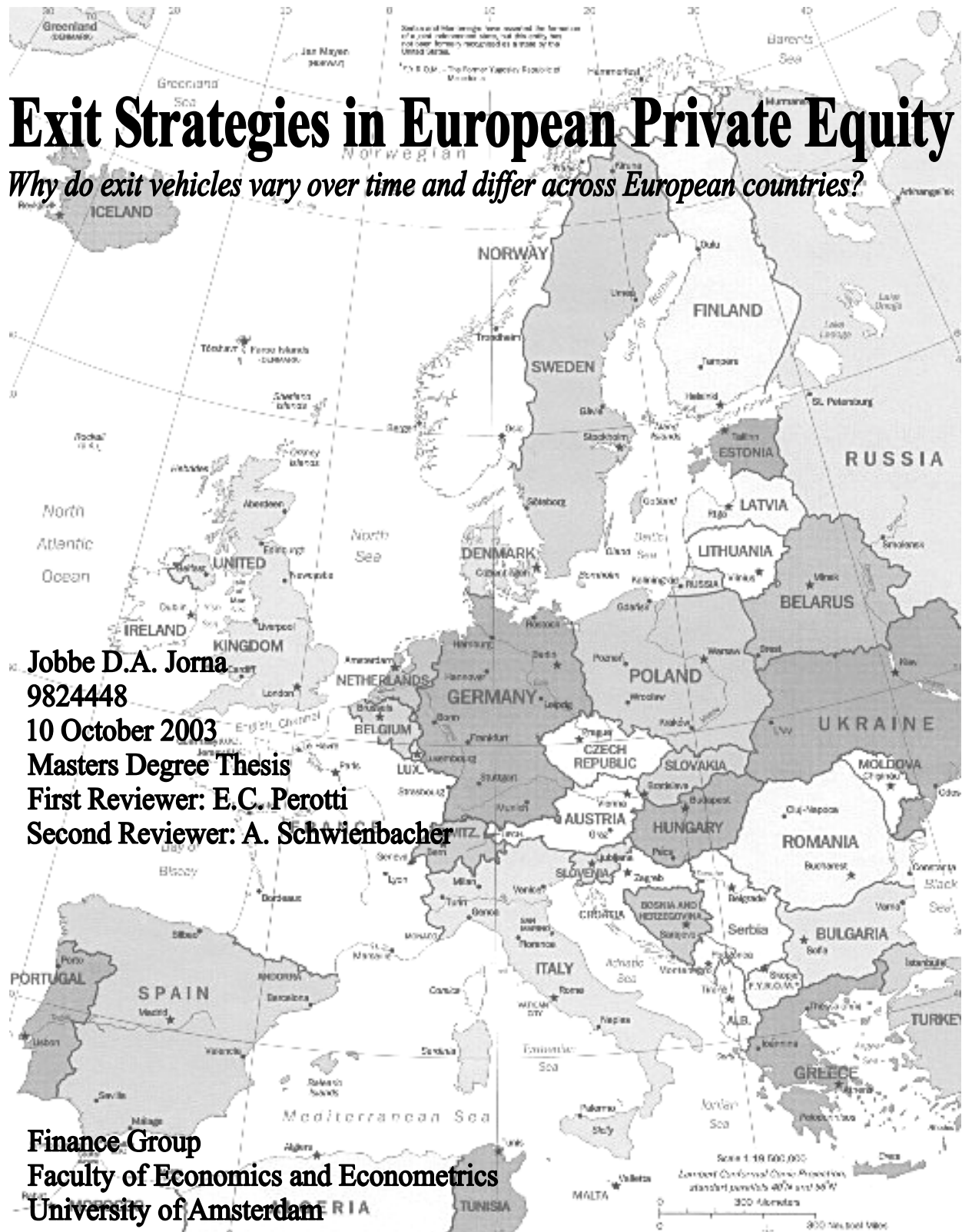# Exit Strategies in European Private Equity

Why do exit vehicles vary over time and differ across European countries?

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Abstract

Little is known about private equity exits in European countries, and this thesis is the first step in understanding why private equity exits vary over time and differ across European countries. It examines the adopted exit strategies between 1991 and 2002 by private equity investors in 15 European countries. The objective of this thesis is twofold: (1) whether exit vehicles differ across European countries, measured by stock market development, and the existence versus absence of a local stock market for small companies, and (2) why exit vehicles vary over time and differ across European countries, measuring the influence of market capitalisation, interest rate, Gross Domestic Product (GDP) growth, legal tradition, and law enforcement. The empirical evidence suggests that (1) exit vehicle activity is higher in countries with a more developed stock market than countries with a less developed stock market, (2) exit vehicle activity is higher in countries with a local stock market for small companies, than countries without a local stock market for small companies, and (3) total market capitalisation, interest rates, and GDP growth are the most important determinants of exit vehicle activity.

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1   Introduction

The rapid growth of the private equity[1] industry in Europe in the late 1990s, the over-exuberance of the capital markets making apparent swift exits at huge multiples, and the resulting market correction have sent huge shock-waves throughout the private equity industry. European private equity investors have been faced with a rapidly changing environment.

Starting from April 2000, the downturn trend on the NASDAQ signalled the beginning of the end of the buoyant stock market conditions. The burst of the Internet bubble and the world-wide decline of stock markets caused private equity levels to drop. Without doubt, the uncertainty and volatility of the European private equity industry since 2000 is the most far-reaching and traumatic period of change ever experienced in the industry's history. The economic uncertainty over the last two years or so has affected private equity exits in Europe. This scenario causes difficult and unpredictable exits, and a continuing drought is likely to cause extra pressure on the private equity market.

Exit is the point at which the private equity investor realises his investment, also called liquidity event or divestment. The exit process is of central interest because private equity investments typically do not pay dividends, and returns are derived from exiting the investment. The need to ultimately exit investments affects the venture capital fundraising and investment process (Gompers and Lerner, 1999). Cumming et al. (2003) provide evidence that private equity investors adjust their investment decisions; they time their investments, according to liquidity conditions on exit markets (mainly stock markets and corporate M&A markets). The availability of a liquid and profitable exit is therefore of primary concern for private equity investors (MacIntosh, 1997).

The main exit vehicles for a private equity investor are: (initial) public offering, trade sale, secondary sale, buyback (or redemption), and write-off (or liquidation) (MacIntosh, 1997). Given that the primary goal of the private equity investor is to maximise returns, IPOs and trade sales tend to dominate exits in practice (Smith, 2001).

The ratio of the exit vehicles differs over time. MacIntosh (1997) argues that exit vehicles may vary cyclically depending on returns observed in stock markets, while Cayen (2001) concludes that write-off activity also fluctuates over time. Trade sales have always been the most important exit vehicle in Europe, while IPOs have become important since the accessibility of the European stock markets for private equity investors. Recently, as the private equity industry became more mature, other exit vehicles beside IPOs and trade sales are becoming more important (Wright et al., 1994).

Private equity investors in Europe focus on their home markets to invest and exit their investments, while the development of the local private equity markets differ across European countries. Black and Gilson (1998) find a strong relationship between active stock markets and active venture capital markets. Consequently, the size of the local stock and acquisition markets gives an indication for the exit opportunities (Wright et al., 1994), while Cumming et al. (2003) find that there is a strong link between stock markets and M&A markets.

Little academic literature regarding the private equity exit process exists, although it is currently expanding empirical studies are limited. Some academic literature find evidence that exit vehicle activity differs across countries (e.g. Cumming and MacIntosh, 2002b, and Schwienbacher, 2002b), but their is no set of empirical findings to suggest the difference

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[1] Private equity provides equity capital to companies not quoted on a stock market, it is an increasingly widely used term in Europe and is generally interchangeable with venture capital. Venture capital is, strictly speaking, a subset of private equity and refers to equity investments made for the launch, early development, or expansion of a business (EVCA, 1999). Outside the United States, Venture Capital is often used as a synonym for private equity (Gompers and Lerner, 1999). This paper will focus on private equity investing in all development stages of a venture backed company; seed, start-up, expansion, replacement capital, and buyout.

between exit vehicle activity across European countries, not to mention the difference of exit vehicle activity by stock market development. Some academic literature find factors that affect the private equity process, although most centre on the fundraising and investment process (e.g. Jeng and Wells, 2002, and Kumar and Orleck, 2002). Jeng and Wells (2002) study macro-economic factors that affect venture capital investments, while Kumar and Orleck (2002) also study the legal factors that affect the private equity process. In addition, Cumming and Fleming (2002) study the affect of the legal system on the exit process. The most extensive study regarding venture capital exit vehicle activity is by Cumming and MacIntosh (2002b), they focus on company specific factors that influence the choice and timing of exit vehicles. However, there is no empirical study that examines whether exit vehicle activity differs across European countries by stock market development, not to mention the reason why exit vehicle activity varies over time and differs across European countries.

This thesis extends the existing literature by providing and analysing the adopted exit strategies between 1991 and 2002 in 15 European countries; Austria, Belgium, Denmark, Finland, France, Germany, Republic of Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. The objective of this thesis is to examine: (1) whether exit vehicles differ across European countries, measured by stock market development, and the existence versus absence of a local stock market for small companies, and (2) why exit vehicles vary over time and differ across European countries, measuring the influence of market capitalisation, interest rate, Gross Domestic Product (GDP) growth, legal tradition, and law enforcement. The central question of this study is as follows: Does exit vehicle activity differ across European countries, and why does exit vehicle activity vary over time and differ across European countries?

The empirical evidence suggests that (1) exit vehicle activity is higher in countries with a more developed stock market than countries with a less developed stock market, (2) exit vehicle activity is higher in countries with a local stock market for small companies, than countries without a local stock market for small companies, and (3) total market capitalisation, interest rates, and GDP growth are the most important determinants of exit vehicle activity.

This thesis is structured as follows: The next chapter starts out with a brief discussion of the related literature to this thesis. Chapter 3 describes the five main exit vehicles. Exit vehicle activity in Europe is discussed in chapter 4, while chapter 5 discusses the exit markets across Europe. The factors that influence the choice and timing of exits are discussed in chapter 6. Chapter 7 outlines the hypotheses of this study. Chapter 8 describes the data and methodology of this thesis. Due to data limitations this study will focus on four exit vehicles; public offering, trade sale, other means, and write-off. The empirical part of this study will contain two mean difference tests and a regression analysis. First of all, the two mean difference tests will test whether exit vehicle activity differs across European countries by rearranging the data in two ways: by stock market development and by the existence or absence of a local stock market for small companies. Secondly, the regression analysis will test which independent variables; total market capitalisation, interest rate, GDP growth, legal tradition, and law enforcement affect the dependent variables; public offering, trade sale, other means, and write-off. Chapter 9 presents the results of the statistical tests. The final chapter contains the conclusions of this thesis, and makes some suggestions for further research.

2   Related Literature

Until now, little research regarding exit strategies of private equity investors exists. This is the result of the limitations both in breadth and depth to which it is possible to obtain and / or present private confidential information. The existing academic literature on private equity exit strategies is limited and until recently most previous work focused on IPOs.[2] It is beyond the scope of this thesis to discuss this literature. This chapter will deal with the related studies regarding exit vehicles across the world, and the determinants of private equity activity.

2.1   Exit vehicles across the world

More recent academic literature study the five main exit vehicles, especially in the geographic areas of the United States and Canada[3], although some research focuses on Asia Pacific[4] and Europe.[5]

The most extensive empirical study regarding venture capital exit activity is by Cumming and MacIntosh (2002a). Cumming and MacIntosh (2002a) conclude that IPOs and trade sales are common exit vehicles in general, while secondary sales and buybacks are uncommon exit vehicles. The exit vehicle preference is in rank order (from high to low) as follows: IPOs, trade sales, secondary sales, buybacks, and write-offs. Cumming and MacIntosh (2002a) find empirical evidence for the general belief in academic literature (e.g. Amit et al., 1998, Fleming, 2002, and Schwienbacher, 2002b) that IPOs are the most profitable and prestigious exit vehicle for private equity investors. They find that exit vehicles differ between the United States and Canada. Their findings regarding venture capital exits in the United States are similar to the results by Schwienbacher (2002b), and the results regarding Canada are similar to the results from an earlier study by Amit et al. (1998). Trade sales and write-offs are the most common exit vehicles in the United States, while buybacks are the most common exit vehicle in Canada followed by write-offs and IPOs.

The most extensive empirical study regarding private equity that exits in Europe is by Schwienbacher (2002b). This study focuses on the exit activity in six European Countries; Belgium, France, Germany, the Netherlands, Sweden, and the United Kingdom, and the United States. One of the findings is that relevant markets for top quality business management that go into the ventures, as well as for the exit opportunities, are less liquid in Europe. Consequently, it takes more time for private equity investors in Europe to exit their investments. Trade sales seem to be the preferred exit vehicle in Europe, although IPOs may provide private equity investors with significant reputation benefits. In contrast, a trade sale is a more general exit vehicle and less sensitive to the profitability of companies (Schwienbacher, 2002b).

2.2   Private equity determinants

Until recently, only a few empirical studies have been undertaken to find the determinants of private equity, of which some centre on private equity fundraising and investing, while others focus on the divestment process.

