

# **DETERMINANTS OF PRIVATE EQUITY FUNDRAISING IN WESTERN EUROPE\***

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**A B S T R A C T**

The aim of this paper is to identify the key factors that lie behind venture capital/private equity fundraising in countries where there is scarce and asymmetric information about final returns. The main contribution of this paper is to explain fundraising by means of variables directly related to the venture capital process rather than by macroeconomic ones. We use panel data techniques on data from 16 European countries during the nineties. In the light of the long period required for investing committed capital and the illiquid nature of investments until the fund is divested, the focus is placed on the investing capabilities of fund managers. We find that the amounts invested in the previous year have a positive and significant impact on fundraising. In this sense, the market would be regarding the ability of fund managers to invest the total amounts investors have previously committed.

**KEYWORDS:** Disbursements; Fundraising; Private Equity; Venture Capital.

## 1. INTRODUCTION

The term *venture capital* does not have quite the same meaning for European firms as it does for Americans. In the United States, it is linked to equity, or equity-related investments in start-ups, or in companies involved in high growth cycles. It was introduced in the 1940s as an alternative long-term option to allocating money in the official stock markets. Specialised investment vehicles, such as limited partnerships or Small Business Investment Companies (SBCIs), were devised to develop a professional approach to portfolio management. Since its introduction, hundreds of thousands of companies have benefited from this long-term financial facility, reducing the probability of an early failure due to a lack of liquidity during their start-up processes, and thus, accelerating their growth patterns.

Apart from a few exceptions, most venture capital investors started operating in Europe in the 1970s. Since the mid-1980s, however, the lack of an adequate environment has caused their withdrawal from early-stage investments. The bulk of their activity has been devoted to buy-outs and other later-stage investments. As a result, most investors feel more comfortable with a different label on their operations: Private Equity. European statistics, on the other hand, refer to private equity as a more general concept that includes any commitment to unquoted companies, at any stage, from seed investments to replacements, buy-outs and turn-around operations.

Despite such differences in concept, however, in both the United States and Western Europe, a similar approach is used with regard to the investment vehicles employed. Since the 1980s, limited partnerships and close-end funds have accounted for 75 to 80 percent of the total funds under management in most countries. These funds have a limited lifespan, generally from 8 to 12 years, and are managed by independent teams who charge an annual fee on committed capital and get a 20 to 25 percent reward on the capital gains generated when the money is paid back to the investors.

Considering the specific characteristics of these funds, the purpose of this paper is to demonstrate that investments and divestments are the key factors that explain the new funds raised into this field in a developing private equity market. The scope of our study covers 16 Western European countries, during the period 1991-1999. We use panel data to regress the independent variables selected. Other developed countries were excluded from the survey in order to test the importance of the above-mentioned variables in data taken from different economies that follow a similar economic pattern. Although some relevant differences still exist between the sizes and stages of development among the markets selected, all of the data used here has been homogenised, using the GDP figure of each nation.

Several papers that have dealt with venture capital fundraising have attempted to discover the main forces that lie behind such activities. Most of them have focussed on issues that are related to external factors, such as gross domestic product (GDP) growth, capital-gains taxes, initial public offerings (IPOs)<sup>1</sup>, market capitalisation, accounting procedures, legislation of pension funds, and so on. This paper focuses on a different approach by stressing the importance of topics that are more related to how this industry

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<sup>1</sup> Sometimes taking venture-backed IPOs into account.

works in countries where there is little information available on the final returns of such investments. The main aim of this paper, therefore, is to demonstrate the importance of such aspects as significant variables that explain the flow of money into the private equity industry. At the same time, it tries to answer the question raised by Gompers and Lerner (1998), on how the venture capitalists in such countries overcome their lack of reputation.

The paper is structured as follows. The following section surveys the different approaches to venture capital and private equity fundraising in the economic literature, identifying the main factors signalled by their different authors. Section 3 describes how money raised for private equity is managed. Our view on the matter is that there are certain aspects of the process that should be considered as relevant variables, with explanatory content, of the fundraising activities in a growing market. Section 4 discusses the structure of the model, explaining the variables included, the data, and the methodology. Section 5 includes the results obtained on the different specifications tested and summarises our main findings. The results are interpreted in the context of the characteristics and stage of development of the European private equity industry during the nineties. Section 6 concludes and proposes new developments for future research.

## **2. FACTORS THAT AFFECT THE FLOW OF VENTURE CAPITAL AND PRIVATE EQUITY**

It is not an easy task to analyse the factors that determine both the amount of capital available for investments in unquoted companies and the amounts allocated to such companies by professional investors. Furthermore, there are significant differences between the structures and stages of development of venture capital and private equity in different countries. The diversity of investment vehicles, sources of funds, portfolio management approaches, the sizes and stages of development of the investing companies and so on, are cited by Jeng and Wells (2000) as the main causes for such differences. As a result, fundraising and investment processes tend to follow separate patterns in different countries, thus limiting the possibility of finding relevant conclusions when it comes to identifying the key aspects that affect them. Furthermore, with the exception of the United States, relevant data has only been available in most other countries since the mid-eighties, and just on a yearly basis. On the other hand, many of the factors are not easy to measure. Proxy variables are often used to cope with this problem.

The list of factors that have been studied, in economic literature, are Initial Public Offerings (IPOs), returns to investors, capital gains taxation, regulation of pension funds, the growth of market capitalisation, returns on investments in quoted companies, the rigidity of the labour market and the reliability of accounting procedures.

Among these characteristics, IPOs have been mentioned as one of the most important factors that positively influence the raising of new venture capital funds (Black and Gilson, 1999; Berlin, 1998; Gompers and Lerner, 1998; Jeng and Wells, 2000). As Black and Gilson point out, 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. In fact, they found a significant relationship between the number of venture-backed IPOs and new capital commitments to venture capital funds in the following year. Berlin (1998) also found that new funds enter the venture capital market when the IPO market is hot.

