exits of Investment

When a venture capitalist engages in a relationship with an entrepreneurial firm, it is because he expects to receive a significant return after exiting the investment. Exit usually takes place after three to six years – the amount of time the venture capitalist remains engaged depends mostly on the development stage of the company (Chemmanur 1993).

In general, venture capitalists will choose one of the following five methods to exit their investments:

- Initial public offering (IPO): An IPO – or initial public offering – is a company’s first public stock offering; the process of registering the company’s securities with the Securities and Exchange Commission is also known as “going public”.
- Trade sale: Trade sale is an exit route that a company will be acquired by another firm. A trade sale could be completed in different forms, for example, a share deal, an assets deal or a merger.
- Buyback: The entrepreneurial firm’s shares are bought back from the venture capitalist at cost plus a certain premium. To ensure that the managers will be required to buy back the shares if another exit method is not feasible within a designated period of time, a so-called buyback clause – or redemption clause – is often incorporated into the investment terms.
- Write off: this is the worst case that could happen within a venture capital investment. It represents a failure of the company; the venture capitalist may continue to hold shares in a non-viable or barely profitable enterprise.

2.4 Importance of Exit for Venture Capital Success

Due to the structure of the venture capital investment, venture capital firms are engaged in their portfolio companies only for a limited period of time. That means, before the venture capitalists made the investment decision, they already plan to exit. Therefore, the ability of venture capitalists to successfully disengage from their portfolio companies is a very important measure for assessing their performance (Neus & Walz 2004).

The importance of exit can be demonstrated in the following aspects:

- It enable venture capitalist utilize their expertise more efficiently (executive skills, reputation, ect.which are more appreciated by younger companies). Divert their engagement from the mature companies to early stage companies.
- In the venture capitalist - capital provider relationship: The return on investments realized upon exiting the venture capitalist's engagement can serve as a concrete benchmark for capital providers to assess the skills of the venture capitalist and the profitability of venture capital as compared to other types of investments. It also helps them decide whether and how much to invest in venture capital in the future. Furthermore, the freeing up of the funds allows limited partners to reallocate their capital from less successful to more successful investments. (Black & Gilson 1998).

Although these results can be achieved using any form of exit, the choice of exit route may significantly influence the distribution of the gains between the entrepreneur and the venture capitalist (Quindlen 2000).

The literature discussing the importance of venture capital exits has been expanding rapidly in recent years. While the focus of the early research was mainly on the initial public offering as the most important exit route, more recent studies have broadened the view to include the other exit options, as well as the relationships between the different vehicles (Cornell & Shapiro 1987). The most comprehensive work to date is by Douglas Cumming and Jeff MacIntosh (2003); they provide a general theory of venture capital exits: A venture capitalist will choose to disengage from an investment when the projected marginal value added as a result of its efforts, is lower than the predicted marginal cost of these efforts (Ritter 1984). Most importantly for present purposes is that Cumming and MacIntosh incorporate the effect of time on the exit calculus into their considerations (Cornelli & Goldreich 2001).The authors thus provide a useful vantage point for further research into the importance of venture capital exit decisions.

3 Exit Vehicles

As mentioned in the previous chapter, there are four exit vehicles usually used in a venture capital exit process. In this chapter, I will go further in this topic and give an individual description of each vehicle and compare their advantages and disadvantages in different respects.

3.1 Venture Backed IPOs

As introduced already, in an initial public offering, the firm's first sale of its shares to public investors. The venture capitalists will normally not dispose all (or even a part of) their shares to the public investors at the date of the public offering (due to several reasons which will be discussed in the following chapter; for example: contractual agreement, information asymmetry or venture capitalist's reputation consideration), Rather, the shares will be disposed into the market over a period of time (a few months or even years) after the public offering. IPO is seen as an exit route no matter if the VC sells at the time of the IPO or later, since it will precipitate an exit at some point in the future.

IPO is one of most common exit routes for venture capitalists, and is normally considered as the most effective exit route as regards to the remarkable return received by venture capitalists. Also from some empirical evidence proved that IPOs were the most effective driver for the venture capital investments. According to Gompers' study (1998), a active market for the venture capital backed IPOs (also the second tier market and parallel market) is one of the main reasons for the great development in the US venture capital industry.

But is IPO absolutely the best way for venture capitalists to exit their investment? The following arguments could provide an answer for this question:

Advantages

- Normally higher price for the shares issued.
- Favoured by the management, hence the absence of conflict between company's management and venture capitalists.
- An inducement for a dual track approach – may actuate an attractive acquisition offer.
- A potential future growth of the business from retained shares.

Disadvantages

- More costly than other exit vehicles.
- Uncompleted exit, the lock up agreement forbids a hundred percentage exit at the date of IPO.
- The remained shares held by venture capitalists after IPO cause additional risk in case the return may reduced after the waiting periods.
- Although the shares are still held by venture capitalists, they lose the special rights they had in a private company.
- The markets in some countries are illiquid
- For the preparation, simple and attractive information should be sent to the strewed public investors
- For the most undersized companies, IPOs would be a no-option

The allurement for most venture capitalists to go public is on one side the super returns they have sometimes achieved and that are expected as several extremely successful IPO stories get known; on the other side the opportunity for the management to stay in charge. But due to the fact of the detention of share disposal, a good exit price may mean nothing if the price in the market falls before the venture capitalists are able to sell the remainder. That is also one of the reasons why the more and more venture capitalists prefer the trade sale. Also in the case of the divestment of a small company that doesn't meet the

requirements of an IPO, an initial public offering can not be considered as a possible exit strategy.

However, as a significant secondary effect, the marketing and preparation of IPOs often leads to a pre-emptive offer, which enable the venture capitalist to realize the best benefit from the both options. In fact, some of the most successful exit performers seem to be those who aim for an IPO and use this as a means to encourage pre-emptive trade bids.

3.2 Trade Sale (TS)

Also known as acquisition, the other most common used exit method occurs when the business is disposed to a third party. The buyer will often (but not always) be a strategy acquirer, who is usually a large company in the same or similar business as the purchased firm, either as competitor, supplier, or customer, and will often integrate the company's business with its own following the acquisition. (Cumming & Macintosh 2003)

In the case of a trade sale exit, we could observe the advantage and disadvantage from following factors:

Advantages:

- A premium will usually be paid by the acquirer for the synergy effects, for example: enlarged market share, customer relation or entrance in a new market.
- A 100% exit with cash returns which significant less risk.
- Lower cost than IPO.
- Shorter and incomplex process in comparison with IPO.
- Sole solution for under-sized companies.

- The company only has to convince single or a limited number of potential acquirers – instead of the strewed public investors in an IPO process.

Disadvantages

- Often causes conflicts with the management, who might lose their position in the company or their independence.
- In some countries, there exists the difficulty of finding potential trade buyers.
- In most case, the acquirer will not receive any warranties from the venture capitalists.

It is generally acknowledged that trade sale processes are faster, less costly and easier than going public, the only two arguments which against a trade sale are that the returns are typically lower than in the case of an IPO and the difficulty of finding a buyer.

While the IPO is considered by majority venture capitalists as the highest profitable way to divest, there are certain number of venture capitalists who see the trade sale as the best value – since the buyer – as inter-industry insider – knows what he is buying, the real value of the technology and the value that the potential synergy effects can bring him.

The most commonly identified problem of trade sales is, in some countries, also in some European countries, to find suitable acquirers. Most venture capitalists tend to limit their opportunities to find a partner for a trade sale by searching only within the target company's industry or geographical region. Overseas, non-sector or financial buyers are often neglected. Sale to financial buyers is actually also a very attractive alternative option in trade sale, but usually overlooked by venture capitalists, or are not favoured by venture capitalists. The reasons for this ignorance are mostly emotional, not economic, “Not attractive, if I can't make money, how can they?”; “(A financial deal) would mean we were

less successful than envisaged but you can get tired of an investment” as commented by some venture capitalists.

But there are definitely attractivenesses of selling to financial acquirers:

- Bring the early-staged investment to late-staged investment.
- Necessity of realizing capital gain (for example, need to report to investors).
- Provide a possibility for the management to keep their position in the case if the company is not qualified for IPO.
- A financial acquirer (venture capitalist) may know better about the company value than a trade buyer, or would pay more for a high asset, but low growth company.
- An opportunity to releverage the company.
- In the case of a disharmonous relationship between management and venture capitalists, the relationship could be break up through this way. The company may be better developed by a new financial investor.

3.3 Share Buybacks

In most cases of buybacks or redemption, the venture capitalists play a passive investor role, usually when other exit methods do not work or fail. This is often a result of poor performance, leading to a lack of interested buyers. Or in the case if management or majority owners refuse to accept a sale to a third party, sometime could also happen that management has better knowledge of their own activities than venture capitalists (actually better than anyone else). Exit through this way seems to become more common recently, although a buyback is the least favoured exit route (Wall & Smith 1997).

Some comments from venture capitalists concerning buyback as an exit method:

- “It happened once that two months after we completed a buyback deal, the management received a quite profitable offer!”
- “It is not that easy to do a buyback due to the difficulty of finding money by the management.”
- “It is the only way to get out in the case of wrong investments.”

3.4 Write-off

As noted before, a write-off signifies an absolute failure of investment. This is an example of a passive exit in the venture capital investment. Since the focus of this thesis paper lies on the active exit decision by venture capitalists, I will not discuss this topic more extensively.

3.5 Overview of the Exit Vehicles Used Over the Past Years

An overview of the exit vehicles used in the USA and Europe will be indicated with following figures.

Exit Channels used in USA in the previous decade

According to the statistic provided by NVCA (National Venture Capital Association, USA), using data from 1991 to 2000, the 11,686 venture capital funded companies exited in the US, 14 percent exited by initial public offering, 33 percent of them were acquired by a third party, 18 percent were failure investments (Liquidity), and the rest

were still privately held or quietly failed. During this time, acquisition was still the most chosen exit route.

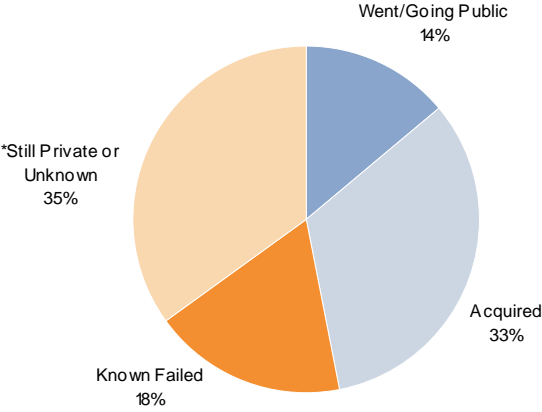


Figure 1 - Overview of the Exit vehicles used in USA in the Previous decade (Source: NVCA)

Overview of Divestments in European Private Equity and Venture Capital Industry 1997 – 2006

According to the statistic by the EVCA (European private equity and venture capital association), the total volume of divestments at cost made in 2006 amounted to €33.1 billion compared to the 2005 total of €29.8 billion, this represents an increase of 11%. In total, there were about 4,500 companies be exited in 2006, compared to 4,830 companies exited in 2005.