Gompers and Lerner (1998), and Marti and Balboa (2002a, and 2002b) study the determinants of venture capital fundraising, and Jeng and Wells (2002) the determinants of the venture capital investment process. Kumar and Orleck (2002) analysed factors that impact the development of private equity markets in eight European countries, and the United States. They conclude that market capitalization, the cost of capital, and legal traditions are the most

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[2] Barry et al. (1990); Megginson and Weiss (1991); Gompers and Lerner (1999).
[3] Amit, et al. (1998); Cumming and MacIntosh (2002a); Cumming and MacIntosh (2002b); MacIntosh (1997).
[4] Cumming and Fleming, (2002); Fleming (2002); Wang and Sims (2001).
[5] Isaksson (2000); Schwienbacher (2002b); Wright et al. (1994).

powerful variables in explaining the variation in private equity market development between countries.

Other studies by Wright et al. (1994), Amit et al. (1998), Cumming and Fleming (2002), Cumming and MacIntosh (2002a, 2002b), and Fleming (2002) focus on the exit process, and find factors that affect exit timing and the choice of exit vehicle. Wright et al. (1994) examined the exit activity in the United Kingdom, France, the Netherlands, and Sweden, which are the four most developed venture capital countries in Europe. They find evidence that exit vehicles vary between countries and also in the same country over time, depending upon the state of development of buy-out, stock and corporate assets markets, and economic conditions that affect the feasibility of exit vehicles and their timing. Adverse market conditions may seriously delay and limit the ability to exit, but private equity investors need to exit their investment mostly in a limited time span, before the fund will terminate.[6]

Wright et al. (1994) find that the relative development of stock markets influences the extent to which an IPO is a feasible and attractive exit vehicle. A general indication of divestment opportunities is provided by the sizes of stock markets and M&A markets in each country. Bottazzi and Da Rin (2000, 2002a, and 2002b), and Schertler (2001) study the development of the private equity markets through the establishment of new stock markets for small companies in Europe. Black and Gilson (1998) explored the link between active stock markets and strong venture capital markets.

The major differences in the relative national importance of capital markets are the result of differences in investor protection against expropriation by insiders, as reflected by legal rules and the quality of their enforcement, which both differ systematically across countries (La Porta et al., 1998). La Porta et al. (1997, 1998) argue that common law is critical for efficient capital markets, which are, on its turn, critical for economic development. However, Berkowitz et al. (2003) concludes that the way the law was initially transplanted and received is a more important determinant of effective legal institutions (legality) than legal tradition (common law versus civil law). It has an indirect effect on economic development through its impact on legality.

Cumming and Fleming (2002) conclude that the legal structure impacts both the investment decision and exit process in emerging markets. Corporate governance and legality play an important role in both the investment and exit process. It affects information asymmetry, which is one of the key factors that influence the timing and choice of exit vehicle (e.g. Amit et al., 1998 and Fleming, 2002). In terms of the exit process, IPOs are more likely in countries with a higher legality index, and buybacks are more likely in countries with a lower legality index. However, Allen and Song (2002) find that corporate governance plays a different role in venture capital than in capital markets. They find that law and order is negatively related to venture capital activity, which suggests relationships can be substituted for contracts in venture capital investments.

3 Exit vehicles

Exit vehicle is the means by which a private equity investor realises his investment in a company, also called exit route or exit mechanism, while exit strategy is the plan to end an investment, liquidate holdings, and achieve maximum return. The exit process is of central interest because private equity investments typically do not pay dividends, and returns are derived from exiting the investment. The availability of a liquid and profitable exit is of primary concern for private equity investors (MacIntosh, 1997). The decision to invest depends on the likelihood to exit. Private equity investors will not invest if they cannot

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[6] See section 6.2 for a detailed discussion of fund termination date.

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foresee an exit (Gompers and Lerner, 1999). This chapter will discuss the main exit vehicles for private equity investments.

In general, private equity investors will exit their investments by one of the five main exit vehicles (MacIntosh, 1997): (initial) public offering, trade sale, secondary sale, buyback, or write-off. Exit strategy is the choice between a public sale; (initial) public offering, a private sale; trade sale, secondary sale, buyback, or write-off (Cumming and Fleming, 2002). Smith (2001) concludes that if the investment is a success the private equity investor can aim at an IPO, trade sale, or rarely a secondary sale, while failing investments move toward a buyback, or write-off.

3.1   *(Initial) public offering*
In an IPO (also called flotation), the company sells shares to the public for the first time. The decision to go public is driven by the need to finance growth and provide scope to pursue new opportunities. A successful IPO will lead to a higher profile, increased exposure and visible valuation of publicly listed companies, which will be a great help for further rounds of financing.

However, an IPO is not an exit event in itself, it is a capital raising exercise. Except for sales during the offering, lock-up agreements prohibit insiders to sell their equity after the offering for a pre-specified period, usually six months (Gompers and Lerner, 1999). The market may interpret an investor selling some or all of its shares as a negative signal, which could prevent a successful public offering. Once that lock-up period is over, private equity investors can sell their equity, which is the sale of already quoted equity post flotation. At that moment they actually realise their exit.

There seems to be a general belief in the academic literature that on average going public is the most profitable and prestigious exit route for private equity investors (e.g. Cumming and MacIntosh, 2002a, Fleming, 2002, and Schwienbacher, 2002b). Lerner (1994) and Zingales (1995) find that the level of equity valuation does relate to the likelihood that the venture capitalist will exit via an IPO. Venture capitalists time IPOs by going public when equity values are high and use private financing when values are lower (Gompers and Lerner, 1999).

3.2   *Trade sale*
In a trade sale (also called acquisition exit), the entire company is purchased by a third party, and both the private equity investor and entrepreneurs sell their interest in the company. In general the buyer will be a strategic acquirer, a business entity that is in the same or similar business to the target company (Cumming and MacIntosh, 2002a). They can extract the maximum synergies and efficiencies between the businesses, although reducing overheads often means job cuts. Management may have to give up control of the company that they have so recently helped to create or grow, which is one of the most common obstacles to a trade sale.

Trade sales should often be regarded as equal or preferable to IPOs (Wall and Smith, 1997). In some circumstances, trade sales can be a more profitable exit vehicle than IPOs due to the underpricing of IPOs, and the premium that some specific buyers are willing to pay. But even when a company is looking for a trade sale rather than a flotation, the prospect of a successful IPO and the valuation of similar companies on the stock exchange influences its market price (Schwienbacher, 2002a). Preparing for an initial public offering provides a shop window for prospective trade buyers.

3.3 Secondary sale

Instead of selling the entire company, the private equity investor may sell its shares to a third party; another private equity investor or a strategic acquirer (Cumming and MacIntosh, 2002a). The strategic acquirer will usually be seeking a window on the company's technology, with the possibility to acquire the entire company at some point in the future.

A secondary sale is feasible when an exit is needed, and the company is not ready for an IPO or trade sale (Wright et al., 2000). This is a situation that the private equity investor would prefer to avoid, since a forced sale typically leads to a low price. The ability to give a price, i.e. to quickly understand the hidden value of the underlying assets, is key in secondary sales (EVCA, 2001).

Secondary sales are an uncommon exit vehicle, which seems to be more a result of mutual suspicion than business logic's (Wall and Smith, 1997). Although, a sale from a private equity investor to another can be motivated by the buyer's expertise in a particular sector, confidence in the future of the company, or portfolio management considerations (Cumming and MacIntosh, 2002a).

3.4 Buyback[7]

In a buyback or redemption, the company, or its management will repurchase the shares held by the private equity investor (Cumming and MacIntosh, 2002a). A management buyback occurs when the management of a company that no longer needs outside investors to finance its growth takes control of the company by re-acquiring all the shares. A buyback will typically involve substantial borrowing to retire the private equity investors' shares (Black and Gilson, 1998). Buybacks are appropriate for asset rich companies or where private equity investors have a small equity stake (Wright et al., 1992).

In many cases, the buyback will be triggered by the exercise of contractual rights, a put of stock (common stock) back to the company, or a mandatory redemption (preferred shares), taken by the private equity investor at the time of initial investment (Smith, 2001). With puts of common stock, a valuation algorithm is agreed to in advance. For minority investments, a guaranteed buyout provision is essential, as it is the only means by which the private equity investor can be assured of liquidity. Smaller investments may not be faced with the problem of how to realise the investment. Aggressive participating dividends may put pressure on management to restructure or seek an exit (Wright et al., 1990).

Despite some apparent advantages over other exit vehicles, the buyback transaction is often the exit of last resort, short of write-off, because the lack of competition and the buyers' strong position leads to a lower sale price for the exiting private equity investor (Wall and Smith, 1997). Buyback or redemption are typically living dead investments[8], and has historically been a common exit vehicle when other exit vehicles fail (Wall and Smith, 1997).

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[7] In the United States this exit vehicle is associated not with venture capital funds, but with leveraged buyout funds. In Europe, which has a less clear distinction between venture capital and leveraged buyouts, this form of exit is common when venture capital funds invest in management buyouts of mature companies (Black and Gilson, 1998).

[8] Living dead investments represent venture capital investments with intermediate return on investment, lying between investments that result in a high return on investment and investments that result in a loss of investment. They are viable but marginally profitable companies, which lacks sufficient upside potential for the venture capitalist. Venture capital investors will use a number of strategies to try to turn these companies around or to achieve an exit. The chances for a profitable exit or any exit at all diminishes substantially, when these attempts are unsuccessful (Ruhnka et al., 1992). Venture Capitalists will unload living dead investments at the first opportunity, usually the only available opportunity will be a buyback (MacIntosh, 1997).

3.5 Write-off

A write-off or liquidation occurs when the private equity investor walks away from its investment, with little or no return. While a write-off often involves the failure of the company, the private equity investor may continue to hold shares in a non-viable or barely profitable company (Cumming and MacIntosh, 2002a). When a write-down occurs, the private equity investor will likely spend very little or no further effort to turn the investment around, it is a living dead investment. Without opportunities for an exit, private equity investments are almost totally illiquid, and to all intents and purposes are equivalent to a loss of investment for their investors (Ruhnka et al., 1992). Write-offs are a proxy for the general performance of the private equity market.

4   Exit vehicle activity in Europe

This chapter will discuss exit vehicle activity in Europe before 1991, and especially between 1991 and 2002. The ratio of the several exit vehicles varies over time. MacIntosh (1997) argues that the choice of exit vehicle may vary cyclically, depending on returns observed in stock markets, while Cayen (2001) finds that write-off activity also fluctuates over time.

4.1   Before 1991

Although most private equity companies in Europe started their operations in the 1970s (Coutarelli, 1977), the actual development of the private equity industry did not take place until the late 1990s. The robustness of the American IPO market is seen, together with the fact that private equity is a relative young phenomenon in Europe, as the main reasons for the underdevelopment of the European private equity market compared to the United States (e.g. Lerner and Hardymon, 2001, and Black and Gilson, 1998). The lack of developed private equity markets across Europe resulted in a withdrawal from early stage / venture capital investments, and a further focus at later stage investments from mid-1980s onwards (Marti and Balboa, 2001a).

Rising stock markets changed the exit opportunities for private equity investments. IPOs became an attractive exit vehicle from 1984 onwards, as a result of the buoyant stock markets. Private equity investors exited their investments earlier, due to these favourable stock market conditions and so the investment duration became shorter. For the less well performing companies other exit vehicles, beside public offerings and trade sales, were likely to be more appropriate, but they were not yet viable due to the immatureness of the private equity industry in Europe (Wright et al., 1990).

Flotation was the dominant exit vehicle in the mid 1980s. However, after the market crash of October 1987, IPO activity in Europe and the United States dried up. While the US market recovered in the early 1990s, the European market remained depressed. Consequently, European private equity investors were unable to exit investments by taking them public. They were required either to continue to hold the companies or to sell them to larger corporations, often at relatively unattractive valuations (Gompers and Lerner, 1999). This resulted in a total shortfall (a cumulative gap between 200 and 500) of IPOs between 1984 and 1989 (Bygrave and Timmons, 1992). Bygrave and Timmons (1992) argued that the IPO market is very uncertain, perhaps too uncertain, to be relied upon as the most important exit vehicle, and over time IPOs are the main determinant behind the cyclical swings in venture capital.

The adverse market conditions of the early 1990s seriously limited the ability to exit private equity investments, which led to further negotiations and the delay of exits. The ability to exit in a short time span was under pressure, as private equity investors had to deal with investments that seriously underperformed and had to be exited one way or the other (Wright

et al., 1994). As a result, private equity investors were forced to risk obtaining an average price for a good business, and no price at all for an average business. In the long term an overall shortfall in performance would jeopardize the whole European private equity industry (Bygrave et al., 1994).

The highly active M&A markets, and the possibility of a full exit frequently at a higher P/E ratio than through flotation resulted in a shift during 1988-1992 towards trade sales as most important exit vehicle (Wright, et al., 1992). There is likely to be an inverse relationship between the use of IPOs and acquisitions. When stock markets are doing poorly and the IPO market is on the downswing, trade sales should become relatively more attractive (MacIntosh, 1997).

More recently in the mid 1990s buyback activity increased when emphasis appeared to be switching to the redemption of financial instruments and the use of participating dividends. These are mechanisms whereby as profits increase private equity investors are available to participate in them by having the right to an increased dividend (Wright et al., 1994).