Exiting through an IPO is good for all the agents who participate in the venture capital process. On the one hand, the entrepreneur may get additional financing through the issuance of new stock and, simultaneously, recover a great portion of the effective control of the firm. On the other hand, IPOs are one of the most profitable means of exit for venture capitalists. The volume of IPOs would then affect not only the supply of venture capital but its demand as well (Jeng and Wells, 2000).

A Venture Economics (1988) study found that a \$1 investment in a firm that went public provided an average cash-return of \$1.95 in excess of the initial investment, with an average holding period of 4.2 years. The next best alternative, divestment through a trade sale, yielded a cash-return of just 40 cents over a 3.7-year average holding period. In a study of the Canadian Venture Capital Association, Amit et al. (1998) found that IPOs are relatively profitable, compared with other forms of divesting. As investments are made in situations where informational asymmetries are important, exits would take place basically through sales to informed investors, and venture capitalists would only present good-quality ventures in public offerings.

A company's performance also has a positive effect on fundraising (Gompers and Lerner, 1998). For these authors the market value of equity held by venture capitalists in firms that go public is highly correlated with returns on venture funds. In this way, they show that increases in IPO market activity are followed by increases in fundraising, which is the same evidence that Black and Gilson (1999) found for performance and IPOs. Gompers and Lerner also say that the reputation of the venture capital firm<sup>2</sup> may influence positively the flow of new commitments when it raises a new fund. Older and larger venture capital firms are supposed to have more established reputations, so they may receive larger capital commitments than similar younger firms.

The impact of capital gains taxation has also been examined in the literature. Poterba (1989) found that a decrease in the capital gains tax rate might increase commitments to venture capital funds through an increase in the demand for venture capital<sup>3</sup>. This relationship is more reliable than the one based on the supply of venture capital. Gompers and Lerner (1998) argue that if changes in this tax rate affect the demand for venture funds, a capital gains tax decrease would increase the capital committed by both tax-exempt and tax-sensitive investors. They also found evidence of the link between capital gains tax rate and commitments through the demand side. If the effect was due to the supply side only capital committed by tax-sensitive investors would increase.

This relationship between the capital gains tax rate and new funds raised has not only been found for countries in which venture capital is well developed, but also in countries where the venture capital experience is much more limited. Aylward (1998) found that, in China, new venture funds raised in 1995 proved, for the fourth

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<sup>2</sup> Measured by age and capital under management.

<sup>3</sup> More people become entrepreneurs.

consecutive year, to follow a steeply rising investment trend, as investors continued to take advantage of business opportunities and significant tax incentives.

Another variable that may considerably affect commitments to venture funds is the level of pension funds in the economy, provided that they are allowed to invest in venture capital. As great sums of money are managed by pension funds, their involvement affects the supply of venture capital (Gompers and Lerner, 1998; Jeng and Wells, 2000). This variable is of great importance for certain countries, like the United States. When the “prudent man rule” was modified, new commitments to venture capital rose sharply. This is not the case in most European countries, where pension funds do not manage such large sums of money and/or do not have the habit of investing in unquoted companies.

There are other macroeconomic factors that may affect both the supply and the demand for venture capital. Gompers and Lerner (1998) argue that if an economy is growing, there may be more opportunities to start new firms, which will increase the demand for venture capital funds. More specifically, gross domestic product (GDP) growth, attractive returns in the stock market and greater research and development expenditures may increase the demand for venture capital. However, increases in interest rates may also lead to a decrease in the supply of venture capital, as investment in loans is an alternative asset class to venture capital and private equity. Jeng and Wells (2000) have also studied the macroeconomic variables of GDP growth and market capitalisation growth. They believe that these two variables affect both the demand and the supply of venture capital.

Aylward (1998) found some evidence of this in the case of developing countries as well. In Central and Eastern Europe, there was a surge in the capital committed to venture funds during 1994 and 1995, when the prospects for economic stability in the region improved.

Furthermore, many of the papers we surveyed included some *environmental* variables, such as the efficiency of bankruptcy procedures, market confidence in financial reporting standards and labour market rigidities. Jeng and Wells (2000) cited the efficiency of bankruptcy procedures, but it was not included in their empirical analysis because they encountered difficulties in finding good measures for it. Jeng and Wells (2000) also argued that if the market relies on information on start-up firms (with good accounting regulations), the venture capitalists will require less time to gather the information needed to monitor their investments. This will ultimately reduce the financing burden through a decrease in the cost of asymmetric information. This will influence both the demand and the supply of venture capital funds.

Labour market rigidities and differences in labour market regulation might well be a hindrance to venture capital activity. Jeng and Wells (2000) argue that the more rigid the labour market is, the more difficult it will be to an individual who has failed in his venture to find new employment. Such labour market rigidity will thus negatively affect venture capital activity, and the effect will be seen through the demand for venture capital. For Black and Gilson (1999), restrictions on lay-offs impose costs on start-up businesses and this could lower the birth rate of new companies. In Germany, for example, where there is greater protection against lay-offs, there is little venture capital

available, while in Britain and the United States, where labour markets are more flexible, there is greater venture capital activity.

Labour market rigidities, however, cannot be the only reason that explains why a country has so little venture capital available. Countries like Ireland and Israel, for instance, have restrictions that are comparable to the ones of West Germany, and yet they have relatively strong venture capital markets. Black and Gilson (1999) argue that one of the reasons that these markets are so strong is that they have access to the British and the United States stock markets respectively, in which they can exit their investments through IPOs.