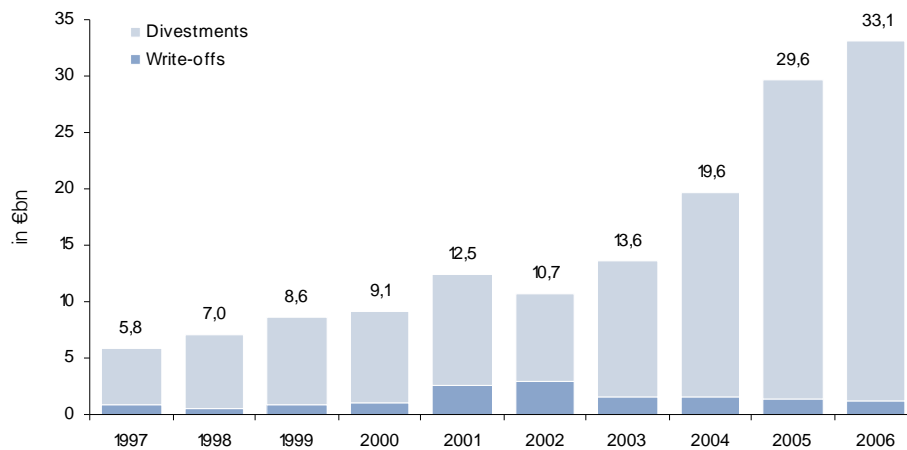


Figure 2 - Overview of Divestments in European Private Equity and Venture Capital Industry 1997 – 2006 (Note: Divestments includes all exit per IPO, trade sale and buybacks)
(Source: EVCA/Thomson Financial/PricewaterhouseCoopers)

Private Equity and Venture Capital Exit in Europe in Segment of Exit Routs used 2002 - 2006

- According to the EVCA, trade sale was the most used exit route in Europe in 2006. The proportion of trade sales amount to 22.7%, generating a value of €7.5 billion (up from €6.7 billion in 2005), with 1,114 divestments compared to 1,317 in 2005.
- 17.1% of divestment was done by repayment of preference shares or loans, thereby constituting the second largest category, the dollar amount divested decreased to €5.7 billion from €7.0 billion in 2005.
- Divestments by public offering (IPO and sale of quoted equity) increased to €5.3 billion from €2.7 billion in 2005.
- The proportion of write-offs has been decreasing for several years already, 2006 being no exception. The value of firms written off decreased from €1.4 billion in 2005 to €1.3 billion in 2006, representing only 3.8% of the total amount divested.

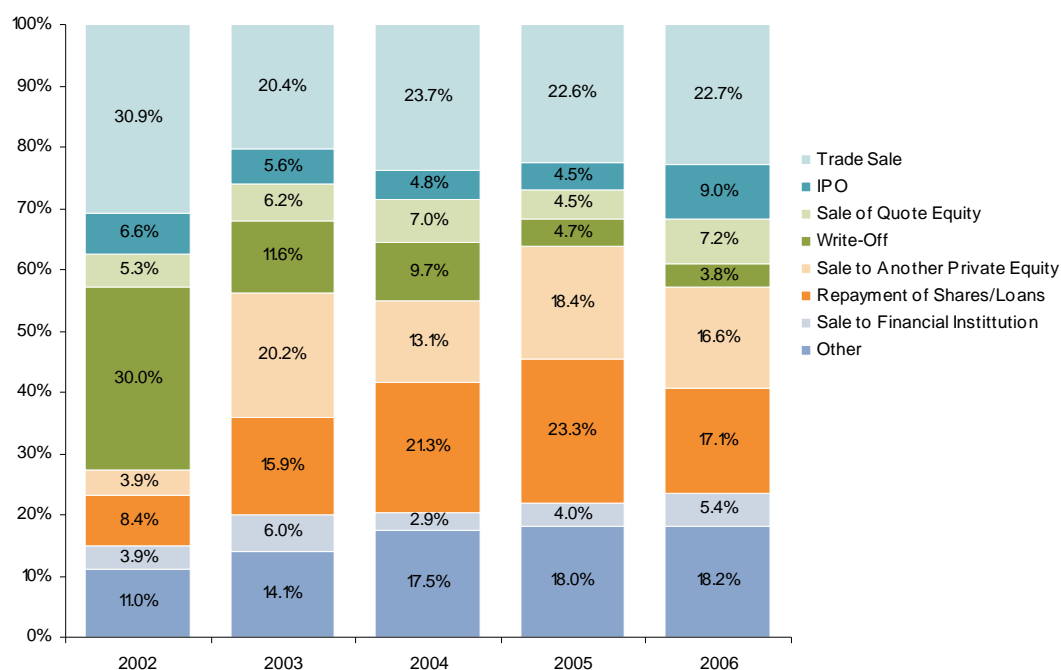


Figure 3 - Private Equity and Venture Capital Exit in Europe in Segment of Exit Routs used 2002 – 2006 (Source: EVCA)

4 Factors Affecting the Venture Capitalists' Exit Timing

An active exit decision by venture capitalists includes *when* they decide to divest and using which *type of exit* method they choose.

In this chapter, I am going to discuss the exit timing of venture capital investment and the factors that could influence exit timing.

First of all, I try to find out which factors could effect the exit timing with the unrealistic assumption of an “ideal world”, where the impact of any difference in the exit vehicles that the venture capitalist might choose is ignored, thereby isolating those elements of the choice of exit that are endogenous to venture capitalist investing (for example, different degrees of information asymmetry between venture capitalists and potential buyers in case of an IPO or a trade sale). After that, I will try to identify a variety of “real world” constraints on venture capitalist exit and the diverse factors that influence exit timing in different exit strategies.

4.1 Exit timing in “a perfect venture capitalist world”

There are servaral studies about the analysis of exit timing in the “perfect world”. Cumming’s theory is one of them (Cumming 2002). According to his research, investigation on the best exit timing is equivalent to finding out the optimal investment duration for the venture capitalists. He made several assumptions for his study, which are stated below:

- The venture capitalist acts as an active type of investor, thereby adding value to the enterprise. (there are no other value-added investors)

- At any given point in time, the venture capitalist can sell his interest in the entrepreneurial firm and the price at which he sells his investment is the best representation of the company's true value at this point in time. (i.e. there is no information asymmetry)
- Therefore, the exit vehicle chosen does not influence the exit price.
- The fund has an infinite life span; this means that the exit timing is independent of the fund investors' wish to receive back their invested capital and the profit of the fund within a certain amount of time.
- Venture capitalists can freely allocate the capital that they gain from one investment to another investment.

Given these assumptions, a venture capitalist will exit an investment when the expected marginal value added resulting from his efforts is lower than the expected marginal cost of these efforts. According to Cumming's theory, there are three situations which will cause the exit, or rather, determine the exit timing.

The first one is when the marginal value and maintenance cost curve cross, namely at the point where the venture capitalist's skill set is exhausted.

The economists generally find the venture capitalist's value added should be highest at the beginning of the investment relationship, when the managerial and financial advice the venture capitalist is capable to bring in is most valuable; he can support the identification and implementation of product development and marketing strategies, advise on legal and accounting aspects, etc. But the value-added that the venture capitalist is able to provide will decline over time, as the management becomes more experienced, any

organisational and operational issues are resolved and the company's business contacts (legal, accounting, distributions, suppliers and customers, etc) are established.

Although the maintenance costs also decrease over time, a significant part of fixed costs contained in the maintenance cost stays the same, thus the curve of the projected maintenance cost (PMC) declines at a much slower rate than the curve of projected marginal value added (PMVA); this leads to a certain point in time where the two functions cross, at which point, the investment is not profitable any more for the venture capitalist, and it is time for him to turn his investment into cash and move on to other ventures to which it can add more value.

Figure 4 shows a graphical representation of the relationship of the two curves.

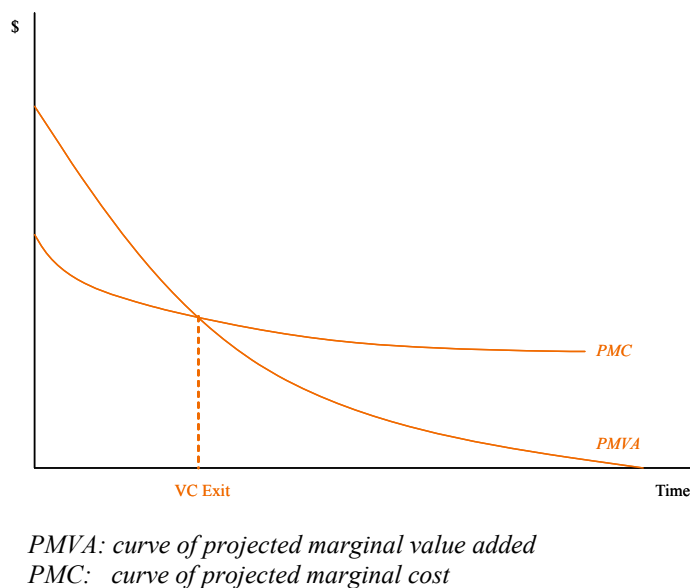


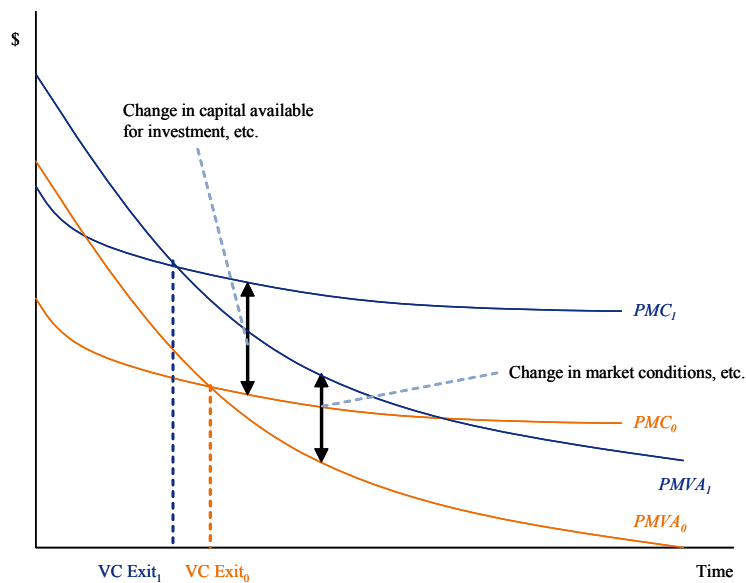
Figure 4 – Crossing of the Marginal Value Added Curve and Marginal Maintenance Cost Curve

The second situation: Any internal or external impulses result in shifts of the marginal value added and/or the marginal maintenance cost curves.

Unexpected shocks can happen that shift one or both of the curves. The shift can cause the curves to move away from each other, but it can also result in a convergence of those two curves. Consequently, the exit timing can be delayed or accelerated. For example, a complementary technological development in the market could greatly drive the value of the company's own technology. In contrast, if the company's technology proves unworkable, the marginal value added curve will be relocated; or if the technology is outdated by an advance external technology development; or an economic recession radically shortens the demand for the company's product, both curves will be removed from their original positions. In the extreme case, the marginal value added curve could be abruptly drawn under the cost curve and could remain under the cost curve permanently, so that a profitable exit becomes impossible, and a write-off becomes the only viable option for the venture capitalists.