As the private equity industry develops the European private equity markets become more mature. Other exit options will become viable as the private equity market progresses through its life cycle. Consequently, exit possibilities beyond IPOs and trade sales are emerging, among others: (1) buyback which tends to be more appropriate for transactions where management have majority control and private equity investors have a minority share, (2) capital restructuring, whereby the company is re-leveraged, which is more appropriate for larger transactions during unfavourable stock market prices, (3) refinancing by a new set of investors is more appropriate in those investments that do not meet other exit vehicle criteria. This option may be an alternative to a buyback, and (4) secondary sale, which are more appropriate when private equity investors are in need of an exit at short notice, and the company is not ready for an IPO or trade sale (Wright, et al., 1992).

4.2 Between 1991 and 2002

An empirical study by Schwienbacher (2002b) present evidence for IPOs and trade sales as most common exit vehicles in Europe. EVCA data between 1991 and 1998 indicate that trade sales are the most important exit strategy by amount of divestment, with 1994 as only exception, when IPOs were the most important exit vehicle. Graph 1 shows the amount of divestment through public offering, trade sale, other means (for instance secondary sales, management buybacks, and redemption of principal loans), and write-off, between 1991 and 2002 for the fifteen European countries in this study.

Graph 1. Amount of divestment, 1991-2002
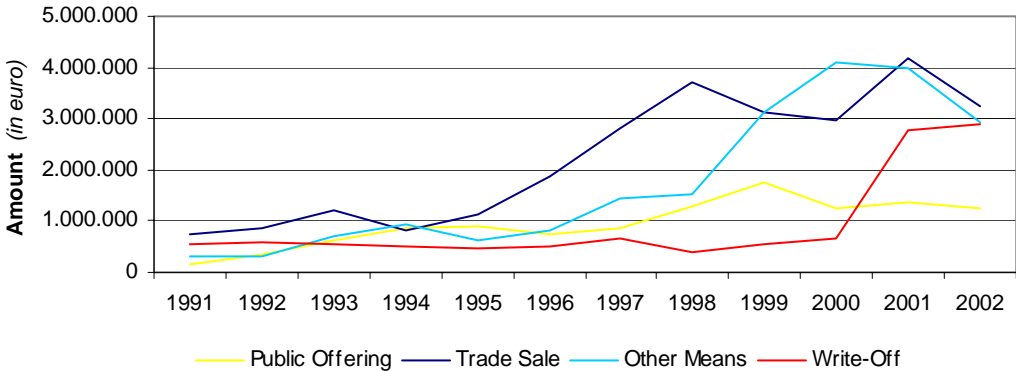
Source: EVCA yearbook 1992-2003

There is an upward trend in exit vehicle activity between 1991 and 2000, especially after 1996. From this year onwards, the amount of divestment by trade sale and other means

increased. Other means by number of divestment even became the most important exit vehicle from 1994 onwards, which is the result of a more mature private equity market across Europe.[9] The amount of divestment by public offering fluctuated; it was low during the adverse market conditions in the early 1990s, reached a mid-time high in 1995, and an all-time high in 1999. This trend provides evidence for the IPO market cycle, and the timing of IPOs; public offering activity tends to follow stock market conditions. The amount of divestment by write-off were high in the early 1990s, due to the adverse market conditions and the closing of the first investment cycle in most countries. The upward trend in exit vehicle activity changed in 2000.

The burst of the Internet bubble and the worldwide decline of stock markets caused private equity levels to drop after 2000. As a result of difficult economic conditions for many private equity companies, portfolio holdings across Europe were restructured, which translated into a clean up of the portfolios held by European private equity investors (EVCA, 2002). The high share of write-offs to total amount of divestment indicates, as during the early 1990s, the bad performance of the private equity market in Europe. Private equity investors are under pressure and have trouble to exit their investments. Graph 2 shows the investment and divestment trends in private equity for the 15 European Countries in this study between 1991 and 2002.

Graph 2. Investment and divestment, between 1991 and 2002
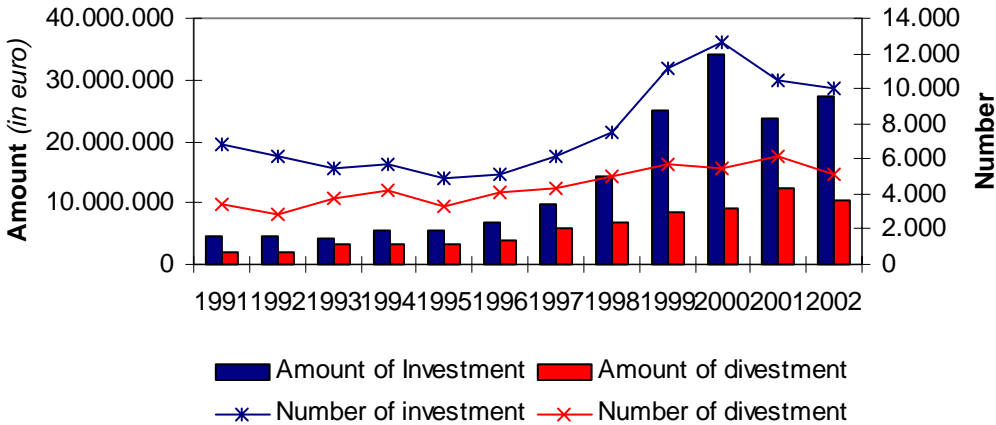
Source: EVCA yearbook 1992-2003

Between 1991 and 2000 the amount (+644%), and the number of investments (+86%) increased, while the amount (+393%), and the number of divestments (+63%) also increased. The amount of investments increased more than the number of investments, which indicates that the average investment amount increased a lot in this period, likewise for divestments although investments increased more than divestments. Consequently, the gap between investments and divestments increased, especially from 1998 onwards. Moreover, the all-time high of private equity investments in 2000 added some extra pressure to private equity investors to find viable exit vehicles for their investments.

The economic uncertainty over the last two years has affected private equity exit activity in Europe. Low stock prices or a declining IPO market might be a precursor of an oncoming recession, in which a trade sale or an IPO on favourable terms is unthinkable (Lerner and Hardymon, 2001). With potential trade buyers struggling to raise equity to finance acquisitions, and IPOs difficult to place with investors at present, many private equity companies are rather forced to retain investments longer and hope for an upturn in market

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[9] See appendix I: Exits in European private equity; graph 3.

sentiment. As during the adverse market conditions of the early 1990s private equity investors have to deal with investments that need to be divested one way or the other.

The IPO route is closed for the foreseeable future, and since the costs of going public are higher during adverse market conditions (Gompers and Lerner, 1999), an IPO is only feasible for larger companies that are able to justify a significant market capitalisation. Although, it is relatively easier to find a company that is willing to purchase smaller businesses for strategic reasons. In some circumstances trade buyers can be found for more modest performing investments and even distressed sales (Mason and Harrison, 2002). Some companies have postponed their IPOs. Other investments, mainly the less promising ones, have been acquired by other companies.

A trade sale is probably even more difficult at the moment. First of all, the market downgrades public companies that take risks. If a public company acquirers a private company outside of its core business the stock markets will downgrade the public company by selling shares, which will force the share price to drop. Secondly, potential buyers do not have easy access to cash (EVCA, 2002). Thirdly, European anti-trust regulations have become an increasingly important concern for private equity investors (EVCA, 2001). Trade sales were down largely due to this general economic uncertainty. This environment made most potential buyers considerably more cautious about pursuing acquisitions, and therefore they are distracted by their own performance (CMBOR, 2002).

Whilst there is undoubtedly a backlog of planned flotations and trade sales, there also remains a substantial population of older investments that do not seem to have clear exit strategies (CMBOR, 2002). In 1997 Wall and Smith (1997) already argued that a lot of old investments were in need of an exit. As a queue of IPOs and trade sales forms, there will be less capital available and this will lead to lower prices. As a result, private equity investors are currently exploring other exit vehicles. In adverse economic conditions, investors need to be alert to different exit possibilities such as a secondary sale, buyback, and restructuring as an alternative to an IPO or trade sale (Wright et al., 1994).

Private equity investors have become increasingly willing to buy from and sell to each other. Secondary sales have become a more viable exit alternative, the increase in buybacks is a symptom of the current adverse market conditions, and recapitalisation is becoming more important, primarily due to low interest rates (CMBOR, 2002). Private equity investors are looking for other exit opportunities, with an expected further rise in secondary sales, capital restructuring, refinancing and similar transactions (CMBOR, 2002).

Private equity investors are also interested in companies seeking to delist because of poor valuations creating growing opportunities for the public-to-private market. The trick in a public-to-private transaction is to find where the business is undervalued. This is also a great time for private companies to seek mergers with public companies because public companies valuations are so depressed (EVCJ, 2002).

The long-term trend in the IPO market has been towards bigger businesses. Investors are more inquisitive about the future growth prospects of companies. Companies are going to have to be bigger and better to survive on the stock market (EVCJ, 2002). The unwanted consequence for private equity investors is a step back towards the only investments they are able to profit from, which are the large acquisitions in later stage companies, because they are more visible for potential buyers and the stock markets. Provided there is a limited number of companies that fit with this picture in each country, this new scenario will close the growth period observed in the private equity industry since 1996.

5   Exit markets across European countries

Divestment opportunities play an important role in the development of private equity markets in general and venture capital in particular (Schertler, 2001). Thus, viable exit opportunities are extremely important to the development of a venture capital industry (Bygrave and Timmons, 1992).

The size of the local stock markets gives an indication for the exit opportunities (Wright et al., 1994), since there is a strong relationship between active stock markets and active venture capital markets (Black and Gilson, 1998). This chapter focuses on the stock market development and new stock markets for small companies across European countries.

5.1   Stock market development

The general theory in academic literature is that a liquid stock market is required to have an active venture capital market, which enlarges the exit possibility (Black and Gilson, 1998). The relative development of stock markets affects the extent to which an IPO is a feasible and attractive exit option (Wright, 1994). The existence of a well-developed stock market that permits exits through an IPO is critical to the existence of a vibrant venture capital market. The state of the development of the venture capital market is related to the development of the local stock markets of a country.

Historically, private equity investors in European countries have used the local stock market to exit their investments, while a few used NASDAQ. Furthermore, the fragmentation of the stock markets in Europe reduces both the market capitalisation and liquidity on each local stock market and hence exit opportunities for the private equity investors (Cowie, 1999). The importance of market capitalisation and profitable exit strategies confirm that there must be both a sufficient flow of potential investments and safe means of divestment for venture capital and private equity markets to develop (e.g. Jeng and Wells, 2000, and Black and Gilson, 1998). Market capitalisation reflects the overall breadth, depth, and liquidity of equity capital markets, while liquidity can be a major determinant of the development of private equity markets. The lack of liquidity is a particular problem in some European stock markets. The liquidity of local stock markets in Europe is an important determinant of the ability of private equity investors to sell their investment (Cumming and MacIntosh, 2001). Schwienbacher (2002b) finds that the relevant markets for private equity exits are less liquid in Europe[10] than in the United States. Private equity investors still focus on their home market to invest and divest their investments (EVCA, 2002), while the development of stock markets and private equity markets differ across Europe. This can be explained by the fact that the costs of monitoring investments abroad and the time and effort to sell a foreign investment are much higher (Marti and Balboa, 2001b). As a result, it takes more time for European private equity investors to exit their investments.

The absence of a large pan-European capital market is the key problem of private equity in Europe (Cowie, 1999). Currently, there are clear consolidation trends visible among European stock exchanges, which should lead to increased liquidity in European stock markets. However, Meggison (2001) concludes that no global venture capital market is emerging, nor is one likely to emerge for the foreseeable future.

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[10] The relative low level of venture capital in Europe and Asia-Pacific is the result of the absence of local liquid stock markets, especially stock markets for small high-growth potential companies such as NASDAQ (Schwienbacher, 2002a).

5.2   New stock markets

The development of efficient equity markets for growth companies is crucial for the long-term prosperity of the venture capital market (Bygrave and Timmons, 1992). In the absence of functioning public markets for high-growth companies, the prospects regarding attractive returns for private equity investors are very limited. The creation of stock markets for small companies was a key factor in the development of private equity markets across European countries. The Unlisted Securities Market (USM) was created in 1980 in London, after which several other stock markets for small companies were created across Europe. However, most stock markets were barely viable since they listed only a few companies (Bygrave et al., 1994).

In the 1990s major changes occurred in European stock markets. New stock markets for small companies with a high growth potential have been created to replicate the success of NASDAQ in the United States. The first 'new' market to appear was the Alternative Investment Market (London), which was created in June 1995, followed by EASDAQ and the Nouveau Marché (France). In early 1997 new markets also appeared in Amsterdam (Nieuwe Markt), Brussels (Euro.nm Bruxelles), and Frankfurt (Neuer Markt). In addition, others followed in Milan (Nuovo Mercato), and Madrid (Nuevo Mercado), Stockholm and Zurich (Schertler, 2001).

In April 1997 the new markets of Amsterdam, Brussels, Frankfurt, and Paris set up the Euro.nm alliance in an effort to create a pan-European market, which was extended with the Nuovo Mercato in 1999. The Neuer market has been set up on the model of NASDAQ by local established stock markets, with the goal to help companies with a high growth potential to go public, raise equity and grow further (Bottazzi and Da Rin, 2002a). Bottazzi and Da Rin (2002b) conclude that the new stock markets have changed the opportunities for innovative companies to go public. They provided private equity investors with an exit opportunity, and thereby private equity investors can turn their capital and knowledge to new investments. Bottazzi and Da Rin (2000) find that innovative companies that go public on the new stock markets substantially increase their size and capital expenditure, and use the proceeds to finance their growth. However the new stock markets are far from providing a pan-European stock market for innovative, high-growth companies. Bottazzi and Da Rin (2002a), and Schertler (2001) conclude that although the venture capital market is expanding rapidly in Europe it is still immature compared to the United States.