Given the general benefits to the economy of venture capital activity (Barry, 1994; Fried and Hisrich, 1994), or more specifically, its impact on innovation (Kortum and Lerner, 1998) it is recommended to conduct further research on the key aspects that affect venture capital fundraising. In this sense, a limited flow of capital into the industry would limit the birth rate of new firms in a given country. As Gompers (1998) argues, however, too many funds raised may affect the pricing of transactions, and thus, the returns on investments (“too much money chasing too few deals”).

### **3. INSIGHT ON HOW PRIVATE EQUITY CAPITAL IS MANAGED**

Around 75 percent of new funds raised yearly in developed countries go to limited partnerships or close-end funds (Venture Economics, 1993-2000; EVCA, 1989-2000). Such funds are set up by experienced general partners, or independent management companies, who attract institutional, corporate and private investors.

Since money is placed in unquoted companies, the venture capital/private equity investment process requires 8 to 12 years to mature, from the initial investment to the liquidation of the fund. During the years of this process, investors are unable to exit the fund and receive the proceeds gradually from divested portfolio companies. The final return on their investment is only available to them when the last investment has been sold. Until such time, only the expected returns are available, based on real divestments and interim valuations of unquoted portfolio companies.

In mature venture capital markets, investors are attracted to the field by past performance. More precisely, interested investors try to find the best management team for their money, basing their decision on the track record accredited to them in previous funds. Such information, however, is only available in countries like the United States, where many management teams have closed their participation in a great number of funds.

In economies where private equity is still a young industry, past performance is obviously limited and/or unavailable at times. In such cases, divestments at cost are a proxy variable that anticipates good or bad returns. As has already been stated above, IPOs are usually correlated with good returns in individual investments. An increasing number of IPOs, therefore, is considered to be a sign that money is going back to the investors and there is an increase in the expected return on the average portfolio.

In such countries, furthermore, there are always new players every year, all trying to raise their first fund, in addition to new investors accessing the private equity market as limited partners. A short-term signal to new investors is the availability of enough investment opportunities. In order to understand how this situation arises, we must examine the private equity investment process<sup>4</sup>.

As a general rule, when investors join a new fund, they sign a commitment, but they are not required to disburse the money until a given investment is approved. The representatives of these investors form the investment committee. Each investment proposal is either approved or rejected by this committee. Once a given proposal has been approved, the fund managers request each of the investors included in the fund to supply his share of the investment capital required.

The fund managers draw an annual fee from the fund's resources, usually in the range of 2-3 percent of the capital committed (Gladstone, 1983; Sahlman, 1990). They also receive a reward<sup>5</sup> based on the amount of capital gains returned to the investors after management fees and other legal expenses have been deducted. The management fee is charged yearly based on the global commitment. However, it might well take up to three years to be able to invest a significant amount of the committed capital.

The management team first activates a deal flow, then starts screening investment proposals. On average, just 3 out of 10 cold contacts imply some further interest in the applicant company. The companies selected are then asked to provide a comprehensive business plan, including a description of the company, product, market and management team, as well as the required funding and a destination for it.

According to the focus of the fund, venture analysts then assess the interesting aspects of the proposal, the experience and confiability of the company managers, the size of the market and the uniqueness of the product/service. In the event of all of these criteria being met, the two parties then begin to negotiate the price and the structure of the deal. If an agreement is reached, the operation is then presented to the investment committee for approval. Once it has been approved, the fund managers and the representatives of the investing company sign a letter of intend, outlining all of the points agreed on.

The next step, which usually requires a minimum of two weeks, is referred to as a time of *due diligence*, when the fund managers conduct a detailed research on the company's assets, liabilities, contracts, accounting procedures and so on, before the investment is disbursed.

In the final step, shareholders from the investee company sign the issuance, or sale, of the shares and the agreements to protect the rights of the new shareholders, who usually hold a minority stake.

The entire process rarely takes less than 4 weeks to complete and can sometimes take up to 6 months. The average duration is between 12 and 16 weeks (Martí, 1997-

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<sup>4</sup> Among others, Gladstone (1988), Sahlman (1990) and Gompers and Lerner (1999) offer complementary approaches on this issue.

<sup>5</sup> This is known as *carried interest* and amounts to between 20 and 25 percent of net capital gains to investors, once the original amounts committed have been capitalised at a minimum rate, known as a *hurdle rate*.



2000). This is quite different from managing a mutual fund, in which case, with a simple phone call a manager could immediately allocate important sums of money to financial instruments quoted in official markets.

Furthermore, it must be remembered that several venture investors might well be analysing the same business plan and negotiating with the same entrepreneurs. The implication of such a situation is that a given management team could be involved in several proposals at the same time, and end up without having any investment disbursed at all. Considering the fact that the investors are charged a yearly management fee based on their global commitment, it would be extremely difficult for the management team to explain why they were not able to close a single deal.

Once the investments have been disbursed, fund managers then join the boards of the investee companies in order to add value to them and keep a close watch on their evolution. They provide valuable advice and add credibility in an effort to increase the probability of success.

Considering the fund's portfolio as a whole, it is well known that lemons show up much earlier than pearls do, and it therefore does not take the investors very long to realise which of the portfolio's companies are failing. The success stories take a longer time to materialise. Some companies might stick to what the business plan had originally anticipated, but might finally fail to meet expectations at the time of divestment. As a result, it could well take between 8 and 10 years to be able to guess which the real returns for the investors in a limited partnership or close-end fund will finally be.

Since all investments are illiquid, realising the stakes held in private equity portfolio companies is somewhat different to selling shares from a mutual fund's portfolio. While mutual funds may sell their portfolios in official markets, private equity investors must divest their shares in each company individually.