The third situation: The venture capitalist receives new information pertaining to the actual location of the marginal value added and the marginal maintenance cost curves.

Normally, the venture capitalists will try to draw the marginal value added and maintenance cost curves actively after entering into an investment. But in some cases the venture capitalist later realises that the curve has been drawn incorrectly; for example if the maintenance cost curve doesn't represent the real cost movement anymore, because for example the entrepreneur turns out to be far more difficult to work with than originally assumed. In these kinds of cases, the venture capitalists have to re-draw the curves with the result that the curves may intersect at a new point, so that the time of exit has to be changed to satisfy the exit conditions. The effect of this re-drawing is shown in Figure 5.



PMVA0: forecasted curve of projected marginal value added
PMC0: forecasted curve of projected marginal cost
PMVA1: redrawn curve of projected marginal value added by VCs after the new information
PMC1: redrawn curve of projected marginal cost by VCs after the new information

Figure 5 – Re-drawing effect on the Marginal Value Added Curve and Marginal Maintenance Cost Curve

The theory of the exit timing introduced above is based on a series of unrealistic assumptions – for example, that the venture capitalist is the only one who has the ability to add value to the companies by executing as an active investor. But in fact, there will be other potential investors besides the venture capitalist that may provide additional services to the company aside from the capital; and among these investors, there is a significant number of strategic investors/acquirers. Due to the characteristics of strategic investors (for example, that they operate in the same or in a similar field of business), they have an even stronger ability to monitor the investment and to reduce the information asymmetry between entrepreneurs and investors. Therefore, strategic investors are able to more accurately assess the company assets' value and will be willing to pay a higher price. The venture capitalist may thus incur significant opportunity costs if he maintains the

investment in the company. In this case, the venture capitalist will sell his investment although the value added is still above the maintenance costs, so that an earlier exit time is chosen.

As mentioned, the information asymmetry is an important factor which influences venture capital decisions in various aspects. The degree of information asymmetry changes during the life of the venture capital investment, it is different at the time of exit compared to when the investment was placed initially. The effect of information asymmetry on the exit timing will be discussed in the following subsections.

The model assumptions also stated that there is no difference between the different exit forms, but in the real world, the exit routes do matter – there are in fact numerous factors that could affect the exit timing, especially in the case of an initial public offering; for example, market condition, grandstanding of young venture capitalists, the reputations, etc. These factors will be discussed in the next sub-chapter.

4.2 Factors affecting the Exit Timing in the Real World

In the real economic world, the assumptions mentioned in the last section are not applicable any more. Due to the special characteristics of the private equity and venture capital industry (private hold), the information asymmetry seems to be the most obvious factor and exists throughout the whole duration of the investment. However, starting from when the investment is being placed by the venture capitalist, the degree of the information asymmetry decreases over time with the development of the company. Drawing benefits from the venture capitalist's involvement and assistance in the management, the venture capital invested company builds up its own business relations, a proven product, an established market, a more experienced management, better internal control and an information system. All these will alleviate the risks that confront investors in the earlier

stages of the firm's existence. Even so, the degree of information asymmetry will be higher compared to that of a typical public company. A public company will have a lengthier operating history. Moreover, much more information about a public firm will be on the public record, both as a consequence of the operation of private information gathering networks and mandatory disclosure requirements (Hanley, Kumar & Seguin 1993).

The level of information asymmetry is one of the factors which influences the willingness of the potential acquirers to pay for the venture capitalist's interest, investors that lack understanding of the firm's product and/or market will reflect that in their valuation of the company. The acquirers who have the better ability to overcome the information asymmetry will consequently tend to be the higher valuing purchasers. It is therefore essential that the venture capitalist reduces the information asymmetry between their portfolio companies their new owners, if they want to maximize their profits. In one sentence, the severity of the information asymmetry confronting the firm will be a factor in the choice of investment duration.

There are various factors in a venture capital investment which will determine the degree of the information asymmetry. In this section, I will introduce the factors that may affect the exit timing decision associated with information asymmetry.

4.2.1 Entrepreneurial Firm Quality

One of the reasons that cause information asymmetry is the investment risk and uncertainty, the uncertainty can be varied to two types, market uncertainty and project uncertainty. In the venture capital investment process, all players face the market uncertainty. But at the time the venture capital firm exits its investment, only the new owner is subject to uncertainty pertaining to the quality of the target company. The venture capitalist will therefore try to minimize this uncertainty for the new owner in order to receive a higher offer. A higher quality entrepreneurial firm has greater growth potential

and is therefore less risky compared to the lower quality one. But at the earlier stages of the investment, this information is only known by the company management and the venture capitalist. It takes time until the potential buyers also receive this information. As we discussed before, venture capitalists ensure the quality of their portfolio firms by providing their assistance and know-how to the managers of the company; assistance for example concerning the market they operate in, the product development, customer relations, etc. All of these are the means for the venture capitalist to transfer information to the potential buyers, and thereby to effectively reduce the cost of information asymmetry between entrepreneurs and the new owners at the time of venture capitalist exit. Hence, Cumming's theory suggests that the cost of alleviating the information asymmetry between the target company and its acquirer will be lower, the longer the venture capitalist stays involved with the firm's management. Low quality entrepreneurs, on the other hand, don't have to (or don't want to) wait a long period of time until the potential buyers get to know their real value.

His theory also suggests that if the venture capitalist actively participates in the development of the company for a longer period of time, the new owner's monitoring costs after the acquisition will be lower as well. Summarized, the hypothesis Cumming made is that venture capitalists will invest in higher quality companies over longer periods of time in order to maximize their exit return by contributing the appropriate time and effort to enable new owners to obtain sufficient insight about the target company, so that information asymmetry related to the target company will not pose a problem anymore.

In contrast, Gompers put forward an alternative hypothesis, namely that venture capitalists appear to exit their high quality investments earlier in order to strengthen their reputation as highly qualified venture capitalists with successful exits; this will enhance their chances to attract new financial investors or new high quality entrepreneurial firms.

But the empirical evidence pertaining to both Cumming's and Gompers' studies indicate a negative relationship between the quality of the entrepreneur firm and the

duration of the investment. Venture capitalists, in reality, do tend to exit their investments earlier if the quality of the firm is higher. This result is consistent with Gompers's theory of venture capitalists' reputation implication, which also affects the IPO timing of venture backed firms (this will be discussed in the next section).

Of course there might be other explanations for this result, for example that the higher quality companies develop more rapidly, so that the maturity process is shortened and the cross of the marginal value added curve and the marginal cost curve will be met ahead of time; or that the high quality entrepreneurs will often be high price bid actively by the market observers. However these considerations are still lack of empirical evidence.

4.2.2 Development Stage of the Entrepreneurial Firm

Before I discuss the relationship between the stages of the firm's development and the duration of venture capital investment with respect to information asymmetry, I will introduce briefly the categories commonly used to describe the stages of venture capital investment: seed, start-up, early stage, expansion, buyout, pre-IPO and turnaround (Macdonald & Associates 1992; Venture Economics 1988).

A seed stage financing involves firms mostly only in the idea formation stage without a full product development. The first stage (start-up) financing is given to companies who are in the process of developing products, testing prototypes, and building up a management team. A firm in early stage has already achieved its first traction, already sold products on the market, but is not yet ready to commence full commercial expansion. Other than the seed, start-up, early stage and expansion stage, the other three stages are financings involving firms in later stages of development. Buyout financing provides capital to enable the operating management to acquire control of a product line, a division or a company. Pre-IPO is a special form of financing for firms in the last stage before going public.

The influence of the firm's development stage on the investment duration can be considered in several respects. The most basic one: if the venture capitalist finances the company in one of the earlier stages of development, it will take longer until the investment comes into fruition – the duration of the investment will therefore be longer. Further considerations are the higher costs of uncertainty and information asymmetry when investing in a firm that is still in an earlier stage. Also, the adverse selection costs and the moral hazard costs are higher for firms that are young and do not possess a great amount of experience. The venture capitalist has to reduce these kinds of agency costs and information asymmetry during their engagement in the company development. Therefore, Cumming hypothesized that venture capitalists will maintain early stage investments over a longer duration in order to reduce costs associated with hidden action and hidden information between entrepreneur firm and the potential buyer.

Gompers provides a different theory, namely that, because of the significant moral hazard cost in an early stage financed companies, the total investment period may be shortened due to the high monitoring cost.

The empirical results from these two studies are identical again and do strongly point to the hypothesis put forward by Gompers. The seed, start-up, expansion and early stage investments tend to be exited sooner than later stage investments. Combining the two theories from the venture capital expertise, longer duration might alleviate the agency costs caused by information asymmetry between the entrepreneur firm and the owner, but not to such a degree to counterbalance the agency costs of maintaining earlier stage investments over a long period of time.

4.2.3 The Nature of the Firm's Assets

We have to classify two groups of venture capital investment, the high-technology investments and the conventional investments. Due to the special features of the high-technology companies – namely the highly specific technology value and highly quoted intangible assets – there might be higher moral hazard costs associated with high-technology investments. Also, the selection cost and other agency costs tend to be more significant based on the difficulty of evaluation and access to the technology information. Thus, Cumming's hypothesis is that high-technology investments take longer to reduce the information asymmetry and the agency costs caused by it, so the high-technology investments necessarily have longer investment periods.

Once again, there are other opinions concerning this point. MacIntosh, for instance, found that since entrepreneurs in the high-technology business are highly motivated and self-selecting, hidden action costs connected to the financing of high-technology companies may be insignificant. Hence the timing of exit from an investment will not depend on technology, because agency costs among high-technology firms can be considered trivial.

From a different point of view, Gompers states that the duration of technology investments is determined by other factors. For example, in his research he found out that biotechnology and pharmaceutical venture capital investments have generally much longer investment durations because of their long development time; whereas investments in software companies normally have relatively short durations.

4.2.4 Structure of the Investment

A venture capital investment can be paid out to the investee in several ways, staged or lump sum. Staged financing is structured in several rounds with periodic capital flows to the entrepreneurial firm. And the lump sum financing means that the full investment

volume is given out at once. A majority of venture capital investments are staged investments, as this method of financing can also be used as an important control mechanism for the venture capitalist. The venture capitalist can continuously monitor the firm's progress and threaten to withhold further financing if the performance is not as expected. (Gompers & Lerner 1999). This financing structure increases the management's self-monitoring motivation, which on the one hand results in less severe information asymmetry at the time of exit, and on the other hand reduces the monitoring cost of venture capitalists. Because of the reasons discussed above, the venture capitalist's motivation to maintain an investment over a longer period of time is greatly diminished.

There is another form of venture capital investment structure, which is called syndication investment. A syndication is where two or more venture capitalists cooperate to jointly invest in an entrepreneur company, which provides the advantage of risk reduction due to risk sharing, and also provides better and more information so that more efficient investment decisions can be made. These advantages lead to a reduced need for venture capitalists to keep their investment compared to the case where one single investor is involved. The more venture capital investors involved, the better the signal that will be sent to the new owner that information asymmetry will be less severe. The theory in Cumming's study is that the need to maintain an investment over a longer duration to mitigate informational asymmetry between the entrepreneurial venture and the new owner(s) is diminished when investments are staged and/or syndicated

The study by Gompers confirms this opinion, he argued that if information asymmetry and agency costs do not exist, the staged financing would be irrelevant. But in the realistic venture capital industry where the affect by information asymmetry is particular obvious, the investment structure accounts for a very important factor on decision of the investment duration. The empirical results are significantly consistent with their theoretical hypotheses.