The new markets opened during a period of high and rising valuation of (technology) stocks worldwide, which was followed by a steep fall since mid 2000 (Bottazzi and Da Rin, 2002b). Euro.nm closed in December 2000 after the merger of the Paris, Amsterdam, and Brussels stock exchanges into Euronext. This was due to difficulties in co-ordinating national regulators, to high costs in cross-border transactions and to changes in the strategic alliances of the participating stock exchanges. However, its constituent markets have continued their activity independently. Bottazzi and Da Rin (2002b) conclude that appropriate disclosure regulations (and their enforcement) are crucial for the success of new markets in Europe. The harmonisation of regulations and tax codes to prevent arbitrage opportunities within Europe is needed to achieve maximum growth in the European private equity industry.

6   Exit Climates

Exit climates are the conditions, which influence the viability and attractiveness of the various exit strategies. This chapter will focus on the factors that influence the choice of exit vehicle, and the exit timing. Assuming that private equity investors will generally exit their investment to maximise returns, exploring the exit choice and timing helps to explain why private equity investors exit their investments as they do.

The key factors that influence the exit choice and timing will be discussed. It is beyond the scope of this paper to discuss the other factors.[11] Information asymmetry, the termination date of private equity funds, stock market conditions, macro-economic factors, and legal system will be discussed, which all affect the exit choice and timing in one way or another.

6.1   Information asymmetry

A common view in the academic literature is that the choice of exit vehicle varies depending upon the degree of information asymmetry that exists between the seller and the potential buyer (e.g. Amit et al., 1998, and Fleming, 2002), and that return on investment differs by each exit vehicle to the extent that the potential buyer is able to alleviate information asymmetry and to value the company.

The costs of information asymmetry include: higher required rates of return, wider bid-ask spreads and illiquidity. The negative market reaction with respect to IPOs can influence the decision of whether to go public, and if so when and how (Lin and Smith, 1995). Cumming and MacIntosh (2002b) find that the greater the degree of information asymmetry between the selling venture capitalist and the buyer, the greater the likelihood of a partial exit to signal quality.

The severity of the information asymmetry confronting the company will influence the willingness of potential buyers to pay for the private equity investors' investment. Potential buyers who do not understand the company's product, or market will discount the value of the company to reflect their lack of understanding, and those who are best able to overcome information asymmetry will tend to pay the highest price (Cumming and MacIntosh, 2002a).

Outside public investors are not in the best position to value the company, while insiders (i.e. the management and their advisors) will be in a better position to buy out the private equity investor. In a buyback the information asymmetry is lowest because insiders know more about the company than anyone else, while strategic buyers in a trade sale or secondary sale will be able to overcome the information asymmetry. They are typically in the same or a similar business, and will understand the company's product and its market. One of the most significant disadvantages to an IPO is that other exit vehicles are characterised by less information asymmetry. Buyers in a public offering are incapable of solving information asymmetry, because they mainly rely on market intermediaries that price a new issue of the company (MacIntosh, 1997).

6.2   Fund termination date

Private equity investors raise their capital for a limited period through closed-end funds. These funds, which are often limited partnerships, will usually terminate after a decade, although extension of a few years is often possible (Gompers and Lerner, 1999). When this fund reaches a certain, predetermined size, the fund is closed. Then the financial resources

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[11] See Cumming and MacIntosh (2002a). They also discuss a number of company specific factors that affect the exit vehicle choice and timing of a venture capitalists investments. These other factors include: (1) monitoring, the ability of the new owners to monitor the managers; (2) Black and Gilson's implicit contract theory, transfer of control; (3) transaction costs of effecting a sale, and ongoing costs of operating as a public company; (4) managerial incentives, in the new configuration of share ownership; (5) transaction synergies, the potential for the realisation of transaction synergies upon combining the firm's product or technology with other products or technologies (6) capital raised, scale of the acquisition, and the ability of the new owner to meet future capital requirements; (7) risk bearing, the ability of the new owner(s) to bear risk; (8) promoting teamwork, common exit strategies and exit vehicles to promote teamwork; (9) reputation, the extent to which a particular form of exit enhances the venture capitalists reputation; (10) agency costs of debt; (11) public profile, may enhance the firms ability to sell its products and to raise capital in the future; (12) governance mechanisms, exit price will be a function of the various contractual and extra contractual mechanisms that are put in to restrain agency costs of debt.

from this fund are invested in different companies, which will take about three years. Partnerships are usually divested after a period of five to eight years (Lerner and Hardymon, 2001). Worldwide, about 80% of private equity funds are structured as a limited partnership (Fenn et al., 1995).

After the termination date private equity investors will return the capital, in the form of cash or stock of the portfolio companies, to the investors. However, limited partners clearly prefer cash or marketable shares, so that they can readily ascertain the value and convert their holdings to cash (Lin and Smith, 1995). The funds termination date affects the exit choice and timing of private equity investors (Cumming and MacIntosh, 2002a).

In closed-end funds it is important to consider the possible exit strategies, although changing conditions may delay or change the choice of exit vehicle (Wright et al., 1994). If the conditions for the private equity investors are not in their favour they can wait for a moment, but an exit has to be realised before the termination date. The incentive to exit will increase with the passage of time, and the pressure will increase when the fund approaches its termination date. If they do not exit their investment they will be forced to sell their investment at a low price. It will often affect the choice of exit, and can lead to an inferior exit vehicle when the termination date is looming and time is running out. Trade sale, buyback and secondary sale exits are more likely to occur as the fund termination date is looming, and the investment cannot exit by way of a public offering (Cumming and MacIntosh, 2002a).

The need to terminate the fund also forces the private equity investors to terminate underperforming companies and living dead investments in their portfolios. These investments need to be exited before the funds' termination date, because otherwise they need to be written off (Gompers and Lerner, 1999).

6.3   Stock market conditions

Stock market conditions are an important factor that affects the choice and timing of exit, not only the viability of an IPO, but also the viability of the other exit vehicles (Schwienbacher, 2002b). Not all private equity investments will be seeking a flotation, but favourable stock market conditions will be key for putting a price on the investment (Bygrave et al., 1994). Stock market conditions have a large influence on the success of an exit, which determines the return on the investment (Lerner and Hardymon, 2001).

In addition, IPO markets are highly cyclical: valuations vary significantly depending on the general economic climate and the state of the public markets. The attractiveness of an IPO relative to other exit vehicles will vary with the IPO market cycle (Cumming and MacIntosh, 2002a). The state of the IPO market is the main factor in determining the likely return to investors. Even a good business with a good track record, managed properly will find it quite difficult to raise money when the IPO market is closed. If the IPO market is closed and one has enough resources, one can wait for an upturn in market sentiment. Private equity investors are able to time IPOs by going public when equity values are high and using private financing when values are lower. Private equity investors are more likely to take a company public when their valuations are at absolute and short-run peaks (Gompers and Lerner, 1999).

6.4   Macro-economic factors

Macro-economic factors will continue to impact on levels of private equity activity with growing business confidence resulting from improving economic conditions, and low interest rates contributing to a positive environment (EVCA, 1998). Cumming et al. (2003) find that good exit opportunities typically occur when the economy is performing well.

The state of the country's economy will have an effect on private equity activity (Jeng and Wells, 2002). The most common measurement for macro-economic fluctuations is Gross Domestic Product (GDP). GDP growth leads to enhanced business opportunities, more

economic success and a more favourable environment for investors, which in its turn leads to more venture capital activity (Gompers and Lerner, 1998). More capital will become available, and consequently private equity investors tend to exit their investments sooner, since it is in their interest to exit old investments in order to re-deploy managerial resources to new investments (Cumming and MacIntosh, 2002a).

Bygrave and Timmons (1992) found that interest rates also affect the flows in private equity. Interest rates are indicative of the opportunity cost of holding money, and the real cost of borrowing bank debt. In addition, interest rates also serve as an indicator of both the depth of the debt market and the risk premium inherent in a given country (Kumar and Orleck, 2002). A higher interest rate suggests limited sources of borrowing and / or more risky borrowing and lending environments. Therefore, a higher interest rate signifies that private equity companies have less access to conventional money through the debt market, and face a higher risk premium.

6.5 *Legal system*

The legal system of a country may also affect exit timing and the choice of exit. Legal tradition of a country and their enforcement may affect the development of private equity markets, and exit vehicles. Two legal traditions exist being civil law, which contains three traditions French, German, and Scandinavian, and common law.

Black and Gilson (1998) concluded that there is a relationship between active stock markets and strong venture capital markets. The major differences in the relative national importance of capital markets are the result of differences in investor protections, as reflected by legal rules and the quality of their enforcement. Legal rules protecting investors and the quality of their enforcement differ greatly and systematically across countries (La Porta et al., 1998).

La Porta et al. (1998) conclude that there is a significant difference in the quality of the laws between legal traditions, with respect to investor protection laws (shareholder and creditor rights). In an earlier study La Porta et al. (1997) found strong evidence that the legal tradition affects the size and breadth of capital markets across countries. In addition, civil law countries have smaller and narrower debt and equity markets than common law countries, because of inferior investor protections. Investors in common law countries have more investor protection; consequently more investors are active in capital markets. As a result, it is harder for private equity investors to obtain capital in civil law countries, and to establish an active private equity market.

Kumar and Orleck (2002) suggest that as a result of less capital market development, weaker investor protections, and fear of contract repudiation, civil law countries suffer from less developed private equity markets. On the other hand, common law countries provide the incentives and legal protection that foster strong venture capital markets. Meggison (2001) suggests that venture capital will continue to be much more important in common law countries than in civil law countries for the foreseeable future. La Porta et al. (1997, 1998) argue that common law is critical for efficient capital markets, which are in turn critical for economic development.

However, Berkowitz et al. (2003) conclude that the way the law was initially transplanted and received has a strong indirect effect on economic development through its impact on law enforcement (legality), and that it is a more important determinant of effective legal institutions (legality) than legal tradition. A strong system of law enforcement could substitute for weak rules, since active and well-functioning courts can step in and rescue investors abused by the management.

The exit decision is affected by, among other things, information asymmetries between the original investor and the new owner(s). Because law enforcement affects the new owner(s) ability to resolve problems resulting from information asymmetries in a sale of the

firm, law enforcement may affect the timing and choice of the exit vehicle. Law enforcement has a large effect on the depth and breadth of both debt and equity markets. The quality of the legal system has a significant effect on the ability of firms in different countries to raise external finance.

Cumming and Fleming (2002) find that the legal system impacts both the investment decision and the exit process. In terms of the exit process, IPOs (for which investor protections are most important) are more likely the higher the legality index in a country, and buybacks (for which investor protections are least important) are more likely the lower the legality index. Cumming and Fleming (2002) find a higher legality index in a country associated with stronger investor protection, and a more active stock market. They find that in addition to the economic climate and transaction-specific venture capital variables, the legal and institutional environment is important to the development of active venture capital markets.

7 Hypotheses

This chapter will discuss several hypotheses that will be empirically tested in this study. The fact that exit vehicles vary over time is already confirmed by the findings of MacIntosh (1997), and the European divestment data between 1991 and 2002 confirm this result. However, the question is do exit vehicles differ across European countries, and why do they vary over time and differ across European countries. Therefore, the aim of this study is twofold; (1) do exit vehicles differ across European countries, and (2) why do exit vehicles vary over time and differ across European countries.

7.1 Do exit vehicles differ across European countries?
One of the main risks faced by private equity investors is the risk of not getting their money back. Thus, viable exit vehicles are extremely important for the development of private equity markets (Bygrave and Timmons, 1992). There must be both a sufficient flow of potential investments and safe means of divestment for private equity markets to develop (Jeng and Wells, 2000).

The main exit vehicles for a private equity investor are: (initial) public offering, trade sale (or acquisition), secondary sale, buyback (or redemption), and write-off (or liquidation) (MacIntosh, 1997). Given that the primary goal of the private equity investor is to maximise returns, IPOs and trade sales tend to dominate successful exits in practice (Smith, 2001). However, as already predicted by Wright et al. (1990) other exit vehicles, beside IPOs and trade sales, are developing as the private equity markets are progressing through its life cycle, and will come to play an increasingly important role.

Private equity investors in Europe have used their home markets to invest and exit their investments. This tendency meant that European markets tended to be of modest size and limited liquidity. Schwienbacher (2002b) finds that the relevant markets for private equity exits are less liquid in Europe than in the United States, and the liquidity of stock markets differs across European countries. The size of the local stock and acquisition markets gives an indication for the exit opportunities (Wright et al., 1994). Since there is a strong relationship between active stock markets and active venture capital markets, one would expect exit vehicles to differ across European countries with more developed stock markets and countries with less developed stock markets. Kumar and Orleck (2002) argue that the state of the development of the venture capital market is related to the development of the local stock markets of a country.

Whether exits differ across European countries will be analysed by mean difference tests. The data will be rearranged and analysed in two ways: (1) by stock market capitalisation, and (2) by local stock market for small companies.

Hypothesis 1: Exit vehicle activity in Europe is higher in countries with a more developed stock market versus countries with a less developed stock market.

Hypothesis 2: Exit vehicle activity in Europe is higher in countries with a local stock market for small companies versus countries without a local stock market for small companies.