The available exit ways are IPO, trade sale to a third party, sale to the owners or managers and liquidation. The type of exit chosen depends on the evolution and the characteristics of the portfolio company and, of course, the constraints imposed by the environment. In the United States, the availability of a remarkable domestic market, plus the existence of the NASDAQ, is the key to the popularity of IPOs as the most common exit way (Venture Economics, 2000). Such conditions, together with fiscal transparency for private equity investors and the absence of administrative barriers for new entrepreneurs, explain the different degrees of development between the United States venture capital field and those of most European countries (Martí, 1997-2000). Trade sales are a good alternative, especially in the case of strategic buyers, and a managers/owners buy-back is only seen in the case of companies that do not meet the expectations detailed in the original business plan.

Since the proceeds obtained from divestments are given back to the fund investors and the fund itself will disappear within 8 or 10 years, private equity management teams are forced to raise new capital regularly. Taking into account the investment process described above, a given fund is fully invested<sup>6</sup> in about 3 years. From that moment

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<sup>6</sup> Provided a small percentage is reserved to face management fees and other legal expenses till divestments start.

onwards, the management team will not be able to participate in new deals unless a new fund is raised with fresh money ready to be invested. Activities in the fully invested fund will consist of adding value and, in some cases, participating in a second or third round of financing portfolio companies. The aim of such a process is to seek an exit at a rewarding return as soon as both the company and the market are ready for divestment.

To sum up, therefore, in order to cover the full range of private equity activities, from investing to divesting, professional fund managers must raise new funds every 2 to 3 years.

#### **4. DATA AND METHODOLOGY**

This section concentrates on the key aspects that determine the interest of investors in new funds in European countries. The difference between this paper and previous ones that have dealt with fundraising is its focus on data related to the private equity investment cycle, as an alternative to the explanatory power of macroeconomic or environmental variables.

The aspects to be examined are the influence of both investments and divestments on the decision to join a new private equity fund. As stated above, divestments through IPOs have proven to be a variable that is positively related to new funds raised. Since only the best companies will be accepted by the stock markets, IPOs signal liquidity plus good performance. Nevertheless, the lack of developed stock markets for growth companies in Europe limits the relative importance of venture-backed IPOs. In fact, trade sales are the most common way of exiting in Europe as a whole<sup>7</sup> (EVCA, 1989-2000). Under such an environment, the flow of money divested is the only signal of the anticipated return at the closing of the fund's life.

Since it may take as many as 5 years for a fund to start divesting its shares in portfolio companies, an estimated track record is not available for most investors in countries where the private equity market is still developing. But the managers must start new fundraising processes before they can show a track record on liquidated funds.

Another proxy variable for assessing the quality of the management team is the amount invested in the on-going funds. Closed deals imply good access to a sufficient deal flow and a demonstration of negotiating capabilities when competing with other market players. It must be remembered that, as fund managers charge an annual fee on the fund's total resources, investors would not be happy if the amounts finally invested are not sufficient to justify the fees charged on committed capital.

The models proposed here are aimed at explaining the fundraising pace in European countries in the nineties, on the basis of both investments and divestments. The study is based on panel data gathered from the European Union member countries, excluding Luxembourg, plus Norway and Switzerland, during the period 1991-1999. The length of the period was limited by the availability of relevant data, as EVCA studies that were done prior to 1991 did not offer a breakdown of divestments.

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<sup>7</sup> In fact, even the amount of written-off investments surpassed the amount divested through IPOs, valued at cost, until 1993.

The independent variables include the total amounts invested in and divested from private equity operations, as well as the amounts divested through IPOs and write-offs<sup>8</sup>, all of which are valued at cost. In addition to those industry-related variables, a further macroeconomic variable, GDP growth, is also included. Data on fundraising, investments and divestments were taken from 1989 to 2000 EVCA Yearbooks for all countries, except in the case of Spain, where the source was the database maintained by José Martí from the *Universidad Complutense de Madrid*<sup>9</sup>. All divestments were valued at cost. The series of GDP data of each country was gathered directly, in local currency, from each official statistics institution.

The information available included data from all countries for the full period 1991-1999, except in the case of countries like Austria, Denmark, Germany, Greece and Switzerland. The lack of certain values implied the exclusion of the period 1991-1994 in the case of Austria, 1993 in the case of Denmark, 1991-1992 in the case of Germany, 1991-1994 in the case of Greece and 1995 in the case of Switzerland.

In order to make data more homogeneous, all variables related to the private equity industry, expressed in local currency, were normalised by the observed GDP figure of the year in local currency as well. This adjustment seems to be useful and needed for at least two reasons. First, since countries differ in economic levels and each one has a different economic growth, the well-known problem of heteroskedasticity may arise, that is, the greater the economic level, the higher the observed variability. So, normalising data by GDP allows us to cope with this problem. Second, all variables are originally expressed in nominal terms, so an observed increase over time in a variable could exclusively be due to an increase in price levels. Therefore, different inflation rates among countries could bias the estimated parameters. Normalising variables by GDP imposes a kind of deflation, since GDP also incorporates the effect of inflation in each country. This is an alternative procedure that seems to be more advantageous than the one used in Jeng and Wells (2000). In this paper, the authors divide each observation with the mean value of GDP over time.

Figure 1 describes how new funds raised vary among countries during the period 1987-1999, highlighting the difference in the stage of development of the private equity market in the United Kingdom. We can observe that almost every country shows an upward tendency on this variable. The better knowledge of the market on the ability of fund managers could be causing this pattern. This increasing trend observed on new funds raised in most of the countries recommended the introduction of a further variable, the variable Trend in tables 2 and 3, to identify increases in fundraising activities in real terms.

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<sup>8</sup> The introduction in the same regression of divestments through IPOs and write-offs along with total amounts divested is not supposed to introduce collinearity between regressors as none of them account for more than thirty percent of total divestments.

<sup>9</sup> He has been managing the Spanish Private Equity Survey, on behalf of the Spanish Private Equity Association (ASCRI) since 1985 and publishes a yearly survey. He has also been providing Spanish data to the EVCA Yearbook since 1991.