4.2.5 Capital Available for Investment

Due to the characteristics of venture capital investment, venture capitalists play a much more active role in the entrepreneur firm than other types of financial investors. The venture capitalists monitor their investment actively, they spend plenty of time to help management building up business relations and to create a good track record. All of these activities require time and energy from venture capitalists. But the capacity of venture capitalists is not unlimited, if the activities required by venture capitalists exceeds their capacity due to the large number of investments, it becomes difficult for the venture capitalists to monitor all of them. For this reason, if additional capital is available in the funds, venture capitalists can devote more to their existing investments, in which case it may be more profitable to exit the investment earlier in order to reallocate the funds to new firms..

An increase of the available capital also causes an increase the costs of monitoring and adding value in their investment, which may lead an earlier exit of their current investments as well. Therefore, the basic theory supported by Cumming's empirical study suggests that the investment period will be shorter if capital received for investments increases.

The result of empirical studies point to a significant relationship between the capital available and timing of exit, the bigger the amount of capital received in the industry, the shorter the duration of investment. The results also support the multitask principal agent theory from Holmstrom and Milgrom: if a venture capitalist's opportunity costs increase, it could be a great incentive for venture capitalists to act against the interests of their existing portfolio companies, to exercise a premature exit although it is not the optimal decision for the existing companies. This result is especially significant in countries where the venture capitalists spend more time on monitoring like, for example in the US.

4.2.6 Reason for Exit

In a “perfect world” with all of the assumptions as stated in the previous section, there is only one reason for the venture capitalist to exit their investment, namely, if the investee firm is already fully developed and satisfies all the requirements for an exit. But in the real world, there are more reasons for a venture capital investment exit. An exit may be pre-planned, inspired by an unsolicited offer (although a pre-planned exit belongs to the principal features of venture capital investment, some of the venture capitalists don’t really have a specific exit plan in mind; these are called passive investors who usually wait for a casual exit opportunity), or an involuntary exit because of the expiration of the fund period.

In a pre-planned exit, the venture capitalists take a long term view and prepare for the different possible situations in which they will exit their investments; they also plan the procedures in an exit process in advance. This kind of venture capitalists will exert effort to reduce the information asymmetry as much as possible before the exit time comes, and try to mitigate the management interest conflict for the exit already before or during the investment. All of these arrangements provide a better readiness for the exit, and ultimately help to avoid a possible retardation in the exit phase. Therefore a pre-planned exit may cause a shorter investment period and an earlier exit.

An unsolicited offer presents the venture capitalist with an opportunity to exit before the point in time at which the exit is planned to take place. It offers either a very attractive price for a high quality entrepreneurial firm or an opportunity for those badly performing entrepreneurial firms to exit. Both of these two kinds of offers lead to an earlier exit.

An involuntary exit occurs usually in a situation where the venture capitalist has to realize his capital gain, or the limited venture capital fund period runs off. In these cases, the investee firms have normally already run out of a venture capital investment period and exceeded the normal investment duration. The investments with this kind of exit reason

may have a longer investment duration than the average companies in a venture capital cycle.

In the study of Cumming, there is also empirical evidence provided to support the above mentioned theory.

4.2.7 Choice of Exit Strategy

One of the additional factors which affect the exit timing decision is the choice of exit vehicle, which is actually an interdependent factor with exit timing in the exit process. While the exit timing affects the choice of exit vehicle, the exit strategy decision also impacts on the exit timing with respect to implications from information asymmetry.

The level of information asymmetry between the entrepreneurial firm and the potential buyer varies between different exit routes. In the case of IPO, the share issue faces public investors, these public investors as the potential buyer are dispersed and lack of the inter industry knowledge, they have no access to the technology information. As noted, the majority venture capital invested company are high-technology companies whose assets are basically intangible assets, and the public investor are low qualified in evaluation of these technologies. On this account, IPOs are considered as the exit route accompanied with the highest information asymmetry degree. To mitigate the agency cost caused by information asymmetry, venture capitalists who choose the IPO as the exit route of their investments have to wait longer till exit.

In comparison, exit by acquisition - sell the entrepreneur firm to a third person, the buyer will be usually a strategy acquirer whose business activities are in the same or similar industry, or at least related to the business of the purchased firm. The strategy acquirers have therefore higher ability of understanding the purchased firm's market, its business and have higher ability to evaluate the company's technology. The true value of the purchased firm will be sooner recognized by the new owner; hence the venture capitalists can exit their investment earlier.

An exit using buyback, involves the lowest degree of information asymmetry, in that the management of the entrepreneur firm knows best the value of the purchased

company. The venture capitalists do not need to certify the quality of their investment to the management. Nonetheless, there could also exist some information asymmetry, but in another aspect, that the management knows more information which the venture capitalists don't know.

The impact of the decision of exit strategy on exit timing are not only the consequence of the information asymmetry, it also demonstrates in other perspectives, particularly if the venture capitalist chooses IPO as exit route. The decision for IPO timings involves diverse factors besides the asymmetric information, for example market conditions, venture capitalists' reputation or contractual constrain, etc. They will be discussed in a separate section afterwards.

4.2.8 Legality and Venture Governance Impact

The impact of legality environment and the venture governance on the venture capital investment can be observed in many aspects. The focus in this part is to show the several obvious influences on the exit timing, the impact on choice of exit vehicle will be discussed in the chapter 5.

The legality index is a broad measure based on La Porta *et al.* (1997, 1998) which includes the following factors: civil law systems in comparison to common law systems, the efficiency of the judicial system, the rule of law, corruption, the protection of property rights, risk of contract repudiation and shareholder rights. (according to Berkowitz, Pistor & Richard (2003) the legality index is defined as the weighted sum of all of these factors). The legality index and the venture governance differ massively across different countries. The effects of a better legality index and a mature venture governance on the exit timing will be discussed here in three aspects: (i) limited risk, (ii) better information source, (iii) syndication and co-investment.

An advanced, developed legal system is normally associated with a more transparent financial market, a strict accounting system, better secured contract abiding, severe punishment against defraud that provides better substantive legal content pertaining to investing. All these systems on the one hand facilitate the venture capitalist's activities in their entrepreneurial firms and protect them from moral hazard of the management. On the other hand, these systems promote the acquisition decision made by the potential buyers. They help to reduce the uncertainty faced by risk averse buyers, and thus shorten the time the potential buyer needs to exam and confirm the quality of the purchased company. This consequently also leads to a sooner exit for the venture capitalists.

A better venture governance is developed by a longer venture capital market. As is well-known, the US has the oldest and most successful venture capital market (Gompers & Lerner 1999). An advanced venture governance enables the venture capitalists to exchange more information and experience, help to avoid that fraud happens and also provides more information access for the public investors. All these tasks reduce the cost of information flows and reduce the time required to screen and close a deal (Cumming, Schmidt & Walz 2004). At the same time they reduce the information asymmetry and the agency costs. Therefore a sooner exit will be allowed.

With regard to syndication, a problem can potentially arise when an existing lead inside investor cooperates with follow-on outside investors who do not have the same access to information about the quality of the firm. The inside investor may lead the follow-on investor to invest at an inordinately high deal price, to invest in negative NPV projects, and/or ask for a larger contribution than actually necessary (Lerner, Admati & Pfleiderer 1994). A higher legal index and better venture governance help avoid this kind of problems and encourage the co-investors join a syndication deal. As discussed previously, a syndicated venture capital investment may also cause an earlier exit.

4.3 Factors Affecting the IPO Timing Decision

Although there are a variety of exit vehicles venture capitalist can choose, initial public offering still seems to be the most favoured by venture capitalists, and generally considered to be the most profitable exit route. The decisions (when and how) for going public of a venture capital invested company are basically made by the venture capitalists. They typically incorporate powerful control rights or rights to hold a seat in the company's board of directors in the investment contract. This allows the venture capitalists to bring the firms public at times they deem optimal. (Gompers & Lerner 1999). Moreover, the venture capitalists have more experience in executing IPOs than the entrepreneurs. Some existing papers suggest several factors which might influence the venture capitalists' decision on IPO timing. These factors will be discussed below.

4.3.1 Market Conditions

There are several studies that analyse the impact of market conditions on IPO timing and provide empirical evidence. Jason Draho mentioned in his study in 2000 that the public investors rely on both public and firm specific information to value the company. If the market is efficient, the market price of firms should reflect all public information. The proceeds from an IPO, and therefore its value to an entrepreneur, will depend on the market conditions. The entrepreneur will therefore wait for a favorable market condition before going public. As a consequence, the company will go public after an abnormal price increase appears. IPOs should only occur after a price run-up, but never in a down market. If a venture capitalist waits for the last point before the peak of the price run-up in order to achieve the highest market price, but then overruns the market peak, he misses the opportunity to exit and has to wait for the next price run-up. For this reason, all the venture capitalists try to go public shortly before the market reaches peak; this can lead to clustering of IPOs near market peaks.

There are number of papers that have documented that IPOs occur following price run-ups. For example, the study by Lerner (1994a) of the IPO decision made by venture capitalists for biotechnology firms found out a strong correlation between the equity market index and the IPO probability, namely that a ten percent increase in the equity index level leads to an approximately 21% increase in the probability of an IPO. Pagano, Panetta and Zingales (1998) used a sample of Italian firms and showed that high market valuation of similar firms have the most significant impact on the decision of a firm undertaking an IPO. In their analysis, an increase of the industry market-to-book ratio by one standard deviation results in an increase of IPO probability by 25%. Rajan and Servaes (1995) found that IPOs are usually undertaken close to the peaks of the equity valuation from the same industry.

In his study from 1999, Gompers found out that there is a positive correlation between IPO volume and public equity market valuations. He used a sample of venture capital backed IPOs in the biotechnology industry between 1978 and 1992 and compared the number of IPOs with the industry index. He found that the number of IPOs do indeed coincide with the peaks of the equity market valuations. This result also proves that venture capitalists have the ability to estimate the market, and have the knowledge to take companies public at favourable times where the industry valuations are highest and the market conditions are the best.

The correlation of the number of IPOs and the movement of industry evaluation will be shown in the following figure.