7.2   Why do exit vehicles vary over time and differ across European countries?

Any discussion regarding the factors that affect private equity activity must focus on what affects the three decision makers responsible for the money, the deal flow, and the returns; the investors, the entrepreneur, and the venture capitalist (Bygrave and Timmons, 1992). Prominent among the factors influencing those three constituents are the capital markets, government policies, technologies, and industries. Bygrave and Timmons (1992) conclude that capital markets, especially the IPO market, and interest rates affect the flows in venture capital.

Kumar and Orleck (2002) find market capitalisation, interest rate, and legal traditions to be the most powerful variables in explaining the variation in private equity market development between countries.

But what are the determinants of private equity exits? Not all of the factors discussed in chapter 6 can be tested empirically, either because it would be difficult to devise an appropriate empirical test, or because of limitations in the data set. Asymmetric information and fund termination data will be excluded in the empirical part of this thesis, because these data simply are unavailable. This study will focus on market capitalisation, cost of capital, gross domestic product (GDP) growth, legal traditions, and law enforcement as possible determinants. Why exit vehicles vary over time and differ across countries will be analysed by a multiple linear regression model.

Market Capitalisation

Stock market conditions are an important factor that affect the choice and timing of exit, not only the viability of an IPO, but also the viability of the other exit vehicles (Schwienbacher, 2002a). The development of stock markets differs across Europe, and the lack of liquidity is a particular problem in some European stock markets. Since private equity investors still focus on their home markets to exit their investments, the local stock and acquisition markets give an indication for the exit opportunities (Wright et al., 1994), whereas Cumming et al. (2003) find a strong link between stock markets and M&A markets.

Results by Kumar and Orleck (2002) indicate that differences in market capitalisation are one of the key reasons why private equity market activity varies in both time and country. Market capitalisation reflects the overall breadth, depth, and liquidity of equity capital markets. A higher market capitalisation leads to more liquidity; consequently, it will be easier for private equity investors to exit their investments. Therefore, one would expect that higher market capitalisation will lead to more private equity exit vehicle activity.

Hypothesis 3: Market capitalisation is positively related to private equity exit vehicle activity.

Interest rates

Bygrave and Timmons (1992) conclude that interest rates are an important factor that affects the flows in private equity, and EVCA (1998) argues that low interest rates will contribute to a more positive environment for private equity, and will effect private equity activity. One of the consequences of the current adverse market conditions is that recapitalisation is becoming more important primarily due to low interest rates (EVCJ, 2002).

Interest rates are indicative of the opportunity cost of holding money, and the real cost of borrowing bank debt. In addition, interest rates also serve as an indicator of both the depth of the debt market and the risk premium inherent in a given country (Kumar and Orleck, 2002). A higher interest rate suggests limited sources of borrowing and / or more risky borrowing and lending environments. Therefore, a higher interest rate signifies that private equity companies have less access to conventional money through the debt market, and face a higher risk premium. Consequently, private equity investors will delay their exit. One would expect that high interest rates will lead to less private equity exit vehicle activity, and low interest rates to more private equity exit vehicle activity.

Hypothesis 4: Interest rates are negatively related to private equity exit vehicle activity.

GDP growth

The state of the economy in a country will also have an effect on the development of private equity markets (Jeng and Wells, 2002). The best measure for macro-economic fluctuations is GDP growth. This variable is used instead of the GDP in absolute terms in order to avoid any possible heteroskedasticity[12] problems.

GDP growth leads to more economic success and a more favourable environment for private equity investors. As a result, more capital will become available, and consequently private equity investors tend to exit their investments sooner, since it is in their interest to exit old investments in order to re-deploy managerial resources to new investments (Cumming and MacIntosh, 2002). Cumming et al. (2003) argue that good exit opportunities typically occur when the economy is performing well. One would expect that more GDP growth will lead to more private equity exit vehicle activity.

Hypothesis 5: GDP growth is positively related to private equity exit vehicle activity.

Legal traditions

La Porta et al. (1998) found a strong relationship between capital market development across different countries and legal traditions. In addition, Black and Gilson (1998) found a strong relationship between developed capital markets and active venture capital markets. Meggison (2001) argues that venture capital will continue to be more important in common law countries than in civil law countries for the foreseeable future. In addition, Kumar and Orleck (2002) find legal tradition to be one of the key variables in explaining the variation in private equity market development between countries.

Legal tradition may affect the development of private equity markets, and as a result the development of (other) exit vehicles. To incorporate this idea, legal traditions have been made operational as a dummy variable. Any country with common law was assigned a score of one in legal tradition, whereas any country with civil law was assigned a score of zero. One would expect that common law will lead to more private equity exit vehicle activity, and therefore a positive relationship between legal tradition and private equity exit vehicle activity.

Hypothesis 6: Legal tradition is positively related to private equity exit vehicle activity.

Law enforcement

La Porta et al. (1998) find that a strong system of law enforcement, which differs a great deal across the world, could substitute for weak rules. A country lacking law enforcement can only offer limited investor protection for outside investors, private equity investors will have a more difficult time to obtain money, and as a result establish an active venture capital market. In addition, law enforcement affects the new owner(s) ability to resolve problems resulting from information asymmetries in a sale of the company. The lack of law enforcement fosters

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[12] See section 8.1 for a detailed discussion of heteroskedasticity.

an environment that leads to the inefficiencies that arise due to the presence of asymmetric information, which in its turn affects the choice and timing of exit vehicles.

Cumming and Fleming (2002) conclude that the legal system impacts the exit process, and that corporate governance and law enforcement play an important role in both the investment and divestment process. Capital market development in general and exit vehicle activity in particular may also be dependent on the level of law enforcement in a country. One would expect that more law enforcement will lead to more private equity exit vehicle activity. *Hypothesis 7: Law enforcement is positively related to exit vehicle activity.*

8   Data & Methodology

This chapter will discuss the data and methodology of this study. It will introduce the variables used in this study. Some variables needed to be adjusted due to potential heteroskedasticity problems. The methodology of the mean difference tests and the multiple linear regression model will also be discussed.

8.1   Data
There are limitations, in both the breadth and depth, where it is possible to obtain and / or present private confidential information. Public information regarding IPOs is available, but private information is very limited and difficult to obtain (Cumming and Fleming, 2002). The best data for this study is the survey data presented by the European Venture Capital Association (EVCA).[13] The EVCA yearbook contains the results of the annual European private equity survey, and the statistics are intended to represent the best estimate obtainable of the total private equity in the previous year in Europe (EVCA, 2003). The main limitation of this study is the availability of just one observation per country per year, compiled homogeneously by the EVCA, for all countries covered. The length of the period is limited by the availability of the divestment data, before 1991 the EVCA studies did not contain a breakdown of exit vehicles.

This study uses the amount of divestment[14] data between 1991-2002 presented in the EVCA yearbooks of 1992-2003. These yearbooks present the statistics of 15 separate countries; Austria, Belgium, Denmark, Finland, France, Germany, Republic of Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.[15] These represent the most active private equity activity countries in Europe.

From 1998 onwards the divestment data presented a more detailed breakdown of exit vehicles.[16] For the purpose of this thesis, the exit vehicles have been rearranged as follows: (1) public offering (flotation, and sale of already quoted equity post flotation), (2) trade sale, (3) divestment by other means (for instance repayment of principal loans, sale to another venture capitalist, sale to a financial institution, management buybacks, and redemption of preference shares), and (4) write-off (EVCA, 1999).

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[13] The European Private Equity and Venture Capital Association (EVCA) represents the European private equity sector, and their activities cover the whole range of private equity (EVCA, 2003).
[14] The amount of divestment is calculated at cost, rather than the amounts actually realised by any sale. It does not therefore reflect the amounts that private equity investors actually receive (EVCA, 2003).
[15] The EVCA yearbooks also present the statistics of Greece and Iceland, which have been excluded in this study due to data unavailability. In addition, pilot studies for several Central European countries have been undertaken by the EVCA, but are not included in this paper.
[16] The EVCA yearbooks between 1992-1998 categorise the exit vehicles as follows: public offering, trade sale, other means, and write-off. The EVCA yearbooks between 1999-2003 categorise the exit vehicles as follows: public offering (flotation, and sale of already quoted equity post flotation), trade sale, repayment of principal loans, secondary sales, other means (for instance management buybacks, and redemption of preference shares), and write-off.

The dependent variables are total divestment, public offering, trade sale, other means, and write-off. Total divestment has been included to provide an overall picture of the successful exit vehicles. The annual data of the independent variables, total market capitalisation, (real) GDP growth, interest rate (long-term), legal tradition, and law enforcement are also gathered for the 15 European countries. In this study, law enforcement will be measured by the legality index (Berkowitz et al., 2003).

In order to do the statistical tests some variables needed to be controlled due to potential heteroskedasticity problems. The problem of heteroskedasticity signifies inconsistency in the variance of the variables. This problem results in the inability to determine the statistical significance of the empirical estimators. Adjustments to some variables are needed for two reasons: (1) countries differ in economic level, and each country has a different economic growth rate. The greater the economic level, the higher the observed variability, and (2) all variables are originally expressed in nominal terms. An observed increase over time in a variable could exclusively be due to inflation. In order to control heteroskedasticity and inflation, the dependent variables and total market capitalisation were divided by real GDP, since real GDP also incorporates the effect of inflation.

Table 1 provides a summary of the variables used in this study, with a short description and their source. All available data has been collected, nevertheless some divestment data are unavailable. The unavailable data contain total divestment, public offering, trade sale, other means, and write-off data for Austria in 1994, Belgium 1992 and Germany 1991-1992, and public offering and trade sale data for Germany 1993-1996.

Table 1: Variables

Variable	Description	Source
Total divestment	The total amount divested by the successful exit vehicles; public offering, trade sale, and other means, at cost divided by GDP.	EVCA (1992-2003)
Public offering	The amount divested by public offering (flotation / IPO and sale of already quoted equity post flotation) at cost divided by GDP.	EVCA (1992-2003)
Trade sale	The amount divested by trade sale at cost divided by GDP.	EVCA (1992-2003)
Other means	The amount divested by other means (for instance repayment of principal loans, secondary sales, management buybacks, redemption of preference shares) at cost divided by GDP.	EVCA (1992-2003)
Write-off	The amount divested by write-off at cost divided by GDP.	EVCA (1992-2003)
Total market capitalisation	The most important companies by market value (share price multiplied by number of ordinary shares in issue) divided by GDP. The precise number of constituents varies from market to market, according to the size of the market capitalisation, and changes to reflect current market conditions.	DataStream

Variable	Description	Source
Interest rate	Average of daily figures of the yield on long-term government bond on the secondary market with residual maturity of about 10-years.	DataStream
GDP growth	The value added growth (percentage change from the previous year) in the total economy in constant prices.	DataStream
Legal tradition	The two legal traditions are common law and civil law. Legal tradition has been made operational as a dummy variable based on the work done by La Porta et al. (1998). Common law countries were assigned a score of one in legal tradition, whereas civil law countries were assigned a score of zero.	La Porta et al. (1998)
Law Enforcement	The legality index based on the work of Berkowitz (2003) is used to measure law enforcement. The legality index is based on the five proxies for law enforcement used by La Porta et al. (1998), and is defined as follows: legality = 0,381 * (efficiency of judiciary) + 0,578 * (rule of law) + 0,503 * (absence of corruption) + 0,347 * (risk of expropriation) + 0,384 * (risk of contract repudiation).	Berkowitz et al. (2003)

8.2 Methodology

This section will discuss the methodology used in this study. The difference between exit vehicles across countries will be measured by mean difference tests, and a multiple linear regression model will measure the determinants of exit vehicles.

Whether exit vehicles differ across European countries will be analysed with two mean difference tests. The exit vehicle data will be rearranged in two separate ways: by stock market development, and by local stock market for small companies. The mean difference of total divestments (TOTDIV), pubic offering (PUBOFF), trade sale (TRSALE), divestment by other means (OTHER), and write-off (WROFF) will be analysed. The computer programme used for these mean difference tests is SPSS.

First of all, the 15 countries are rearrangement by stock market development, and are divided in three separate groups: high, intermediate, and low. Countries with high developed stock markets are: France, Germany, Italy, Switzerland, and the United Kingdom, intermediate developed stock markets: Belgium, Finland, the Netherlands, Spain, and Sweden, and low developed stock markets: Austria, Denmark, Ireland, Norway, and Portugal. The statistical method used is a multiple comparison test; the Tamhane's T2 test. This test is a conservative pair wise comparisons test based on a t-test, and is the best test since variances are unequal.

Secondly, the 15 countries are rearranged by existence or absence of a local stock market for small companies. Countries with a local stock market for small companies are: Belgium, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom, while countries without a local stock market for small companies are: Austria, Denmark, Finland, Ireland, Norway, and Portugal. Most local stock markets started

operating from 1996 onwards, and therefore the data period for this test will be limited from 1996 to 2002. The statistical method used in this test is the Independent Samples T-test.

Why exit vehicles vary over time and differ across countries will be analysed with a linear multiple regression model. The data in this study contain information on cross-sectional units observed over time; a number of cross-sectional units are observed over a number of periods. Such data is called pooled time series, cross-section data.[17] The model makes use of pooled cross-sectional time series data in order to estimate the independent variables on the dependent variables. The dependent variables are total divestments (TOTDIV), public offering (PUBOFF), trade sale (TRSALE), other means (OTHER), and write-off (WROFF). The independent variables will be total market capitalisation (TOTMK), GDP growth (GDP), interest rate (INT), legal tradition (LEGTRA), and law enforcement (LAWENF). The regression analysis is executed for all dependent variables individually to determine which independent variables affect each dependent variable. The computer programme used for this regression analysis is Econometric Views (Eviews).