## FIGURE 1

### NEW FUNDS RAISED IN 16 EUROPEAN COUNTRIES DURING 1987-1999 (Normalised by the GDP figure)

1 Austria	3 Denmark	5 France	7 Greece	9 Ireland	11 Norway	13 Spain	15 Switzerland
2 Belgium	4 Finland	6 Germany	8 Holland	10 Italy	12 Portugal	14 Sweden	16 United Kingdom

Table 1 shows the differences among countries, based on the averages of funds raised in relation to GDP, as well as the standard deviations and variations, from minimum to maximum values of funds raised, compared to GDP. There is a huge difference between the minimum average of new funds raised, normalised by GDP, in Austria (0.025) and the maximum accounted for in the United Kingdom (0.41). Nevertheless, averages in most countries are not far from the median of the value for the entire group, which stood at 0.07 percent.

**TABLE 1**

**NEW FUNDS RAISED IN THE 16 EUROPEAN COUNTRIES**  
(Normalised by GDP)

<b>Country</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Minimum</b>	<b>Maximum</b>
Austria	0.025%	0.033%	0.001%	0.093%
Belgium	0.085%	0.085%	0.022%	0.331%
Denmark	0.030%	0.029%	0.001%	0.093%
Finland	0.110%	0.159%	0.004%	0.516%
France	0.128%	0.085%	0.065%	0.318%
Germany	0.060%	0.064%	0.011%	0.234%
Greece	0.037%	0.025%	0.013%	0.069%
Holland	0.146%	0.133%	0.037%	0.432%
Ireland	0.135%	0.122%	0.024%	0.402%
Italy	0.054%	0.042%	0.018%	0.160%
Norway	0.070%	0.089%	0.000%	0.337%
Portugal	0.072%	0.063%	0.008%	0.219%
Spain	0.054%	0.036%	0.012%	0.132%
Sweden	0.175%	0.175%	0.015%	0.471%
Switzerland	0.054%	0.063%	0.011%	0.247%
United Kingdom	0.405%	0.274%	0.151%	1.052%

Concentrating now on the impact of investments on fundraising activities, Figure 2 highlights the positive relationship between new funds raised in a given year, for each of the 16 selected countries<sup>10</sup>, and private equity investments lagged one period. The reason why investments were lagged one period is consistent with the moment when the information about new funds raised, investments and divestments is disclosed, which is June of the following year.

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<sup>10</sup> It should be noted that the anomalous observation on the right hand side of each chart refers to the United Kingdom.

**FIGURE 2**  
NEW FUNDS RAISED RELATED TO INVESTMENTS LAGGED ONE PERIOD  
(Normalised by the GDP figure in local currency for each country)

The panel data methodology was employed, as data on cross-sectional time series was available. In this context, the use of the panel data methodology offers several advantages. The more immediate one is that it allows a more efficient handling of data than individual cross-section or time series analyses when we have panels of data. Nevertheless, the main advantage is that it allows controlling for the effects of variables that specifically affect the dependent variable of each country but are unobservable (the so-called individual heterogeneity). There are relevant factors like, for example, entrepreneurship or cultural, sociological, environmental ones that are different for each country (but constant in time) and can be causing a different effect on the dependent variable. The problem is that these variables are very difficult to measure and the omission of these variables leads to bias in the resulting estimates. The data panel methodology allows controlling for this individual heterogeneity. For a more detailed study of issues related to panel data, see Hsiao (1986) and Arellano and Bover (1990).

The panel data regression is based on the following model:

$$i=1, 2, \dots, N ; t=1, 2, \dots, T$$

with  $i$  denoting individuals (the cross section dimension) and  $t$  denoting time (the time series dimension). We denote  $y_{it}$  as the  $it$ th observation on  $K$  explanatory variables. The random disturbance is modelled in terms of a one-way error component model, i.e.,

where  $\alpha_i$  denotes the unobservable individual specific effect and  $\epsilon_{it}$  denotes the underlying disturbance, which can be thought of as a zero-mean white noise process.

Some papers have discussed whether the individual effects are treated as fixed or random variables. However, this is not an important distinction because we can always treat the individual effects as random variables without loss of generality (Arellano and Bover, 1990). What is really important it is to determine whether these individual effects are correlated with the observed variables  $x_{it}$  or not. To test for the existence of this correlation we used the Hausman test (1978). If the Hausman test does not reject the null hypothesis that the individual effects are not correlated with the explanatory variables, the most suitable estimation would then be the random-effects model. As in all the regressions we ran, the Hausman test did not reject the null hypothesis, we treated the specific effects as being random and applied the Balestra Nerlove (1966) estimator, which is the most efficient one in this case.

## 5. RESULTS AND FINDINGS ON THE FUNDRAISING PROCESS

The first model regresses new funds raised against total amounts invested and divested, plus the volume of venture-backed IPOs during the same year. This latter variable is also included, as it has been in other papers related to fundraising activities. As shown in Table 2, investments was the only significant variable. As it was expected,

its coefficient is positive, which means that high levels of investments will lead to more fundraising. Although it is non-significant, it should be noted that the negative coefficient of divestments is striking. Nevertheless, it could be explained by the negative performance in a substantial number of divestments<sup>11</sup>. As expected, divestments through IPOs did not have a significant impact on fundraising activities in the group of countries analysed.