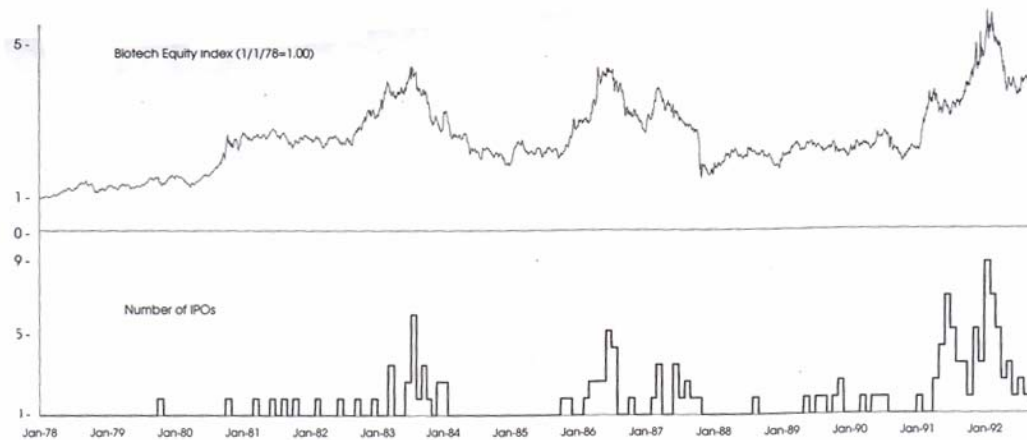


Figure 6 - Number of IPOs and the movement of industry evaluation

Source: Gomper & Lerner, 1999. Venture capital cycle

4.3.2 Reputation Implication on IPO Timing

Venture capitalists, as a long-term financial player in the capital market, try to seek and keep a positive reputation in the market. A favourable reputation will help them to attract investors, to develop and maintain useful working relationships with entrepreneurs, and to establish relationships with lawyers, investment bankers and auditors, as well as others parties that are potentially useful to their portfolio companies (Cumming & Macintosh 2003)

A good reputation seems to have an especially great impact in the venture capital industry due to the venture capital fund structure – venture capital funds are typically limited partnerships with fund investors where the lifetime is predefined in most cases. This limited lifetime forces the venture capital firms to raise capital periodically with a completely new limited partnership. A venture capital firm has to terminate its operation if it is unable to raise a new fund. Establishing a reputation is therefore essential for the venture capital firm in order to attract new funds continuously.

But does the reputation problem influence the decision of IPO timing made by venture capitalists? There are several studies discussing this topic, of which the empirical study by Gompers in 1996 provided the most significant empirical evidence.

His hypothesis suggested that only the young venture capitalists will be influenced by the reputation incentives in terms of the IPO timing decision. Because only younger venture capitalists have incentives to show their proficiency to the potential investors, this is the so-called “grandstanding” incentive of young venture capitalists.

This incentive implies that the young venture capitalists bring their portfolio firms public earlier in order to demonstrate their proficiency in the selection and creation of companies with a high probability of going public. Gompers’ model of grandstanding also indicates that younger venture capital firms are willing to sacrifice part of their profits by taking their portfolio companies public at a point of time where the return on the investment has not yet reached its maximum level. In contrast, the reputation incentives do not have evident impact on seasoned venture capitalists with established good reputation, because they have already proven their proficiency and the investors have evaluated their performance over many years and believe in their high ability. Therefore the grandstanding hypothesis suggests that the correlation between taking companies public early and the ability to attract new funds should be stronger for young venture capital firms.

The empirical results in Gompers’ study are totally in support of the grandstanding hypothesis. Based on his data sample, there is a significant difference between the average age of IPOs backed by younger (56 months) and by seasoned (80 months) venture capital firms. Furthermore, young venture capitalists on average sit on the board of directors in their investee firms for a shorter period of time compared to older venture capitalists, namely 25 and 39 months respectively. Summarized, grandstanding is a significant factor affecting the decision of IPO timing by young venture capitalists.

There are also other explanations for the venture-backed companies going public earlier, one of them is that investors recycle money with asset classes. Venture capitalists bring companies public earlier in order to return the proceeds to fund investors, hoping that these investors will agree to provide additional funds for a new round of investments.

4.3.3 Underpricing – Cost of Rapid Exit

The incentive of “grandstanding” motivates the young venture capitalists to bring their investments public earlier, even though the companies are usually not yet ready for an exit. Gompers’ grandstanding hypothesis suggests that the companies going public that are backed by young venture capitalists are be less mature; they go to market earlier than if they would have been financed by a more seasoned venture capitalist. One cost caused by young venture capitalists going public earlier is that IPO underpricing tends to be more pronounced in these cases. This cost is consistent with the cost of information asymmetry theory as noted previous. The earlier disinvested companies don’t have enough time to alleviate the information asymmetry between the entrepreneurial firm and public investors, and therefore cause a greater underpricing.

The empirical results of Gompers’ study support his grandstanding hypothesis once again, the IPOs brought by unseasoned venture capitalists are more underpriced. In his data sample, IPOs undertaken by young venture capitalists are underpriced at the IPO date in average of 13.6% , compare to 7.3% for IPOs undertaken by seasoned venture capitalists.

There are more studies providing empirical evidence for the greater underpricing of earlier IPOs. Muscarella and Vetsuypens (1989) indicate that the older the firms who undertake the IPOs, the lower the underpricing. In Rock’s (1986) IPO model, he states that more seasoned venture capitalists have longer track records, and more experience when it comes to reducing asymmetric information and underpricing. In a study in 2008 Rosetto found out that venture capital backed IPOs experience a greater degree of underpricing

during hot issue periods – as we know, a hot issue period is a period where more early issues occurs.

5 Factors Effecting the Venture Capitalists Choice of Exit Vehicle

As already mentioned several times, exiting is an important part of the venture capital business. As most venture capital investments take the form of equity investments, the returns of venture capitalists consist largely of capital gains. And due to the nature of most venture-financed companies, venture capitalists often do not receive any dividend payments during the lifespan of the investment. The venture capitalist's choice of the optimal exit vehicle is therefore of utmost importance. It can even be argued that the feasibility of the various exit vehicles for a certain investment constitutes an important factor when deciding whether or not to invest in a company in the first place. Developed stock markets play a particularly important role in making exits possible of highly profitable companies. Moreover, venture capitalists will often incorporate certain features like "drag-along" rights or put options into the venture capital contract to facilitate exit on favourable terms. Such rights give the holder (typically the venture capitalist) the possibility to make sure that other shareholders sell their shares at the same time as himself.

Although the price, or the internal rate of return of the investment, is viewed by many as one of the most important factors when choosing the optimal exit vehicle, there are in fact a wide array of other factors that are equally important. Many consider IPOs to be the superior channel of exit because of the high returns they produce and because they allow management to stay in charge of the firm (Wall & Smith 1997). Trade sales are favoured where an IPO is not feasible (for example if the company size is too small). But to think that IPOs are inherently more profitable than trade sales can be misleading. According to Bienz (2005) higher returns for IPOs can be attributed to a selection bias – only highly profitable firms go public, while less profitable companies are sold to strategic acquirors, bought by inside managers, or written off. Nevertheless, there are empirical findings that indicate there is indeed a "pecking order" of exit choices. Cumming & MacIntosh (2003) find evidence in support of their hypothesis that "higher quality" firms

would be exited by – in decreasing order of likelihood – IPOs, trade sales, buybacks and writeoffs. (“Quality” here would be defined as an aggregate of a variety of different factors that influence the venture capitalists exit decision; Cumming and MacIntosh use the firm’s market-to-book ratio, or the ratio of the proceeds of exit in relation to the cost of investment, as a proxy of the factor “quality” in their evaluations)

A further justification of the importance of an exit strategy is put forward by Black and Gilson (1997). They posit that venture capitalists provide much more than money to the companies in their portfolio. They assist and monitor management performance, they hold the power to act using the venture capitalists levers of control (for instance veto powers or the right to have a seat in the board of directors), and they provide reputational capital, that is, the venture capitalist’s ability to enhance the company’s credibility when dealing with third parties. These non-financial services that the venture capitalist provides are particularly useful for early-stage companies. As the company’s management gains its own experience and reputation over time, the relative usefulness of these types of inputs decline more and more. By this time, it would be much more profitable for the venture capitalist to invest these types of non-financial services in a new round portfolio firms that are still in their early-stages – hence the importance of choosing the optimal exit channel as well as timing.

According to Cumming (2003), the majority of exits that take place are indeed preplanned and controlled by the venture capitalists. From a sample of 179 investment rounds in 132 entrepreneurial firms by 17 European venture capital funds he reports that there were only 4 unsolicited offers, 12 exits for reasons of market conditions, 7 internal conflicts giving resulting in write-offs, 2 exits for fundraising reasons, and 1 exit inspired by fund termination. In all other cases the exit was planned and carried out by the venture capitalists.

In this chapter I am going to discuss some of the factors that influence the venture capitalists choice of exit vehicle, for example asymmetric information, possible transaction synergies between the company and its acquiror, cost considerations and so on.

5.1 Information Asymmetry

When determining prices for any transaction, the parties involved often have to deal with the problem of asymmetric information. This is especially the case when confronted with venture-backed companies that frequently operate in the high-technology sector (such as biotechnology, communications, electronics, energy, environmental technology, and so on) where a great proportion of the value of the firm is made of human capital and other forms of intangible assets. (Noe & Rebello 1996) The problem with acquiring intangible assets is the difficulty in assessing the value of the underlying assets. When facing the task to correctly assess the value of intangible assets, one is subject to substantial uncertainty and information asymmetry, since venture-backed companies often do not yet have substantial operating profits and a long track record of sales.

At the time of the exit severe information asymmetries can emerge between the venture capitalist and the purchaser of the venture capitalist's interest depending on who the prospective buyer is, in what sector of the economy the company is operating and how old the company is. Older companies are more likely to have a proven product and an established market. One can also assume that there is more information publicly available for older firms than for very young companies. The amount of information asymmetry will therefore directly influence the amount of money the prospective buyer is willing to pay for the portfolio company, resulting in an information discount that depends on the potential buyer's ability to mitigate the information asymmetry problem. Since different forms of exit will attract a variety of potential purchasers, the existence of information asymmetry is an important factor to consider when choosing the appropriate exit vehicle. (Cumming & MacIntosh 2003)

In IPOs, the shares of the company are offered to public investors. Institutional investors that often acquire large portions of the shares are typically less sophisticated than strategic acquirers since they are generalists and do not possess a high degree of expertise in any particular technology. Even venture capitalists with great experience, having guided many firms through their process of going public, are unlikely to be able to match a strategic investor's capability to assess the true value of a high-technology company. Although seasoned venture capitalists can have the experience to help reduce information asymmetries, they are unable to fully resolve this problem.

For this reason, an exit through IPO may not always be the optimal strategy, especially when dealing with young companies in high-technology fields. Strategic acquirers are often much better at evaluating the value of a firm's technology. This is the case because a strategic acquirer will often be a larger company that works in the same or in a related business (Bayar & Chemmanur 2006). Their knowledge of the market sector the firm operates in further facilitates their ability to evaluate the firm's (tangible and intangible) assets. The fact that – in a trade sale – the acquirer will purchase the whole company, results in a greater bargaining power for the strategic acquirer than for any small shareholder when ownership is highly dispersed. He will therefore be able to demand and receive better access to privately held information.