In summary, the multiple linear regression equation is based on the following model[18]:

$$y_{it} = \alpha_{it} + x_{it}{}' \beta_{i\,+} \varepsilon_{it} \,,$$

, where i denoting countries (the cross section dimension) and t denoting time (the time series dimension). The dependent variable is y, since one can try to predict its values based on the values of x, the independent variables. The intercept is α, it is the predicted value for y when x is 0. The slope is β, it is the change in y when x changes by one unit, and ε is the error variable.

First of all, the largest sample possible in each cross-section is used. An observation is excluded if any of the explanatory or dependent variables for that cross-section are unavailable in that period.

Secondly, there are two types of explanatory variables: common coefficients and cross-section specific coefficients. Explanatory variables that have the same coefficient across all cross-section members of the pool need to be entered as common coefficient, and explanatory variables that have different coefficients for each member of the pool need to be entered as Cross section specific coefficients. First of all, all independent variables were included as common coefficient. Secondly, each independent variable has individually been included as cross section coefficient to find variables with different coefficients across the cross-sections.

In this study, the intercepts α_i are specified as common. The common intercept gives an identical intercept for all pool members: $\alpha_{it} = \alpha$. Although the fixed effects estimator allows α_i to differ across cross-section units by estimating different constants for each cross-section, the number of observations is not adequate to use the fixed effects intercept.

Next, since the data is cross-sectional, cross-section weights have been used. A Feasible Generalised Least Squares (FGLS) specification is estimated, assuming the presence of cross-section heteroskedasticity. In addition, using Seemingly Unrelated Regression (SUR; sometimes referred as the Parks estimator) was not possible in this study, since the number of periods used in the estimation is smaller than the number of cross-sections. Moreover, at T=12 the time series is quite limited. Given these conditions, any problems that arise due to serial correlation are unlikely to be present.

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[17] For a more detailed study of cross-section data, see Beck and Katz (1995), and Stimson (1985).

[18] See Greene (2000) for a technical discussion of the model used in this thesis.

Cross-sectionally dominant systems are more likely to be plagued by problems of heteroskedasticity (Stimson, 1985). In addition, White's test for heteroskedasticity is used to adjust the variance covariance matrix. This test estimates covariance's that are robust to general heteroskedasticity. This form of heteroskedasticity is more general than the cross-section heteroskedasticity described above, since variances within a cross-section are allowed to differ across time.

For all dependent variables four regression models have been undertaken. GDP growth has been excluded in model I, since all dependent variables are already divided by real GDP. Although the dependent variables and market capitalisation have been divided by real GDP, GDP growth could still improve the model and be a significant determinant. In order to find this out, GDP has been included in model II. Furthermore, the coefficient for TOTMK differs across countries. As a result, model I and model II were executed once more with TOTMK as cross-section specific coefficient in model III and model IV. In other words, model I and model III does not contain GDP as independent variable, while model II and model IV do contain GDP, and model I and model II use TOTMK as common coefficient, while model III and model IV use cross-sectional specific coefficients for TOTMK.

9 Results

The aim of this study is, as already mentioned, to test whether exit vehicles do differ across European countries, and why exit vehicles vary over time and differ across European countries. First of all, the results of the two mean difference tests will be discussed, to determine whether exit vehicles differ across European countries. Secondly, the results of the multiple regression analysis will be discussed, to determine why exit vehicles vary over time and differ across European countries.

9.1 *Mean difference stock market development*
This section will discuss the results of the multiple comparison mean difference test in exit vehicles by high, intermediate, and low developed stock markets. Table 2 shows the results of this mean difference test.[19] The results of TOTDIV, the sum of the successful exit vehicles, will be discussed first. In addition, the findings for PUBOFF, TRSALE, OTHER, and WROFF will be discussed, and an explanation will be provided. An explanation for TOTDIV is not provided since it can be explained by the series of explanations provided for the successful exit vehicles; public offering, trade sale, and other means.

The variable means are highest in high-developed stock markets, lowest in low developed stock markets and in between in intermediate developed stock markets. In other words, the amount of divestment is highest in high-developed stock market countries, lowest in countries with low developed stock markets, and in between in countries with intermediate developed stock markets. The results find significant mean differences between the three groups.

The mean difference is statistically significant for TOTDIV, PUBOFF, TRSALE, and OTHER, except for OTHER between high and intermediate, whereas for WROFF it is only statistically significant between high and low developed stock markets.

These findings are an indication that developed stock markets are critical for an active private equity market. This confirms the general academic belief that a well-developed stock market is indispensable for the development of private equity markets. The mean difference in public offering and trade sale can be explained by the fact that, as already mentioned before, the development of stock markets are an indication for the attractiveness of public offerings

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[19] See appendix II: Empirical results.

and trade sales. An explanation for the mean difference in other means is that when the private equity markets processes through its life cycle other exit vehicles, beside public offerings and trade sales will become more important. The mean difference in write-off can be explained by the fact that more private equity activity will also lead to more write-offs. The results of the other variables indicate more private equity activity in high versus low developed stock market countries that will also lead to more write-offs. There are less viable exit vehicles in countries with low developed stock markets. As already mentioned before, well-developed stock markets are needed for the development of private equity markets. Public offerings will be less viable in low developed stock markets, and exit vehicles by other means still need to be explored.

Exit vehicle activity differs across countries, and the development of stock markets appears to be positively related to exit vehicle activity. These results provide strong evidence for hypothesis 1; exit vehicle activity in Europe is higher in countries with more developed stock markets, than countries with lower developed stock markets, although the OTHER mean difference between high and intermediate is not significant, and the WROFF mean difference is only significant between high and low.

9.2   Mean difference stock markets for small companies
This section will discuss the results of the mean difference test between the existence and absence of a local stock market for small companies. Table 3 shows the results of this mean difference test.[20] The results of TOTDIV, the sum of the successful exit vehicles, will be discussed first. Furthermore, the results of PUBOFF, TRSALE, OTHER, and WROFF will be discussed, and an explanation will be provided. Once again, an explanation for TOTDIV is not provided since it can be explained by the series of explanations provided for the successful exit vehicles; public offering, trade sale, and other means.

The mean of the variables differs between the existence and absence of a local stock market for small companies. There seems to be more exit vehicle activity in countries with a local stock market for small companies, then in countries without a local stock market for small companies. The results show that the variances for all variables in both groups differ from each other, and therefore the t-test for 'equal variances not assumed' is used. Consequently, the power of the findings will be lower, but on the other hand somewhat safer as it rejects the hypothesis less quickly.

The results provide statistical significant evidence at the 1% level that the mean in TOTDIV is higher in countries with a local stock market for small companies, than countries without a local stock market for small companies. In addition, statistical significant evidence at the 1% level for a mean difference is also found in the results of PUBOFF, TRSALE, and OTHER, while for WROFF it is only statistically significant at the 10% level. Once more, the means are higher in countries with a local stock market for small companies, than countries without a local stock market for small companies.

These findings are an indication that the existence of a local stock market for small companies leads to more exit vehicle activity. This is once more an indication that developed stock markets are indispensable for the development of private equity markets. The existence of a local stock market for small companies will increase the viability and attractiveness of public offerings, which is the explanation for more public offering activity. An explanation for more trade sales is that moving towards a public offering can trigger off a trade sale. As already mentioned before, in more developed private equity markets exits by other means will become more important. Once more, higher write-off activity in countries with a local stock market for small companies can be explained by more private equity activity leading to more write-offs, nevertheless it is only statistically significant at the 10% level.

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[20] See appendix II: Empirical results.

Exit vehicle activity appears to be positively related to the existence of a local stock market for small companies. These results provide strong evidence for hypothesis 2; exit vehicle activity is higher in countries with a local stock market for small companies than countries without, although the evidence for WROFF is only statistically significant at the 10% level.

9.3   Regression analysis
This section will discuss the results of the regression analysis. Table 4 to 8 show the results of the four regression models for each dependent variable individually.[21] Once more the results of TOTDIV will be discussed first. In addition, the results of PUBOFF, TRSALE, OTHER, and WROFF will be discussed, and an explanation will be provided. An explanation for TOTDIV is not provided since it can be explained by the series of explanations provided for the successful exit vehicles; public offering, trade sale, and other means.

The results of the TOTDIV regression analysis find statistical significant evidence for TOTMK, INT, LAWENF, and GDP. TOTDIV is positively related to TOTMK, except for Austria and Ireland, and negatively related to INT, GDP, and LAWENF.

The results of the PUBOFF regression analysis find statistical significant evidence for TOTMK, INT, GDP, and LAWENF. There is a positive relationship between PUBOFF and TOTMK, except for Ireland. The explanation for this relationship in general is that when total market capitalisation is high, valuations will be high, and as a result public offerings become more attractive. The exception for Ireland can be explained by the fact that many private equity investors in Ireland use the stock markets in the United Kingdom to exit their investment. Furthermore, there is a negative relationship between PUBOFF and INT, due to both the opportunity cost of divesting and the risk inherent in the given market. As INT increases, there is a higher opportunity cost to private equity divesting. In addition, a higher cost of capital indicates a high level of either country or overall market risk. These types of risk both discourage private equity divesting. In addition, there is a positive relationship between PUBOFF and GDP. When GDP growth is high there will be more capital available, and private equity investors will exit their investments sooner, and vice versa when GDP growth is low. Finally, there are mixed results for the relationship between PUBOFF and LAWENF, which is positive in model I, and model II, while it is negative in model III, and model IV. The positive relationship between PUBOFF and LAWENF can be explained by the impact of LAWENF to information asymmetry. Information asymmetry is important to exit vehicles, but especially to a public offering since it is highest in a public offering. The degree of law enforcement can provide investors in a public offering with some degree of investor protection. The negative relationship between PUBOFF and LAWENF is rather surprising, and contrary to the empirical findings of Cumming and Fleming (2002). However, it is in line with the findings of Allen and Song (2002) that private equity activity is negatively related to LAWENF.

The results of the TRSALE regression analysis find statistical significant evidence for TOTMK, INT, GDP, and LAWENF, while only in model II for LEGTRA. There is a positive relationship between TRSALE and TOTMK, except for Austria, Denmark, and Ireland. The explanation for this relationship in general is that the size of the stock markets in a country are an indication for the exit opportunities in general, high market capitalization will consequently lead to more exit vehicle activity. A possible explanation for the negative relationship for Ireland is already mentioned above, while a possible explanation for Austria and Denmark could be that private equity investors in these countries exit their investments in Germany. It is easier to exit investments in Germany, since the German private equity market is much more developed. Furthermore, there is a negative relationship between TRSALE and

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[21] See appendix II: Empirical results.

INT, as already mentioned above due to both the opportunity cost of divesting and the risk inherent in the given market. In addition, there is a negative relationship between TRSALE and GDP. GDP is a general proxy for the economy, and when the economy is performing worse, less capital will be available, and stock markets will decrease. As a result IPOs will be less viable and private equity investors will turn to trade sales and other exit vehicles to exit their investment. These findings are in line with the inverse relationship between IPOs and trade sales found by MacIntosh (1997). Finally, there is a negative relationship between TRSALE and LAWENF, which indicates that private equity investors tend to exit by way of trade sale in countries with less law enforcement. These results are in line with Allen and Song (2002). It suggests that in a trade sale relationships are more important than contracts.

The results of the OTHER regression analysis find statistical significant evidence for TOTMK, INT and GDP. The relationship between OTHER and TOTMK is positive, except for Austria, and Denmark. Once more, the explanation for this relationship in general is that the size of the stock markets in a country are an indication for the exit opportunities. Furthermore, there is a negative relationship between OTHER and INT, as already mentioned before due to both the opportunity cost of divesting and the risk inherent in the given market. Finally, there is a negative relationship between OTHER and GDP. As already mentioned above, GDP is a general proxy for the economy, and when the economy is performing worse, less capital will be available, and stock markets decrease. As a result, private equity investors will turn to trade sales and other means to exit their investments.

The results for WROFF provide evidence that after dividing the dependent variables and TOTMK by real GDP, adding GDP as independent variable improves the model.[22] Consequently, the results of WROFF will focus on model II and model IV. The results of the WROFF regression analysis find statistical significant evidence for TOTMK, GDP, LAWENF, and LEGTRA. There is a positive relationship between WROFF and TOTMK. Private equity investors delay possible write-offs, while they hope to turn their investment around or to achieve an exit. When they finally write their investment off, they will want to compensate their loss of investment with other exit vehicles, which produce adequate multiples of return on investment, which are more likely when TOTMK is high. Furthermore, there is a negative relationship between WROFF and GDP. The amount written-off and GDP growth are a general proxy for the performance of the private equity market, and a general proxy for the performance of the economy respectively. When GDP growth is down, the economy is performing worse, there will be less capital available. As a result, it will be harder for a private equity investor to exit his investments. Therefore, more investments will be written-off. In addition, there is a positive relationship between WROFF and LEGTRA, which can be explained by the fact that common law is more attractive for private equity than civil law, since it provides investors with more protection. Countries with less investor protection have smaller and narrower capital markets (La Porta et al., 1997). Consequently, successful exit opportunities will be less in countries with less investor protection, i.e. civil law countries. In its turn, this will lead to more write-off activity in civil law countries. Finally, there are mixed results for the relationship between WROFF and LAWENF, which is positive in model I, and model II, whereas it is negative in model III, and model IV. The positive relationship between WROFF and LAWENF can be explained by the fact that contracts and their enforcement will play an important role in a write-off. The negative relationship between WROFF and LAWENF is rather surprising and once more contrary to the findings of Cumming and Fleming (2002). However, it is in line with the findings of Allen and Song (2002) that private equity activity is negatively related to LAWENF.