**TABLE 2**  
SUMMARY OF RESULTS (Random effects)

Independent Variables	Dependent variable: New funds raised					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
(1) INVit	1.001* (10.17)	-	-	-	-	-
(2) DIVit	-0.003 (-0.29)	-	-	-	-	-
(3) DIVIPOit	0.644 (0.88)	-	-	-	-	-
(4) INVit-1	-	1.689* (10.06)	1.854* (10.71)	1.856* (10.62)	1.704* (9.89)	1.702* (9.79)
(5) DIVit-1	-	-0.020*** (-1.90)	-0.024** (-2.35)	-0.024** (-2.32)	-0.023** (-2.32)	-0.023** (-2.30)
(6) DIVIPOit-1	-	-0.042 (-0.04)	0.267 (0.31)	0.255 (0.30)	-0.125 (-0.15)	-0.128 (-0.15)
(7) DIVLIQit-1	-	-	-4.295* (-2.78)	-4.308* (-2.76)	-2.385 (-1.50)	-2.372 (-1.47)
(8) ΔGDPit	-	-	-	-6.054E-4 (-0.20)	-	-9.98E-5 (-0.03)
(9) Trend	-	-	-	-	1.231E-4* (3.35)	1.235E-4* (3.34)
cons	2.01E-4*** (1.81)	2.76E-5 (0.19)	1.323E-4 (0.97)	1.666E-4 (0.75)	-9.955E-4* (-2.73)	-9.932E-4** (-2.41)
R-squared	0.605	0.632	0.656	0.656	0.685	0.685
Hausman	5.98	7.12	3.69	3.35	3.31	2.89
Specification test [p-values]	[0.11]	[0.07]	[0.45]	[0.65]	[0.65]	[0.82]

GLS regression of 16 countries of the model  $Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \beta_8 X_{8it} + \beta_9 X_{9it} + \epsilon_{it}$ , with  $i$  denoting country and  $t$  denoting year. The dependent variable is new funds raised. The independent variables are (1) Total amount invested (2) Total amount divested (3) Total amount divested through IPOs (4), (5) and (6) are the same as (1), (2) and (3) respectively, lagged one period (7) Total amount divested through write-offs lagged one period (8) Growth in GDP from "t-1" to "t" (9) Deterministic time trend. All regressors except T have been normalised by variable  $GDP_{it}$ . t-statistics in parenthesis.

\* = significant at 1%, \*\* = significant at 5%, \*\*\* = significant at 10%

<sup>11</sup> As already stated, on taking into account the amount divested, until 1993 write-offs out-paced IPOs in Europe as a whole, being the second exit mechanism. This situation lasted until 1997 when the number of divestments was computed.



Since aggregated information about funds raised, investments and divestments is only available in June of the following year, all specifications from the second onwards were lagged by one year. The coefficient on investments rose to 1.69, being significant at the 1 percent level, while divestments repeated a larger negative coefficient, being significant only at the 10 percent level.

In order to explain the negative weighting of divestments, a new variable was included: the amount of investments written-off lagged one year. As a result, investments, divestments and write-offs showed significant coefficients. The coefficient on investments was again positive. As expected, the estimated coefficient for write-offs was negative, which helps to explain the negative value observed in the case of total divestments.

As has been done in other papers, a further specification included GDP growth. Table 2 shows limited changes in both coefficients and R-squared. One relevant result, in our model, is that GDP growth is not statistically significant. This is contrary to the arguments of Gompers and Lerner (1998) who find that increases in the real GDP growth in the previous year<sup>12</sup> lead to greater commitments to venture funds. It is consistent, however, with the arguments of Jeng and Wells (2000) who find that GDP growth is not statistically significant.

The fifth model eliminated this latter variable, as it was not significant, and included a deterministic time trend. The results show that coefficients estimated are slightly lower, but with the same sign, than those in the fourth specification, the coefficient on Trend being significant. Although the amounts written-off are now not significant, they nevertheless have the same sign as before.

The last specification included both Trend and GDP variables, with irrelevant changes in the coefficients regressed and in their t-statistics.

Therefore, the amounts invested in the previous year showed a positive effect on new funds raised, with a coefficient in the region of 1.69 to 1.86 in all of the proposed specifications, all significant at the 1 percent level.

Investors in European markets tend to assess private equity as an alternative asset class, depending on the ability of management teams to find suitable investment proposals. The explanation of this statement lies in the characteristics of the private equity investment process and its vehicles. Firstly, there is a need to have access to a sufficient deal flow, so that each investment proposal must be screened before the negotiation starts, thus competing with other investors. Finally, when an agreement is reached between both parties, a detailed due diligence process is developed before the deal is closed and money is then disbursed. As a consequence, investing is a time-consuming task that is only rewarded when a minimum number of deals are closed within a year.

The lack of a sufficient number of investment proposals may lead to a situation in which too much money is chasing too few deals (Gompers, 1998). Under this scenario,

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<sup>12</sup> We also ran the fourth regression using GDP growth during the previous year instead of the current year, although this new variable was not statistically significant.

prices would rise since the deals are closed after auction-like negotiations. As a result, many private equity investors would withdraw from this process, thus reducing their expectations of meeting the objective of the investments committed by the end of the year. Those who are behind in their investment objectives would be willing to offer higher prices in order to close a deal, at the cost of lowering long term expected returns to the investors. When this is not the case, investors would be unhappy to disburse money just to cover management fees, which are calculated on the total amount of capital they have committed to the fund. Under such conditions, it is unlikely that they would consider participating in a new fund.

We can therefore conclude that, in a country where information about past returns is scarce and/or unreliable, management teams who demonstrate fluent investment activity can be expected to experience less trouble in seeking new funds in the near future.

It should be noted that the deal flow in a given country largely depends on macroeconomic and environmental variables. Some of these, like economic growth, interest rates, labour market rigidities, accounting procedures and taxes on capital gains, have already been considered in previous papers (Poterba, 1989; Gompers and Lerner, 1998; Jeng and Wells, 2000). Others, like unemployment rates and level of deregulation in the economy, should also be considered.