Gompers and Xuan (2008) discuss some factors that can help mitigate information asymmetries between acquiring firms and their venture-backed potential targets. They identify three mechanisms that can alleviate this problem: firstly, because venture capitalists repeatedly sell their portfolio companies through acquisitions, they may be able to certify the quality of the assets that an outside party is buying because they are “staking their reputation” on not selling overvalued assets. Secondly, if there are personal and professional relationships between the venture capitalist and *both* involved parties, they may be able to act as a “bridge” for the asymmetric information (this bridge can be particularly strong, if both acquiring and target firms are/were financed by the same venture

capital investor). They define bridge building as “the credible conveying of information through personal relationships between two firms”. Thirdly, geographic proximity may also be a factor in reducing asymmetric information between the two companies, since especially technology firms tend to cluster in the same geographic areas (for instance Silicon Valley). It is definitely easier for the acquiring firm to get access to information, if the firms are closer to each other, as there is also a bigger probability that managers from the two parties have colleagues or associates in common that can help in resolving the asymmetric information.

Interestingly, Gompers and Xuan (2008) also find that transactions where a venture capitalist acts as a bridge are more likely to be carried out using stock of the acquiring company. Target firms that are concerned that the acquirer may be overvalued are less likely to accept stock as payment. It can therefore be stated that bridges run in both directions, resolving the asymmetric information issue for both the acquiring and the target companies.

Information asymmetry is no issue at all in the case where a buyback is chosen as exit vehicle. It is obvious that the insiders know more about the company as anyone else, because they have unlimited access to all relevant information. However, according to Cumming and MacIntosh (2003) it is not merely *access* to information that is most important for evaluating the company’s assets, but the ability to correctly interpret the available information. In young firms the entrepreneur may not be as capable of evaluating information as a seasoned venture capitalist or an outsider firm that has been operating in the same market for a longer period of time. Therefore the valuation risk is not completely eliminated in the case of a buyback.

Furthermore, another information problem arises when the firm is to be sold back to the entrepreneur: In most cases, a buyback can only be carried out if the managers borrow considerable funds, but commercial lending facilities will generally have a difficult time to effectively evaluate high-technology, high-growth businesses. They traditionally rely on the

ability to take security over the tangible assets of a firm, but these are often scarce in high-tech companies. The result will be that management will either have a hard time receiving a credit at all or only at a premium price. Although some banks have opened specialty-lending branches that cater to technology businesses, such specialty banks are not readily available in all cases. It can thus be seen that information asymmetry on the debt holders side is also considerable.

5.2 Transaction Synergies

Another factor that influences the venture capitalists choice of exit vehicle would be the potential complementarities of the firm's products or technologies to products or technologies of other companies. It seems obvious that in cases where transaction synergies can be generated, the potential acquirer will be willing to pay more for the venture capitalists interest. The feasibility of transaction synergies vary considerably depending on the choice of exit channel.

In an IPO, the firm is not incorporated into any other entity. So, on the face of it, there seems that transaction synergies cannot be realized by an exit via IPO. But taking the firm public can in fact enhance the probability of a synergistic takeover some time in the future. As long as a firm is privately held, the number of potential acquirers is restricted not only by the information asymmetry problems between the firm and its potential purchasers, but also by the firm's lack of public profile. Once the firm goes public, however, the probability of a premium takeover offer rises. In an efficient market, the expectation of a synergistic takeover in the future will be incorporated into the price of the shares, yielding a higher value for the venture capitalist – or any other early stage shareholder. (Cumming & MacIntosh 2003)

Empirical studies reveal that there is indeed evidence of IPOs that later lead to acquisition by a strategic investor. Dai (2005) finds that these “double-exits” are more common in venture-backed rather than in non-venture backed firms, a result indicating that these are not merely corrections of a mistaken IPO, given that venture capitalists are repeat investors and highly experienced in the exit process. (Bayar & Chemmanur 2006)

An IPO not only facilitates the firm’s takeover by another company in the future, but also the ability of the firm itself to acquire other companies with complementary technologies. Once the firm goes public, its shares can be taken as a compensation when acquiring another firm. This is important, as firms that operate in high-technology and high-growth businesses often do not have high cash-flows and therefore rely heavily on shares as currency in acquisitions.

In contrast to IPOs, acquisitions by a strategic investor often lead directly to the realization of transaction synergies. In most cases strategic acquirers explicitly look for firms with products or technologies that fit within their own business and where synergies are expected to be realized. Often it is also the target firm’s human capital or their intellectual property rights (such as patents) that will motivate the strategic acquirer to invest in a certain company. Synergies can also be gained by acquiring the target firm’s customer base, thus opening new distribution channels for their own products and services. Cummings and MacIntosh (2003) therefore come to the conclusion that acquisitions dominate IPOs with respect to the ability to exploit transaction synergies. But according to Bayar and Chemmanur (2006), the acquirer’s bargaining power (resulting from the better industry expertise) will allow them to extract some of the project’s net present value from the firm’s managers. It is clear though, that the acquirer’s anticipation of transaction synergies will affect his willingness to pay for the target company, but the synergistic gains from the merger will be spilt between the buyer and the seller of the company depending on their relative bargaining powers.

Buybacks clearly do not result in transaction synergies, since the firm is not integrated within another company with complementary products or services. Moreover, a buyback affects the probability of a future takeover transaction in a negative way, as buybacks often signal that the company performance is not as good as expected (otherwise one would have chosen another exit method). Finally, it will be difficult for the company to find suitable target firms to acquire itself, because they are typically highly indebted as a result of the buyback, and also because they are not able to offer shares as a means to purchase another company (as would be the case, if they went public).

5.3 Managerial Incentives

The ability of the new owners of a firm to monitor the managers after the acquisition is another important factor for the venture capitalist's choice of exit vehicle. A prospective buyer's willingness to pay for the firm depends on the agency costs for monitoring. The higher the prospective monitoring expenditures, the lower the firm's value as perceived by the new investors (Jensen & Meckling 1976) – consequently the venture capitalists exit value would be lower as well.

How likely the new owners are able to resolve agency problems with the firm's managers (i.e. how well the owner accomplishes to align the entrepreneur's interests with his own), depends to a large extent on the exit vehicle chosen by the venture capitalist since different exit channels will attract different types of investors. Even if the firm is closely monitored by investment banks and other institutions during the process of going public, this will not be the case anymore once the due diligence process is terminated and the IPO completed. And while venture capitalists mostly retain a portion of their interest after the IPO, other contractual rights – such as the entitlement to be on the board of directors or veto rights - might be reduced, leading to a shift in control rights from the venture capitalist to the managers.

According to Cumming (2002) the use of specific control rights and veto rights are more often related to acquisition exits compared to IPOs. IPOs are more often observed in cases where control or veto rights are not explicitly transferred to the venture capitalist. This also supports Black and Gilson's implicit contracting theory (1998). They argue that there is often an implicit contract between the venture capitalist and the entrepreneur to transfer control back to the managers upon an IPO exit. In contrast, when many explicit covenants are used, acquisitions are the more common outcome. Examples for such control rights can be (other than veto right and right to have seats on the board of directors):

- Right of first refusal: The investors have the right in the event the company proposes to offer equity securities to any person to purchase up to 50% of such shares. This right of first refusal will usually terminate when the shares of the company are offered to the public for the first time.
- Co-sale agreements: The managers of the entrepreneurial firm are not allowed to sell, transfer, or exchange their shares unless each holder of the preferred shares has an opportunity to participate in the sale on a pro rata basis
- Information rights on operating plans and financials
- and so on

Cumming (2002) further observes that venture capitalists hold a smaller percentage of ownership in firms where they plan an IPO exit and a majority ownership when they are preplanning an acquisition exit. This is again consistent with Black and Gilson.

IPOs usually lead to a dispersed ownership with a large number of small shareholders. Each of these shareholders only has small influence on the management and therefore no incentive to monitor. Even more so as collective action and free rider problems will arise because people want to let others bear the agency costs of monitoring. This will negatively affect the value of the firm and consequently the price that the public is willing to pay for shares in the company (Cumming & MacIntosh 2003).

Venture capitalists will not only have less ability to monitor the management, but also the incentive to do so will reduce once the IPO has taken place (Black & Gilson 1998). This is the result of the smaller shareholdings of the venture capitalist and also because the remaining shares can be sold at the stock market, granting the venture capitalist greater liquidity. On average, venture capitalists' holdings of a portfolio company are reduced by 28 % within the first year after the IPO. Three years after the IPO, only a small portion of venture capitalists still hold 5 % or more of the portfolio company's shares (Lin & Smith 1998). Therefore, even if the venture capitalist retains significant interest in the company immediately after the IPO, his influence gets smaller the more time goes by.

Cumming and MacIntosh (2003) therefore come to the solution that the ability to monitor and discipline the managers will disfavor the use of an IPO as exit channel.

In a trade sale, the acquirer obtains 100 % of the company's assets, therefore the control of the firm completely goes to the new owner who now has both the power and the incentive to monitor management closely. This is in contrast to the IPO exit where the venture capitalist frequently retains a significant interest in the company, albeit for a limited amount of time. Acquisition by a strategic investor is therefore a more suitable means to deal with monitoring issues.

In an exit via buyback, the firm's new owners are identical to the managers, therefore agency costs for monitoring are not an issue, since they will naturally have a strong incentive to manage the firm's assets profitably. Furthermore, debt level will be fairly high after a buyback (assuming that the managers have to rely heavily on debt financing to acquire the venture capitalists interest in the firm), so that the high level of fixed interest payments will serve as an additional discipline for the managers and the lending bank as another monitor. However, the lending bank officers will not be particularly skilled in monitoring their debtor companies, simply because they lack the degree of specialization in any business field that venture capitalists usually show. This can

possibly allow the managers to indulge in a certain degree of leisure in a manner that they were unable to while the venture capitalist was still on the board.

While it can therefore be stated that the managers' share of the company is a factor that enhances motivation and managerial incentives, the evidence pertaining to the nature of this relationship is conflicting. Morck, Shleifer and Vishny (1988) report that the firm value first rises as management ownership increases to 5%, then falls as ownership increases up to 25%, and finally rises again at higher ownership levels. Contrary to this, McCornell and Servaes (1990) find evidence that the relationship between firm value and managerial ownership is otherwise: firm value first grows, then decreases more and more while the concentration of shares in the hands of managers and members of the board of directors increases. Demsetz and Lehn (1985) on the other hand renounce any relationship between the two variables as ownership structure of a firm is an endogenous outcome of a selection process, a trade-off of various cost advantages and disadvantages that ultimately leads to an equilibrium organization of the firm – ownership concentration and firm value should therefore be unrelated.

Whichever of these relationships really holds true, Cumming and MacIntosh (2003) attribute the non-linearity of the relationship to two opposing effects: the “alignment effect” on the one hand, and the “entrenchment effect” on the other hand. The greater the ownership of the managers, the higher is their pecuniary incentive to align their interests with firm interests. However, with increasing ownership, the management's ability to make decisions independently from outsiders also increases and consequently the incentive to pursue non-pecuniary rewards (like leisure) rises as well.

There are certain strategies to ensure that the management interests are aligned with those of the new owners. This includes the issuance of stock options or other forms of compensation linked to market price to serve as management incentives. But this is only possible in the case of an IPO. While the managerial shareholdings will dilute following an IPO (and thus diminishing the alignment effect), the entrenchment effect will be smaller as

well, it is therefore not possible to reliably predict the result of the change in ownership structure after an IPO (Cumming & MacIntosh 2003). But Baker and Gompers (1999) find evidence that venture capitalists have the incentive to assure alignment of management and company interests by providing post-IPO compensation contracts for the managers. They therefore suggest that exit via IPO can be favoured if compensation of managers in the form of share options are ensured.