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[22] The decision to add a variable is made on the basis of whether that variable improves the model, based on the multiple R^2. R^2 tells you which percentage of the observed variability is explained by the independent variables included in the model (Greene, 2000).

In summary, these results find statistical significant evidence that market capitalisation, interest rate, GDP growth, and law enforcement are the main explanatory factors for total divestment, i.e. the sum of public offering, trade sale, and other means. In general these results are in line with the results for the individual successful exit vehicles. Moreover, these results find statistical significant evidence that write-off is affected by total market capitalisation, GDP growth, legal tradition, and law enforcement.

In general, these results provide strong evidence for hypothesis 3; total market capitalisation is positively related to private equity exit activity, except for Austria, Denmark, and Ireland. The results provide strong evidence for hypothesis 4; interest rate is negatively related to private equity exit activity, although not statistically significant for write-off. Only for public offering the results find strong evidence for hypothesis 5; GDP growth is positively related to private equity activity. The other regression analyses find strong evidence for a negative relationship between GDP growth and private equity exit activity. The results find little evidence, only for trade sales in model II and write-off, for hypothesis 6; legal tradition is positively related to private equity exit activity. This could be the result of only two common law countries in this study. Although statistically significance is very limited, there appears to be a positive relationship between legal tradition and the dependent variables. For public offering and write-off the results find mixed evidence for hypothesis 7; law enforcement is positively related to private equity exit activity, whereas the other exit vehicles find a negative relationship.

10 Conclusions

This chapter will discuss the most important findings of this study, and will make some suggestions for further research. The aim of this study is twofold: Does exit vehicle activity differ across European countries and why does exit vehicle activity vary over time and differ across European countries? This thesis examines the type of exit strategies adopted between 1991 and 2002 by private equity investors in 15 European countries; Austria, Belgium, Denmark, Finland, France, Germany, Republic of Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

The empirical part of this study contains mean difference tests and multiple regression models, which examine the exit vehicle variables. The exit vehicle variables are as follows: (1) public offering (flotation, and sale of already quoted equity post flotation), (2) trade sale, (3) divestment by other means (for instance repayment of principal loans, sale to another venture capitalist, sale to a financial institution, management buybacks, and redemption of preference shares), and (4) write-off. The total divestment variable has been included to provide an overall picture of the successful exit vehicles.

Two mean difference tests examine whether exit vehicle activity differs across European countries, measured by: (1) the level of stock market development, and (2) existence or absence of a local stock market for small companies. The multiple linear regression models examine which independent variables (i.e. market capitalisation, interest rate, GDP growth, legal tradition, and law enforcement) affect the exit vehicle variables in this study. In other words, why exit vehicle activity varies over time and differs across European countries.

First of all, the results of the first mean difference test provides statistical significant evidence that countries with high developed stock markets; France, Germany, Italy, Switzerland, and the United Kingdom, have more exit vehicle activity than countries with intermediate developed stock markets; Belgium, Finland, the Netherlands, Spain, and Sweden, while in its turn, the latter mentioned countries have more exit vehicle activity than countries with low developed stock markets; Austria, Denmark, Ireland, Norway, and

Portugal. There are only a few exceptions with no statistical significant evidence for a difference in other means between countries with high and intermediate developed stock markets, and only statistical significant evidence for a difference in write-off activity between countries with high and low developed stock markets. The results indicate that, within the private equity context, public offering, trade sale, other means, and write-off activity are higher in countries with a more developed stock market than countries with a less developed stock market.

Secondly, the results of the second mean difference test provides statistical significant evidence that exit vehicle activity is higher in countries with a local stock market for small companies; Belgium, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom, than countries without a local stock market for small companies; Austria, Denmark, Finland, Ireland, Norway, and Portugal. The results indicate that, within the private equity context, public offering, trade sale, other means and write-off activity are higher in countries with a local stock market for small companies, than countries without a local stock market for small companies.

The results of the regression analysis indicate that, within the private equity context, total market capitalisation, interest rates, and GDP growth are the most important determinants of exit vehicle activity. In general the results find statistical significant evidence at the 1% level for: (1) a positive relationship between total market capitalisation and public offering, trade sale, other means, and write-off activity, with some exceptions for Austria, Denmark, and Ireland, (2) a negative relationship between interest rates and public offering, trade sale, and other means, (3) a positive relationship between GDP growth and public offering, whereas the relationship with trade sale, other means, and write-off is negative, (4) a positive relationship between legal tradition and write-off, and (5) mixed results for a relationship between law enforcement and public offering, a negative relationship with trade sale, and mixed results for write-offs.

Further research regarding the question why private equity exit activity varies over time and differs across countries will be inevitable. Most importantly the research period should be extended with the years to come, which will provide indispensable information to draw a final conclusion regarding the determinants of the private equity exit process. A more profound comparison between the exit vehicles is of importance, but unfortunately the extended breakdown of exit vehicles is limited in the EVCA data set until 1998. Finally, both other exit climates and other exit alternatives (such as capital restructuring and refinancing), should be examined in depth, since they have become of more importance during recent years.

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Appendix I: Exits in European Private Equity

This appendix presents some figures regarding adopted exit vehicles for the 15 European countries in this study between 1991 and 2002. The exit vehicles are categorized as follows: (1) public offering (flotation, and sale of already quoted equity post flotation), (2) trade sale, (3) divestment by other means (for instance repayment of principal loans, sale to another venture capitalist, sale to a financial institution, management buybacks, and redemption of preference shares), and (4) write-off.

Figure 1. Amount of divestment, 1991-2002 (in percentage)
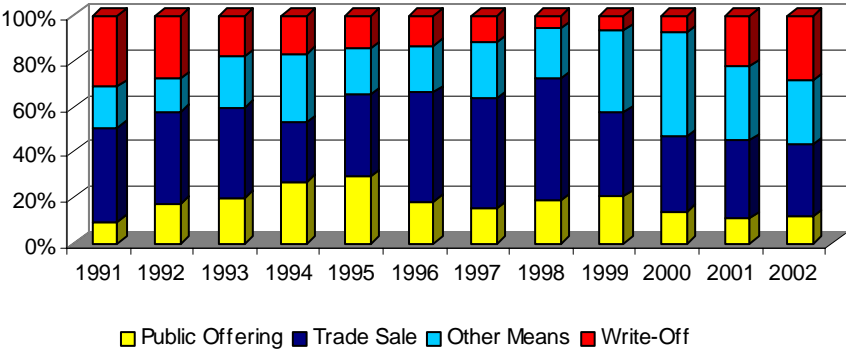
Source: EVCA yearbook 1992-2003

Graph 3. Number of divestment, 1991-2002[23]
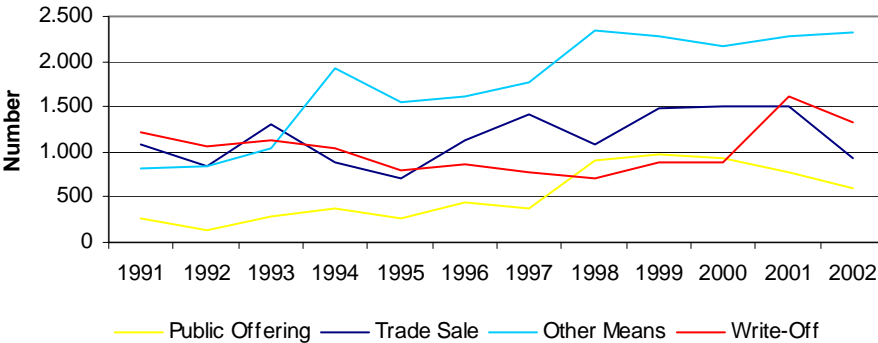
Source: EVCA yearbook 1992-2003

Figure 2. Number of divestment, 1991-2002 (in percentage)
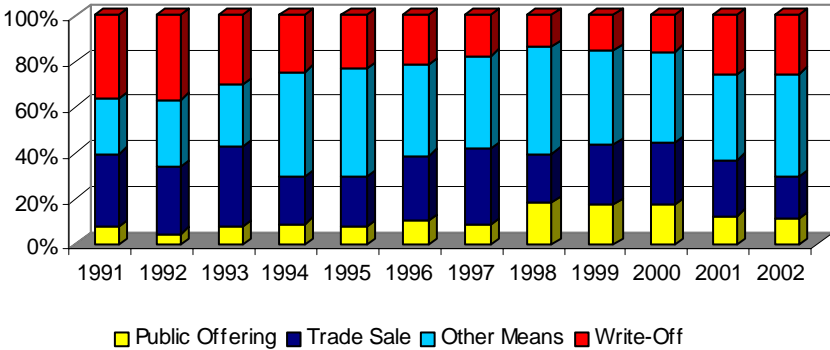
Source: EVCA yearbook 1992-2003

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[23] The number of divestment is calculated based on the number of divestments made by each investment vehicle. Each divestment is counted individually (EVCA, 2003).

Appendix II: Empirical results

This appendix presents the results of the mean difference tests, and the multiple linear regression models, both examine the exit vehicle variables; total divestment (TOTDIV), public offering (PUBOFF), trade sale (TRSALE), other means (OTHER), and write-off (WROFF). The mean difference tests examine whether exit vehicle activity differs across European countries, while the multiple linear regression models examine which independent variables (i.e. market capitalisation, interest rate, GDP growth, legal tradition, and law enforcement) affect the exit vehicle variables.

Table 2. Mean difference Market development
This table presents the results of the mean difference test, Tamhane's T2 test, between high, intermediate, and low developed stock markets. Countries with high developed stock markets are: France, Germany, Italy, Switzerland, and the United Kingdom, intermediate developed stock markets: Belgium, Finland, the Netherlands, Spain, and Sweden, and low developed stock market: Austria, Denmark, Ireland, Norway, and Portugal. *, **, *** indicate mean difference statistical significance at the 10%, 5%, and 1% level respectively.

Multiple Comparisons

Dependent Variable	(I) MKTDEV	(J) MKTDEV	Mean Difference (I-J)	Std. Error	Sig.
TOTDIV	high	intermediate	,0003(*)	,00012	,082
		low	,0005(***)	,00011	,000
	intermediate	high	-,0003(*)	,00012	,082
		low	,0003(***)	,00006	,000
	low	high	-,0005(***)	,00011	,000
		intermediate	-,0003(***)	,00006	,000
PUBOFF	high	intermediate	,0001(**)	,00003	,030
		low	,0001(***)	,00003	,000
	intermediate	high	-,0001(**)	,00003	,030
		low	,0000(*)	,00002	,055
	low	high	-,0001(***)	,00003	,000
		intermediate	,0000(*)	,00002	,055
TRSALE	high	intermediate	,0001(*)	,00006	,084
		low	,0003(***)	,00005	,000
	intermediate	high	-,0001(*)	,00006	,084
		low	,0001(***)	,00003	,001
	low	high	-,0003(***)	,00005	,000
		intermediate	-,0001(***)	,00003	,001
OTHER	high	intermediate	,0001	,00005	,335
		low	,0002(***)	,00005	,006
	intermediate	high	-,0001	,00005	,335
		low	,0001(***)	,00003	,004
	low	high	-,0002(***)	,00005	,006
		intermediate	-,0001(***)	,00003	,004
WROFF	high	intermediate	,0000	,00003	,452
		low	,0001(**)	,00003	,023
	intermediate	high	,0000	,00003	,452
		low	,0000	,00002	,235
	low	high	-,0001(**)	,00003	,023
		intermediate	,0000	,00002	,235

Table 3. Mean difference Private Equity Stock Market
This table presents the results of the mean difference test, Independent Sample T-test, between the existence and absence of a local stock market for small companies. Countries with (existence) a local stock market for small companies are: Belgium, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom, while countries without (absence) a local stock market for small companies are: Austria, Denmark, Finland, Ireland, Norway, and Portugal. *, **, *** indicate mean difference statistical significance at the 10%, 5%, and 1% level respectively.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
TOTDIV	Equal variances assumed	23,927	,000	4,569	103	,000	,0006(***)	,00012
	Equal variances not assumed			5,381	80,592	,000	,0006(***)	,00010
PUBOFF	Equal variances assumed	11,145	,001	3,368	102	,001	,0001(***)	,00003
	Equal variances not assumed			3,777	95,740	,000	,0001(***)	,00003
TRSALE	Equal variances assumed	29,228	,000	4,904	102	,000	,0003(***)	,00006
	Equal variances not assumed			5,639	86,857	,000	,0003(***)	,00005
OTHER	Equal variances assumed	8,968	,003	2,964	103	,004	,0002(***)	,00006
	Equal variances not assumed			3,523	76,528	,001	,0002(***)	,00005
WROFF	Equal variances assumed	2,640	,107	1,786	103	,077	,0001(*)	,00003
	Equal variances not assumed			1,924	102,952	,057	,0001(*)	,00003

Table 4. Total divestment regression analysis

This table presents the results of the multiple linear regression model $y_{it} = \alpha_{it} + x_{it}{}'\beta_i + \varepsilon_{it}$, , with i denoting country and t denoting year. The dependent variable is total divestment. The independent variables are (1) total market capitalisation (TOTMK), (2) interest rate (INT), (3) GDP growth (GDP), (4) legal tradition (LEGTRA), and (5) law enforcement (LAWENF). The regressors total divestment, and total market capitalisation have been normalised by dividing by real GDP. The table shows the coefficient, and the level of statistical significance in brackets. *, **, *** indicate statistical significance at the 10%, 5%, and 1% level respectively.