The second variable to be described is the deterministic time trend, which also has a strongly significant positive coefficient in the specifications in which it was included. This variable reflects the growing trend in fundraising over time.

The most striking finding in this study is the negative coefficient on total amounts divested in all of the specifications, ranging from  $-0.003$  to  $-0.02427$ , which is significant at a level of 5 percent in specifications 3 to 6. Since exiting is crucial to the private equity investment process, a positive value was expected. There are two reasons, however, that could explain such a negative value. First, data gathered in each yearly survey of EVCA refers to the total amounts divested at cost, instead of the effective amount obtained. An increase in the amount divested includes trade sales, which is the main exit route in Europe, as well as IPOs, owner buy-backs, and written-off investments, all valued at cost.

Figure 3 summarises the weighting of different exit ways in Europe, considered as a whole. It is important to remark that trade sales were the main exit route, while IPOs were the second, but only in the period 1993-1996. In 1991 and 1992, however, the amounts written-off even surpassed the volume divested through IPOs, all valued at cost. When the number of divestments are taken into account, write-offs stand ahead of IPOs until 1997 (Figure 4).

The high percentage of written-off investments in Europe, in the early nineties, was due to the closing of the first investment cycle of many management teams in most countries. As already stated above, this period lasts for about 10 years and it is quite common for management teams to suffer from the so-called “experience curve” in their first fund experience.

The variety of tasks to be developed when managing a private equity fund requires a set of professional abilities<sup>13</sup> that take some time to acquire. In addition to those individual characteristics, success largely depends on the economic environment in which the investment activity is developed. Even experienced managers coming from other countries may fail in their initial fund when they face the constraints of the host country. As time goes by, the number of investment managers with relevant experience grows, reducing the failure rate. The lack of historical information<sup>14</sup> in Europe does not help to prove this hypothesis. Nevertheless, Figures 3 and 4 show a decreasing weighting of written-off investments in the last decade of the century.

In the case of Spain, where there is more information available, the starting point for most independent management teams was the period 1986-1988 (Martí, 1997-2000). This period coincided with the entry of Spain to the European Union. As a result, those managers had to compete with foreign industrial and financial investors who were willing to pay high prices for Spanish companies in order to get a strategic position. This situation affected the returns on their first funds quite negatively.

**FIGURE 3**  
**RELATIVE IMPORTANCE OF EXIT WAYS IN EUROPE**  
(% of amount divested)

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<sup>13</sup> Cold contacts, screening, negotiating, adding value and selling.

<sup>14</sup> Data on divestments at cost in Europe has been made available since 1986, while the breakdown of different exit ways has only been available since 1991.

## FIGURE 4

### RELATIVE IMPORTANCE OF EXIT WAYS IN EUROPE (% of number of divestments)

The amount of investments written-off at cost was included as an independent variable in specifications 3 to 6 in order to explain the negative impact of divestments on the dependent variable. The regressed coefficients ranged from  $-4.3$  to  $-2.4$ , with significance in all specifications that excluded the deterministic time trend. The observed negative values met the expectations. This value is consistent with the intuitive relationship between a bad performance signal and the attraction of new funds into the industry.

The amounts divested through IPOs did not appear to have a statistically significant impact under any of the assumed specifications. In some of them, the impact was positive, while in others the effect on fundraising was supposedly negative.

The explanation to this finding relies, again, on the nature of the available data. The series of data refer to the amounts divested through IPOs plus the sale of quoted equity, all valued at cost. Those coefficients would have been positive with market valuations.

Regardless of this issue, however, Figure 4 describes the limited importance of IPOs as a means of exit in European countries. The weighting of management and owner's buy-back of the equity stakes held by private equity funds in portfolio companies, is a clear indication of the difficulties that fund managers face when it comes to exiting (Marti, 1999). Such difficulties are in the root of the withdrawal of European investors from early-stage investments, since longer holding periods are required, as there are no equity markets for growing companies. The development of efficient equity markets for growth companies is crucial to the consolidation of the venture capital and private equity industry. The new markets set up in several countries since the mid-nineties are a positive milestone, but, so far, none of them is playing the role that NASDAQ played, in the early days, in the United States.

As a general rule, the limited number of IPOs observed was generally associated with large and mature companies who were large enough to attract the interest of investors at official stock exchanges. The only exception to this rule were issues from some technology start-ups at the German *Neur Markt*, or the French *Nouveau Marché*, in the period from 1999 to April 2000 when the NASDAQ index started to decline.

In order to check the robustness of the results, we excluded all data from the United Kingdom so as to control for possible biases in our estimations. The stage of development of the private equity industry in this country is far away from the other countries (as we saw in Figure 1), as it is the availability of data about returns.

We estimated the same six models as in Table 2. The Hausman test accepted the null hypothesis of no correlation between the individual effects and the explanatory variables in all the models except 3 and 4. Therefore, we estimated models 3 and 4 using the within groups estimator, which is the most efficient one in this case. The rest of the models were estimated using the Balestra Nerlove estimator. The results are shown in Table 3.

The results support even more our view. The coefficient on investments lagged one period is statistically significant in all the specifications, and is larger than before. This reinforces the idea that in countries where information about past returns is scarce, investments is the most relevant variable when management teams are seeking to raise new funds. There are no qualitative changes in all the other variables compared with the results in table 2, which included all the countries. All the variables that are significant have the same sign than in Table 2.