In the case of a strategic acquirer, the entire firm is purchased and the managers are left with no direct equity holdings in the company. To ensure the aforementioned alignment effect, managers are often offered shares of the acquiring company. Since they therefore still indirectly hold a share of the firm, their incentive to maximize company profits remains. However, since acquiring firms are typically much larger than the target, the target firm's success will only constitute a small part of the acquirers overall business. The ability of the acquirer's shares or options to act as an incentive for the managers remains questionable. Therefore, an acquisition exit may be an inferior exit method in this case compared to other forms of venture capitalist exit where the managers retain a larger proportion of the company's equity (for example in the form of stock options).

In many cases, convertible securities are used as a further means to control the management and to provide incentives for alignment of entrepreneur and venture capitalist interests. There exist a number of studies where empirical evidence for the use of convertible securities in venture capital contracts is provided (for example Gompers 1997, and Kaplan and Strömberg 2003, Bascha and Walz 2002, and Cumming 2002). Kaplan and Strömberg report that convertible preferred stock is used in 189 of 200 financing rounds and only seven out of the 200 financing rounds do not use any convertible securities at all (they utilize instead some combination of straight preferred and common stock or multiple classes of common stock). The introduction of different types of securities is useful in that they allow for different allocations of cash flow, board, voting and liquidation rights.

From a general perspective, the use of convertible securities results from the existence of potential conflicts of interest between the venture capitalist and the entrepreneur. Thus, convertible securities are used where there are potentially diverging interests between the venture capitalist and the managers concerning the desired exit vehicle (Bascha & Walz 2001).

Using convertible securities allows for more flexibility in the (re-) allocation of control rights and the right to decide on exit methods. Furthermore, it gives the holders of convertible securities a protection against the downside risk of investments by providing seniority rights over straight equity. This implies for the entrepreneur to potentially take more risk compared to straight equity financing. It therefore induces higher effort levels. Also, it allows the management to retain more common shares than without convertible securities, since venture capitalists will require at best no more common shares after conversion than under financing without convertible securities. Thus, the managers may expect to retain more of the final value of the firm in case of great success. It can thus be assumed that the use of convertible securities lead to an incentivization effect that increases the probability for the firm to go public and a decreased probability of a buyback or write-off.

Empirical studies (for example Hege, Palomino and Schwienbacher, 2003) have found that US venture capital funds more often incorporate the use of convertible securities in their contracts with entrepreneurial firms. They are therefore better able to retain the flexibility offered by the use of such covenants and to reduce potential problems arising from manager-shareholder agency problems. Consequently, US venture capitalists are found to perform better than, for example, European ones in terms of exit decision.

5.4 The Venture Capitalists' Cash Preference

The venture capitalist will always choose the method of exit that yields him most “cash”. But the word “cash” does not only refer to currency, but to any form of consideration that gives him liquidity which can readily be turned into currency – such as shares in a liquid, publicly listed company.

A cash exit is preferred by venture capitalists due to numerous reasons. Liquidity gives the venture capitalist maximum flexibility to reinvest the proceeds (or to pay out to their own owners). An IPO is generally seen as the best way to get cash out of the venture capitalists interest. And indeed, Bancel and Mittoo (2007) cite a survey of Pagano, Panetta, and Zingales (1998) where they conclude that Italian firms choose to go public primarily for two reasons:

(i) to rebalance their leverage

(ii) and to allow pre-IPO owners and managers to liquidate their positions

and although this result can not be generalized to other countries, it seems that liquidity does significantly influence the venture capitalists exit decision.

While an IPO does supply the venture capitalist with respects that is more liquid compared to some other vehicles of exit, there are still some problems that can occur.

First, the venture capitalist mostly does not sell all its shares after the IPO immediately. Lin and Smith (1998) find that only a small proportion of venture capitalists sell any shares at the time of the IPO, and even if they do sell, they usually retain a large portion of their shares. The reason for this is that if the venture capitalist sells its shares in the IPO, this may be seen as a signal for a lack of confidence in the firm's prospects. Furthermore, venture capitalists tend to retain a portion of their shares in order to be able to continue their monitoring of the management (as mentioned in the sub-chapter about managerial incentives).

Secondly, an IPO may not be able to grant the venture capitalist the desired liquidity, simply because of the characteristics of the market they operate in. Many European markets are for instance very illiquid. The US market is much more liquid by comparison. The Canadian market is similar to the European markets to the extent that it is much less liquid than in the US. Cumming and MacIntosh (2003) attribute this lack of liquidity in the Canadian market not only to the smaller size of the Canadian economy, but also to the lack of willingness of the Canadians to trade in high-risk technology stocks or stock of relatively small firms. An illiquid market may effectively lock the venture capitalist in because there is potentially serious price pressure.

Finally, the venture capitalist may simply decide to retain its shares because it believes that the gains from the stock market is potentially larger than the gains from reinvestment of its funds. This may be the case when the venture capitalist considers the stock market prices to be generally inflated. If he believes that the price for a new investment is correspondingly overvalued, the venture capitalist would choose to not invest in a new project, but would wait and attempt to sell his shares at or near the market peak. (Cumming & MacIntosh 2003)

We can see, that there are several arguments indicating that IPOs do not always and immediately lead to liquid funds for the venture capitalist, but it can nonetheless be said that an IPO as an exit method is more favoured than other exit channels for its liquidity advantage.

But in some cases, a trade sale will result in a higher degree of liquidity than an IPO, in particular, if the strategic acquirer is able to pay in cash for the assets of the firm. In this case, the venture capitalist will receive his cash immediately. However, most of the time, these types of acquisitions are carried out by a transfer of shares of the acquiring company. Here we would have to distinguish between acquirers that are publicly held companies (with shares that are easily sellable) and those who do not operate in such a highly liquid market. It could also be that the acquirer is a private company without a

public market for its shares. It can, as a result, be stated, that a trade sale can potentially yield high liquidity for the venture capitalist, but this is not always the case.

Buybacks also have the potential to satisfy the venture capitalists liquidity needs, since the intended function of a buyback is to cash out the venture capitalist. But in most cases, firms choose a buyback only as a last resort, if other exit channels are not feasible. Therefore such firms where venture capitalists choose to exit via buyback often lack the funds to effectively pay back the venture capitalists interest. Payments are often delayed over a long period of time (months and sometimes even years) and in some cases buybacks are only partial in nature since the managers lack the funds to pay the complete price. Therefore, most buybacks only offer partial liquidity to the venture capitalist (Cumming & MacIntosh 2003).

5.5 Underpricing of Venture-Based IPOs

IPO underpricing is a well documented issue. This is especially pronounced in “hot issue” periods, i.e. periods where IPO activity is above average. Underpricing is computed as the percentage difference between the price at which the IPO shares are initially sold to investors (the offer price) and the price at which the shares subsequently trade on the stock market. In well developed capital markets and in the case where fluctuation of stock prices are not subject to any restrictions, the magnitude of underpricing manifests itself fairly quickly, certainly by the end of the first day of trading, therefore most studies use the first day closing price to compute the initial underpricing returns. Using later prices, for example the prices at the end of the first trading week, usually makes little difference (Lease & McConnel 1983)

Another way to view underpricing would be to see it as the amount of “money left on the table”, or – in other words – the money that could have been made, if the shares had

been offered at the aftermarket trading price. This amount is computed by multiplying the difference between the offer price and the aftermarket trading price with the number of shares offered at the IPO. The U.S. IPO market is exceptionally active compared to other countries, both by number of firms that go public and by the aggregate amount of capital raised. Viewed over the long run, the average percentage underpricing amounts to 19% since the 1960s, but there is always a substantial degree of variation over time. There are periods where the IPO market experiences significant overpricing, but more frequently there are periods where waves of firms go public at substantial discounts to their aftermarket prices. Average underpricing was approximately 16% in the 1980s, 21% in the 1990s, and 40% in the first years since 2000 (Ljungqvist 2004).

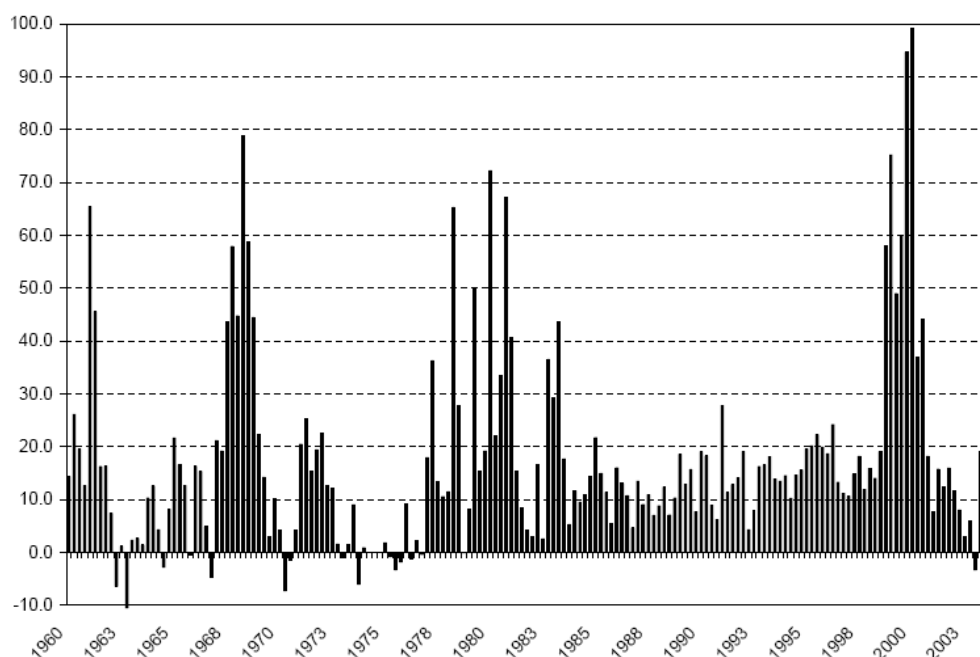


Figure 7 – Initial IPO returns US 1960-2003
(Source: Ljungqvist 2004)

The above figure shows data on the initial IPO return in the US from the 1960s to the early 2000s. It can be clearly seen that there are periods where IPO underpricing peaked.

Ljungqvist (2004) also analysed the average initial returns based on data from 19 European countries went to public between 1990 and 2003, as well as for eight Asia-Pacific and eight Latin American countries over the period of 1990 to 2001. It becomes apparent that underpricing varies from country to country. For instance, there is a significant different between France and Germany, and there is lower underpricing in the Latin American countries compared to Asia. These – sometimes considerable – differences across countries can at least partly be explained by differences in the institutional framework within which IPOs are priced (Ljungqvist 2004).