Dependent Variable: TOTDIV

Variable	Model I	Model II	Model III	Model IV
C	0.001044	0.002108	0.001111	0.001720
TOTMK	0.000437(***)	0.000421(***)		
TOTMK_AUSTRIA			-0.000165	-0.000154
TOTMK_BELGIUM			0.000585(***)	0.000586(***)
TOTMK_DENMARK			6.63E-06	1.26E-05
TOTMK_FINLAND			0.000263(***)	0.000267(***)
TOTMK_FRANCE			0.001326(**)	0.001327(**)
TOTMK_GERMANY			0.000649(***)	0.000641(***)
TOTMK_IRELAND			-6.22E-05	-3.38E-05
TOTMK_ITALY			0.000424(***)	0.000415(***)
TOTMK_NETHERLANDS			0.000759(***)	0.000762(***)
TOTMK_NORWAY			0.000993(***)	0.001021(***)
TOTMK_PORTUGAL			0.000754(***)	0.000757(***)
TOTMK_SPAIN			0.000262(**)	0.000268(***)
TOTMK_SWEDEN			0.000783(***)	0.000789(***)
TOTMK_SWITZERLAND			0.000111	0.000110
TOTMK_UK			0.001404(***)	0.001397(***)
INT	-1.91E-05(***)	-2.07E-05(***)	-1.54E-05(***)	-1.61E-05(***)
GDP		-0.001000(**)		-0.000573(**)
LEGTRA	0.000377	0.000360	0.000122	0.000135
LAWENF	-3.84E-05(***)	-3.98E-05(***)	-4.41E-05(***)	-4.51E-05(***)
Weighted Statistics				
R-squared	0.556636	0.510005	0.809004	0.812917
Adjusted R-squared	0.546265	0.495594	0.787106	0.790131
F-statistic	53.67196	35.38852	36.94473	35.67656
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.006730	0.971325	1.965760	1.972115

Total panel (unbalanced) observations: 176
Method: GLS (Cross Section Weights)
White Heteroskedasticity-Consistent Standard Errors & Covariance

Table 5. Public Offering regression analysis

This table presents the results of the multiple linear regression model $y_{it} = \alpha_{it} + x_{it}'\beta_i + \varepsilon_{it}$, with i denoting country and t denoting year. The dependent variable is public offering. The independent variables are (1) total market capitalisation (TOTMK), (2) interest rate (INT), (3) GDP growth (GDP), (4) legal tradition (LEGTRA), and (5) law enforcement (LAWENF). The regressors public offering, and total market capitalisation have been normalised by dividing by real GDP. The table shows the coefficient, and the level of statistical significance in brackets. *, **, *** indicate statistical significance at the 10%, 5%, and 1% level respectively.

Dependent Variable: PUBOFF

Variable	Model I	Model II	Model III	Model IV
C	-5.52E-05	-0.000478	5.97E-05	-0.000468
TOTMK	9.17E-05(***)	9.09E-05(***)		
TOTMK_AUSTRIA			0.000156	0.000145
TOTMK_BELGIUM			0.000139(***)	0.000138(***)
TOTMK_DENMARK			5.34E-05(***)	4.84E-05(**)
TOTMK_FINLAND			5.94E-05(***)	5.59E-05(***)
TOTMK_FRANCE			0.000262(***)	0.000260(***)
TOTMK_GERMANY			0.000106(***)	0.000112(***)
TOTMK_IRELAND			-8.33E-05	-0.000116
TOTMK_ITALY			7.23E-05(***)	7.72E-05(***)
TOTMK_NETHERLANDS			0.000126(***)	0.000123(***)
TOTMK_NORWAY			0.000463(***)	0.000439(***)
TOTMK_PORTUGAL			0.000201(***)	0.000196(***)
TOTMK_SPAIN			6.95E-05(***)	6.10E-05(***)
TOTMK_SWEDEN			0.000242(***)	0.000237(***)
TOTMK_SWITZERLAND			7.06E-05	7.22E-05
TOTMK_UK			0.000288(*)	0.000291(*)
INT	-1.60E-06(*)	-1.17E-06	-3.07E-06(***)	-2.33E-06(***)
GDP		0.000402(***)		0.000503(***)
LEGTRA	8.35E-05	6.14E-05	5.70E-05	4.88E-05
LAWENF	4.07E-06(***)	4.60E-06(***)	-1.60E-06	-1.05E-06
Weighted Statistics				
R-squared	0.433515	0.359045	0.575444	0.595775
Adjusted R-squared	0.419947	0.339739	0.525496	0.545246
F-statistic	31.95013	18.59769	11.52090	11.79093
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.300276	1.292123	1.764724	1.810408

Total panel (unbalanced) observations: 172
Method: GLS (Cross Section Weights)
White Heteroskedasticity-Consistent Standard Errors & Covariance

Table 6. Trade sale regression analysis

This table presents the results of the multiple linear regression model $y_{it} = \alpha_{it} + x_{it}{}' \beta_i + \varepsilon_{it}$, with i denoting country and t denoting year. The dependent variable is trade sale. The independent variables are (1) total market capitalisation (TOTMK), (2) interest rate (INT), (3) GDP growth (GDP), (4) legal tradition (LEGTRA), and (5) law enforcement (LAWENF). The regressors trade sale, and total market capitalisation have been normalised by dividing by real GDP. The table shows the coefficient, and the level of statistical significance in brackets. *, **, *** indicate statistical significance at the 10%, 5%, and 1% level respectively.

Dependent Variable: TRSALE

Variable	Model I	Model II	Model III	Model IV
C	0.000611	0.001987	0.000514	0.001168
TOTMK	0.000176(***)	0.000169(***)		
TOTMK_AUSTRIA			-0.000136	-0.000143
TOTMK_BELGIUM			0.000270(***)	0.000267(***)
TOTMK_DENMARK			-6.01E-06	-6.42E-06
TOTMK_FINLAND			0.000136(***)	0.000139(***)
TOTMK_FRANCE			0.000790(**)	0.000789(**)
TOTMK_GERMANY			0.000292(***)	0.000281(***)
TOTMK_IRELAND			-0.000108	-7.72E-05
TOTMK_ITALY			0.000302(***)	0.000295(***)
TOTMK_NETHERLANDS			0.000342(***)	0.000343(***)
TOTMK_NORWAY			0.000423(***)	0.000441(***)
TOTMK_PORTUGAL			0.000296(**)	0.000303(**)
TOTMK_SPAIN			6.80E-05	7.82E-05
TOTMK_SWEDEN			0.000469(***)	0.000473(***)
TOTMK_SWITZERLAND			3.79E-05(**)	3.47E-05(**)
TOTMK_UK			0.000467(***)	0.000457(***)
INT	-6.01E-06(***)	-0.001348(***)	-3.32E-06	-4.14E-06(*)
GDP		-7.73E-06(***)		-0.000633(***)
LEGTRA	0.000146	0.000171(*)	0.000127	0.000142
LAWENF	-2.47E-05(***)	-2.38E-05(***)	-2.18E-05(***)	-2.19E-05(***)
Weighted Statistics				
R-squared	0.289652	0.318707	0.448482	0.456201
Adjusted R-squared	0.272637	0.298186	0.383598	0.388226
F-statistic	17.02398	15.53087	6.912017	6.711323
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.254157	1.311049	1.963944	2.013093

Total panel (unbalanced) observations: 172
Method: GLS (Cross Section Weights)
White Heteroskedasticity-Consistent Standard Errors & Covariance

Table 7. Other means regression analysis
This table presents the results of the multiple linear regression model $y_{it} = \alpha_{it} + x_{it}'\beta_i + \varepsilon_{it}$, with i denoting country and t denoting year. The dependent variable is other means. The independent variables are (1) total market capitalisation (TOTMK), (2) interest rate (INT), (3) GDP growth (GDP), (4) legal tradition (LEGTRA), and (5) law enforcement (LAWENF). The regressors other means, and total market capitalisation have been normalised by dividing by real GDP. The table shows the coefficient, and the level of statistical significance in brackets. *, **, *** indicate statistical significance at the 10%, 5%, and 1% level respectively.

Dependent Variable: OTHER

Variable	Model I	Model II	Model III	Model IV
C	0.000560	0.001213	0.000529	0.000742
TOTMK	0.000132(***)	0.000128(***)		
TOTMK_AUSTRIA			-0.000161(**)	-0.000153(**)
TOTMK_BELGIUM			0.000180(***)	0.000182(***)
TOTMK_DENMARK			-3.48E-05(**)	-3.30E-05(**)
TOTMK_FINLAND			6.89E-05(***)	7.05E-05(***)
TOTMK_FRANCE			0.000279(***)	0.000282(***)
TOTMK_GERMANY			0.000311(***)	0.000310(***)
TOTMK_IRELAND			0.000163	0.000175
TOTMK_ITALY			6.24E-05	6.54E-05
TOTMK_NETHERLANDS			0.000293(***)	0.000294(***)
TOTMK_NORWAY			0.000119(***)	0.000128(***)
TOTMK_PORTUGAL			0.000267(***)	0.000274(***)
TOTMK_SPAIN			0.000137	0.000146
TOTMK_SWEDEN			7.46E-05(*)	7.68E-05(*)
TOTMK_SWITZERLAND			2.22E-06	1.72E-06
TOTMK_UK			0.000665(**)	0.000661(**)
INT	-9.93E-06(***)	-1.26E-05(***)	-1.06E-05(***)	-1.05E-05(***)
GDP		-0.000593(***)		-0.000218(*)
LEGTRA	4.30E-05	4.76E-05	-7.98E-05	-7.35E-05
LAWENF	-2.24E-05	-2.36E-05	-2.00E-05	-1.96E-05
Weighted Statistics				
R-squared	0.293264	0.319000	0.591600	0.592766
Adjusted R-squared	0.276732	0.298971	0.544777	0.543167
F-statistic	17.73936	15.92658	12.63484	11.95118
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Durbin-Watson stat	1.102486	1.075090	1.764458	1.778324

Total panel (unbalanced) observations: 176
Method: GLS (Cross Section Weights)
White Heteroskedasticity-Consistent Standard Errors & Covariance

Table 8. Write-off regression analysis
This table presents the results of the multiple linear regression model $y_{it} = \alpha_{it} + x_{it}{}' \beta_i + \varepsilon_{it}$, with i denoting country and t denoting year. The dependent variable is write-off. The independent variables are (1) total market capitalisation (TOTMK), (2) interest rate (INT), (3) GDP growth (GDP), (4) legal tradition (LEGTRA), and (5) law enforcement (LAWENF). The regressors write-off, and total market capitalisation have been normalised by dividing by real GDP. The table shows the coefficient, and the level of statistical significance in brackets. *, **, *** indicate statistical significance at the 10%, 5%, and 1% level respectively.

Dependent Variable: WROFF

Variable	Model I	Model II	Model III	Model IV
C	-6.57E-05	0.001257	8.57E-05	0.001630
TOTMK	5.76E-05(***)	6.66E-05(***)		
TOTMK_AUSTRIA			0.000101	0.000211(**)
TOTMK_BELGIUM			0.000250(***)	0.000272(***)
TOTMK_DENMARK			0.000246(*)	0.000288(**)
TOTMK_FINLAND			5.88E-05(***)	7.59E-05(***)
TOTMK_FRANCE			0.000133(***)	0.000146(***)
TOTMK_GERMANY			0.000362(**)	0.000364(***)
TOTMK_IRELAND			5.27E-05	0.000120(***)
TOTMK_ITALY			4.08E-05(**)	2.09E-05
TOTMK_NETHERLANDS			0.000157(**)	0.000174(***)
TOTMK_NORWAY			0.000459	0.000576(*)
TOTMK_PORTUGAL			6.55E-05(***)	7.56E-05(**)
TOTMK_SPAIN			1.34E-05	3.05E-05(**)
TOTMK_SWEDEN			9.25E-05(***)	0.000121(***)
TOTMK_SWITZERLAND			3.43E-05(*)	3.62E-05(**)
TOTMK_UK			0.000230	0.000213
INT	-7.18E-07	-1.22E-06	-1.69E-08	-8.98E-07
GDP		-0.001298(***)		-0.001419(***)
LEGTRA	3.29E-05	6.65E-05(***)	5.74E-06	4.74E-05(***)
LAWENF	5.51E-06(***)	5.83E-06(***)	-3.23E-06(**)	-8.17E-06(***)
Weighted Statistics				
R-squared	0.094947	0.181734	0.277626	0.400133
Adjusted R-squared	0.073776	0.157667	0.194806	0.327072
F-statistic	4.484800	7.551287	3.352157	5.476707
Prob(F-statistic)	0.001801	0.000002	0.000021	0.000000
Durbin-Watson stat	1.083308	1.003215	1.420729	1.460868

Total panel (unbalanced) observations: 176
Method: GLS (Cross Section Weights)
White Heteroskedasticity-Consistent Standard Errors & Covariance