**TABLE 3**

**SUMMARY OF RESULTS**  
(Excluding data from the United Kingdom)

Independent Variables	Dependent variable: New funds raised					
	Model 1 (random effects)	Model 2 (random effects)	Model 3 (fixed effects)	Model 4 (fixed effects)	Model 5 (random effects)	Model 6 (random effects)
(1) INVit	0.895* (8.42)	-	-	-	-	-
(2) DIVit	-0.006 (-0.66)	-	-	-	-	-
(3) DIVIPOit	1.394*** (1.646)	-	-	-	-	-
(4) INVit-1	-	2.124* (9.50)	2.440* (9.35)	2.457* (9.37)	2.008* (9.03)	2.028* (9.01)
(5) DIVit-1	-	-0.027* (-3.12)	-0.028* (-3.19)	-0.028* (-3.20)	-0.023* (-2.86)	-0.023* (-2.84)
(6) DIVIPOit-1	-	0.235 (0.25)	0.113 (0.11)	0.099 (0.10)	-0.614 (-0.69)	-0.663 (-0.74)
(7) DIVLIQit-1	-	-	-1.351 (-0.64)	-1.594 (-0.74)	-1.947 (-1.06)	-2.064 (-1.11)
(8) ΔGDPit	-	-	-	-2.508E-3 (-0.78)	-	-1.582E-3 (-0.62)
(9) Trend	-	-	-	-	1.11E-4* (3.83)	1.106E-4* (3.81)
cons	2.235E-4** (2.19)	-2.149E-4 (-1.33)	-3.556E-4*** (-1.89)	-2.123E-4 (-0.81)	-1.072E-3* (-3.61)	-9.848E-4* (-2.93)
R-squared	0.479	0.529	0.555	0.558	0.604	0.605
Hausman	5.49	7.13	34.86	11.06	4.92	4.14
Specification test [p-values]	[0.13]	[0.07]	[0.00]	[0.05]	[0.42]	[0.65]

GLS regression of 15 countries of the model , with  $i$  denoting country and  $t$  denoting year. The dependent variable is new funds raised. The independent variables are (1) Total amount invested (2) Total amount divested (3) Total amount divested through IPOs (4), (5) and (6) are the same as (1), (2) and (3) respectively, lagged one period (7) Total amount divested through write-offs lagged one period (8) Growth in GDP from "t-1" to "t" (9) Deterministic time trend. All regressors except T have been normalised by variable  $GDP_{it}$ . t-statistics in parenthesis.  
\* = significant at 1%, \*\* = significant at 5%, \*\*\* = significant at 10%

**6. CONCLUSIONS**

The confidential nature of individual investments is a considerable constraint on research into topics related to venture capital and private equity. Very limited information about the activities of fund managers is available to private sources, and then only once a year. The available information generally refers to individual

investments and divestments, most of which are valued at cost, and are not available to the general public. Data on returns are not always available either. In some cases, the length of the investment cycle limits the number of funds fully divested, and interim market valuations are not possible, since portfolios group unquoted companies. In other cases, data is either not disclosed by fund managers, or the information provided is not verified by independent third parties.

As a result, authors of papers that have dealt with venture capital activity, even in countries like the United States, have had great difficulty in trying to find relevant variables related to the topic for which the reliable data was available. They generally focused on variables like GDP growth, capital gains tax, level of IPOs, labour market rigidities, level of pension funds or market capitalisation growth. Models were developed to try and find the key factors that lie behind supply and demand for venture capital, but without taking into account variables that are more related to the venture capital process.

This paper focuses on the ability of fund managers in a given country to raise more money when they have a proven and satisfactory flow of investments in their record. The very nature of the business, which requires a three-year period to invest all of a fund's committed capital, plus a 10-to-12-year period to fully divest the stakes held in portfolio companies, forces investors in countries without reliable exit references to pay more attention to prior objective data, i.e., the investing capabilities of fund managers.

This tendency is observed in European countries, where venture capital and private equity is still developing, and information on returns is asymmetric and scarce. We have found evidence that investments are very important in trying to explain the flow of new funds raised. In all specifications, investments had a statistically significant positive coefficient. In other words, the higher the amounts invested the easier fund managers raise new funds. This indicates that the market considers the ability of fund managers to wisely invest the total amounts that the investors have committed. This effect is even more pronounced when data from the United Kingdom is excluded and when the investments made during the previous year are taken into account. As was mentioned earlier, this is consistent with the moment when the information is made available to the market, i.e., in June of the following year.

This finding is also supported by recent data published on investments. The surge of investments in Information Technologies and Communications since 1998 is the main reason for the immense amounts raised by fund managers in 1999 and 2000. More research should be conducted in the future about this topic.

In addition to the amounts invested, divestments valued at cost, amounts divested through IPOs and write-offs, also valued at cost, plus GDP growth, are included as well. Since information is gathered by EVCA once a year, most specifications lagged all independent variables, except GDP growth, by one year. In order to reduce heterogeneity among selected countries, all data was normalised by the GDP figure of each year.

The coefficient on divestments was negative and significant in almost all of the specifications. This result is surprising, as we generally expect divestments to be a good signal for the market. This negative coefficient is explained by the coefficient on

amounts divested through write-offs, which is also negative. We must remember that the data refers to amounts divested at cost, and that there was a high percentage of written-off divestments in Europe at the beginning of the period analysed.

In summary, this paper found that variables related to the venture capital market, like investments and divestments, are statistically related to new funds raised, which is the major difference between previous studies and ours. This finding, however, is compatible with conclusions found in other papers, since those models rely on variables that are related to the deal flow. Nevertheless, fostering entrepreneurship not only requires a good economic climate, low capital gains taxation, flexible labour markets and so on, but also other variables that are not specifically included in those models.

One important conclusion for policy-makers in Europe, is that, in order to extend venture capital activity, actions should be aimed at improving the deal flow. Another conclusion that should interest venture capital/private equity managers, at the individual level, is that fundraising is not only highly related to past performance, which is not always available, but also to the ability of fund managers to access and close a sufficient number of deals.

More research should be conducted on this issue, including data from IPOs with market valuations. Another way of looking at the topic would probably be by analysing this model in a given country, through a sample of private equity management teams.



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