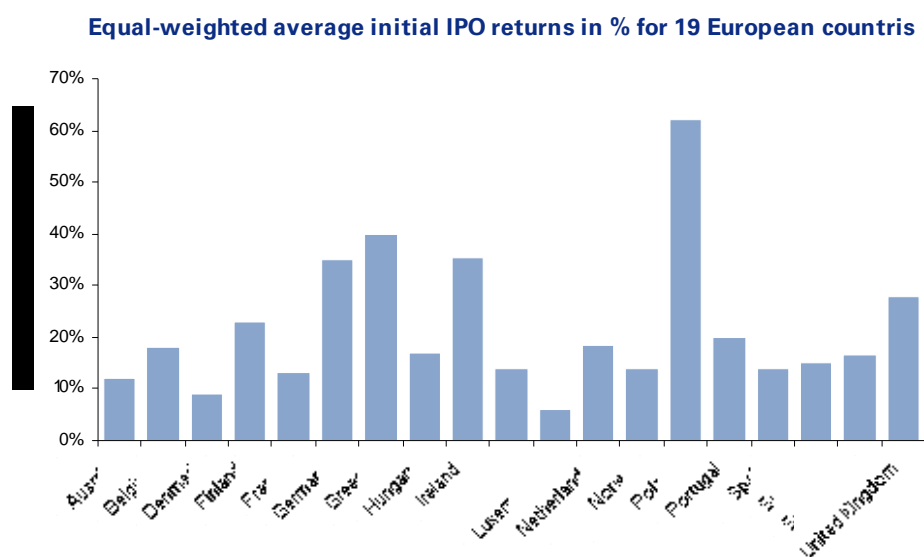


Figure 8 – Initial IPO returns Europe, 1990 to 2003
source: Ljungqvist (2004)

Periods where many IPOs occur and were underpricing is especially significant are often called “hot issue periods”. Given that there are great amounts of money left on the table, it seems puzzling that issuers do not appear to press underwriters to change the way they price IPOs.

Early studies of IPO underpricing came to the result that venture-backed companies are subject to less underpricing than non-venture backed companies. But more recent studies have shown that this is not always the case and that the amount of underpricing is dependent on the time period where the IPO takes place. In “hot issue” markets, IPOs that are venture capital-financed show significantly more underpricing than companies without venture capital. The following table summarizes some results of different studies:

Less undernriced	More undernriced
Barry, Muscarella, Peavy, and Vestuypens (1990) (’78-’87) underpricing VC 7% NVC 8%	Ljungqvist and Habib (2001) (’96-’98) underpricing VC 18% NVC 17%
Megginson and Weiss (1991) (’83-’87) underpricing VC 7% NVC 12%	Francis and Hasan (2001) (’90-’93) underpricing VC 13% NVC 10%
Lin and Smith (1998) (’79-’90) underpricing VC 12% NVC 17%	Franzke (2004) (’97-’00) underpricing VC 64% NVC 61%

Time variation of underpricing

Lee and Wahal (2004)	(’80-’00) underprcng VC 27% NVC 19% (’80-’89) underprcng VC 8% NVC 9% (’90-’98) underprcng VC 16.17% NVC 16.70% (’99) underprcng VC 89% NVC 43% (’00) underprcng VC 68% NVC 36%
Loughran and Ritter (2004)	(’80-’89) underprcng VC 8% NVC 19% (’90-’98) underprcng VC 16.1% NVC 19% (’99-’00) underprcng VC 82.2% NVC 38.5% (’01-’03) underprcng VC 15% NVC 9.4%

Table 1 – IPO underpricing – Summary of empirical findings
source: Rossetto (2008)

Rosseto (2008) tries to offer some explanation for the fact that venture backed IPOs behave in this particular manner. (i.e. being more underpriced during “hot issue” periods and less underpriced during “cold issue” periods compared to non-venture backed IPOs).

He argued that the venture capitalist's decision for going public as the consequence of a trade-off between liquidity and loss of control. The venture capitalist takes the firm public in order to generate liquidity for new investment opportunities. Therefore, the higher the profitability could be achieved by the new investment opportunity, the more eager the investor will be to sell the existing firm quickly in order to receive funds to reinvest. The prospect of new opportunities leads them to accept a higher degree of underpricing for the sake of immediate liquidity. Many empirical studies – such as Lowry and Schwert (2002) and Loughran and Ritter (2004) based on the data of US firms, and Rydqvist and Hogholm (1995) and Giudici and Roosenboom (2004) from data of European firms – state that firms taken public during “hot issue” periods, when the economy is expanding, are usually younger and less established which further confirms that rapid exit is undertaken in order to free up funds for new investments. The venture capitalist is willing to accept higher degrees of underpricing if the profitability of investing in new projects is considered higher: the loss of missing new investment opportunity could be higher than the benefit of setting higher price at the date of IPO (since setting a higher share price would mean that he will be able to sell fewer shares). Conversely, if the new investment opportunities are estimated to be less profitable, the venture capitalist would forbear from underpricing and retain a larger share of the existing company.

Another explanation for underpricing in venture-backed companies is put forward by Lee and Wahal (2004). They state that higher first-day returns represent a real, incremental cost to venture capitalists because they typically hold significant interest in the company. What could be the reason for venture capitalists to be willing to take this cost? There must be some benefit that venture capital backed offerings with high first-day returns provide to offset the cost of greater underpricing. In fact, the high first-day return of a venture backed IPO send signals to publicity which help the venture capitalists building up a favourable reputation. Gompers (1996) argues younger venture capitalists are more motivated to take companies public than the seasoned venture capitalist in order to build up reputation. He also mentioned that the willingness of taking companies public and bear the cost associate with it is implicated by so called “Grandstanding” behaviour of young

venture capitalists (see also chapter 4 for a more comprehensive discussion of the grandstanding theory). Lee and Wahal (2004) estimate that an incremental first-day return of 9 percent generates an 8.5 percent increase in the dollar amount of funds raised in the year following the IPO. It seems that venture capitalists sometime are willing to take the cost of underpricing for the follow-up funds they could achieve during the better reputation which is more valuable than the money left on the table.

It can be concluded that in “hot issue” periods, where investment opportunities are highly attractive, an IPO can be the dominant exit strategy because it offers immediate liquidity and therefore frees up funds for new investments. When this occurs, venture capitalists are willing to accept a larger degree of underpricing because they expect the gains from both the new investment and from the better reputation to be higher than the cost they occur when underpricing the shares.

Underpricing is likely not to be an issue when exiting via trade sale, since strategic acquirers are often willing to pay a higher value for the firm because of possible transaction synergies (as mentioned before). Also, non-IPO exits will not result in the reputational benefits described earlier.

5.6 Legality and Venture Governance Implication of Exit Choice

The work of LaPorta et. al. (1997, 1998, 2000) demonstrates how important the legal framework is for economic activities in general. This also holds true for venture capital financing and the venture capitalist’s choice of exit vehicle. And while the oldest and most developed venture capital market is the US market, venture capital activities have increased throughout the world making it important to determine how the different legal systems in various countries influence venture governance structures and consequently the choice of exit vehicle.

The requirements for the due diligence process that has to be conducted prior to an IPO varies across the different countries. This process can take a long time and is very costly. Therefore, where laws impede the due diligence process they slow down the exit process and methods of exit other than the IPO may be considered more favourable. This may especially be the case for smaller firms. Legal costs of going public constitute another important factor that differs from country to country.

Securities regulations that come into action after an IPO can also be a factor. Lockup periods also vary in different countries, in Canada for example longer lockup periods are typical, diminishing the liquidity that is available immediately after the firm is taken public, and thereby disfavoured IPOs. In the US, more IPOs can be observed because lockup periods tend to be shorter there. These securities regulations are designed to ensure that key investors and entrepreneurs stay involved with the company at least for the first few months or years after an IPO (in order to guarantee appropriate governance and continuity of management). IPOs are also favoured in the US because stock valuations are generally higher there. This may again be related to the fact that the US equity market enjoys greater liquidity than other markets.

Cumming, Schmidt and Walz (2004) show that a better legal framework also facilitates the representation of investors on the management board in the investee company. The investor is therefore able to monitor the managers and have a say in the decisions taken. When determining what can be considered as a “better” legal framework, Cumming, Schmidt and Walz (2004) rely on the “legality” index as defined by LaPorta et al. (1997, 1998). Control rights and better ability to monitor the managers have significant influence on the venture capitalists choice of exit vehicle as discussed in the respective sub-chapters above.

The influence of legal systems on the choice of exit vehicle is further analyzed in the paper of Cumming, Fleming and Schwienbacher (2006) where they provide a cross-

country law and finance analysis of venture capital exits. They take into account a sample of Asia-Pacific countries, a common characteristic across these Asia-Pacific countries is that their venture capital markets are not well developed, in particular when compared to the US capital market. The principal finding of their study is that an increase of the legality index leads to a significant increase in the probability of an IPO exit. For example, an upgrade from 20 to 21 in the legality index raises the probability of an IPO by about 1.7%, whereas a change in legality from 10 to 11 (i.e. the difference between the Philippines and Indonesia) increases the chance of going public by 3.3%.

In their paper, Black and Gilson (1998) commented (without data analysis) that there should be a relationship between active stock markets and energetic venture capital markets, because venture capitalists require liquidity that can only be provided by stock markets. In their paper, Cumming, Fleming and Schwienbacher provide an alternative explanation. They state that their data indicates that the characteristics of a country's legal system is actually more directly connected to the number of venture-capital backed IPOs than to the size of a country's stock market. They find that the activity on the stock market is statistically not related to the probability of a venture-capital backed company exited by an IPO (even though there is a correlation between legality and the size of a country's stock market, which explains why there is seemingly a causal connection between active stock markets and active venture capital markets, as identified by Black and Gilson, 1998).

Several reasons can be given why legal framework is important in the context of venture capital finance. A higher legality index in a country means that there is stronger investor protection, and therefore a more active (and more liquid) stock market. As discussed above, the venture capitalists choice of exit vehicle depends among other factors on the potential acquirer's ability of working out asymmetric information problems. A better legality index, i.e. a more controlled legal framework and stricter regulations concerning disclosure of information and so on, will enhance the new owner's ability to do so. Cumming, Fleming and Schwienbacher (2004) assume therefore that IPOs are less costly exit routes in countries with a higher legality index compared to acquisitions,

secondary sales or buybacks, and should be therefore more often occurred than in countries with better legality environment. Similarly, in countries with worse legality environment, a buybacks are observed more frequently because of the less protection need in buyback exits for new owners.

6 Conclusion

In this paper, I focused on the exit phase of the venture capital investment. I concentrated on the exit decision by venture capitalists, and the factors that might have an impact on the exit decision.

The exit decisions include the decision of exit timing made by venture capitalists and the exit vehicle chosen by venture capitalists. The factors affecting the exit timing concerned mostly the information asymmetry problem that exists during the whole venture capital investment. An exception is the IPO – there are several special factors which are only relevant if the venture capitalist decides to exit by going public.

The factors influencing the choice of exit vehicle are more versatile. Aside from the information asymmetry, the transaction synergy and managerial incentives and other factors also have significant impact on the venture capitalist's choice.

The factors affecting the venture capitalist's decision could be external factors which can not be controlled by venture capitalists, for example market conditions, legality environment; but could also be internal factors like the managerial incentives, venture capitalists' reputation or the cash preference of venture capitalists. There are also some economic factors which have impact on the exit decision, such as the transaction synergies and the underpricing by venture backed IPO.

To summarize, the venture capital exit is a complicated process and can be influenced by numerous factors. In this paper I discuss the most recognized factors and their empirical evidence found by economists.

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