
How do spanish private equity managers signal their quality?*

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Abstract: The aim of this paper is to analyse the relationship between investors and private equity managers in maturing markets. Due to the lack of information regarding track record in these markets, private equity managers should signal their quality by other means in order to raise new funds from investors. The Agency and Signalling Theories is set as theoretical framework to infer the relevant determinants in this context. Two groups of variables that might signal quality are proposed, namely, variables related to the investment/divestment behaviour and to organisational characteristics of the operator. The empirical analysis is based on the activity of almost all private equity investors operating in Spain during the period 1991-2001. Results show that the lagged volume of investments acts as a main indicator of the ability to manage larger amounts of capital. The exogenous characteristics of highest importance are the belonging to the national private equity association and the size of the funds under management.

Key words: Agency Theory, fundraising, management quality, private equity, Signalling Theory.

JEL Classification: G24, G34.

1. INTRODUCTION

Venture capital could be defined as a professionalised financial activity by means of which capital, in the form of equity or quasi-equity, is provided, on a temporary, minority basis, to back

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small and medium-sized innovative firms with high potential for development. In addition to money, venture capitalists also add value to the portfolio firm in the form of assistance to the management and credibility.

Apart from a few exceptions, most venture capitalists started in Europe in the 1970s. Since the mid-1980s, however, the poor returns obtained did not compensate for the high risk assumed in early-stage investments. Together with the fact that the time required to divest is greater in the case of early-stage than later-stage investments, this caused a withdrawal from early-stage investments. The bulk of this activity has been devoted since then to buy-outs and other later-stage investments (EVCA, 2002). As a result, the term venture capital was questioned as the right one to use for this activity, leading to Europe using a more generic term than venture capital: private equity.

Nevertheless, even though the investment focus has changed notably, the venture capital cycle perfectly resembles that of private equity. Both venture capitalists and private equity operators must raise capital from a wide range of investors, thus acting as specialised financial intermediaries between investors and the firms being financed (Chan, 1983).

The pool of money raised is then committed to portfolio firms, with the private equity organisation (henceforth, PEO) providing non-financial assistance in order to add value. As a result, they are able to reduce the degree of information asymmetry between investors and investee firms (Admati and Pfleiderer, 1994; Amit et al., 1998; Hellmann and Puri, 2002; Repullo and Suarez, 2004, among others). Gompers and Lerner (2001a) point out that the main cause of a reduction in information asymmetry is the studies carried out by PEOs prior to the funding of firms, and their active participation in the board. After a 3-5 year holding period, the venture capital/private equity organisations divest the stakes held in portfolio companies, returning the proceeds obtained to the original investors and, thus, bringing to an end a long term relationship.

Venture capital/private equity organisations are required to start a fundraising process regularly in order to continuously perform the different stages of the venture capital/private equity cycle. A question arises as to what are the factors that determine which operator will succeed in attracting the investor's interest in the creation of a new fund. It is expected that providers of funds will decide which intermediaries get the funding on the basis of reputation. In a fully developed market, reputation should be linked to track record (Rosenstein et al., 1990). In countries where the private equity market is still developing, however, such information is not yet available - owing to the limited number of PEOs who have completed the investment and divestment of funds. As a result, investors should infer the quality of PEOs on the basis of other criteria.

The principal aim of the present paper is to determine the quality-building mechanisms used by PEOs in countries where reliable information on past returns is limited or not available. In particular, the hypotheses proposed in this paper are tested in the Spanish market, which is still in the process of attaining maturity. The PEO's quality is proxied by its ability to attract new funds from investors.

The paper is structured as follows. The following section describes the theoretical framework, which is based on the principal-agent relationship that arises between investors and PEOs, and that will allow us to present several hypotheses. Section three describes the particularities of two alternative management models normally found in private equity in Spain, which could lead to different signalling patterns on the basis of the type of operator involved. Section four describes the data. The methodology used is presented in section five. Results are shown in section six. The final section summarises the main conclusions.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1. Management quality and principal-agent relationship between investors and PEOs in the literature

Two types of contractual relationships arise in the private equity process: the one that links investors and PEOs in the fundraising stage, and the one that links PEOs and private equity backed firms in the investment and divestment stages. Owing to the peculiar characteristics that arise in both relationships, the Agency Theory (Jensen and Meckling, 1976) is a suitable framework for studying them.

Most of the existing literature has focused on the study of the role of the PEO as principal and the entrepreneur as agent (see, among others, Sahlman, 1990; Reid, 1996, 1999; Smith, 1998; Kaplan and Strömberg, 2001). The detailed analysis of the PEO's role as an agent of the investor has received much less attention. To the best of our knowledge, there are only seven papers related to several aspects linked to this relationship. These analyse the procedures used by investors and PEOs to reduce conflicts stemming from the agency relationship (Sahlman, 1990); the phenomenon known as grandstanding, whereby younger venture capital firms tend to take their portfolio companies public earlier than older ones in order to build a reputation that will allow them to raise future funds (Gompers, 1996); the determinants of venture capital fundraising in the United States (Gompers and Lerner, 1998a); the need by PEO's to highlight how painstaking they are in their work (Osnabrugge, 2000; Osnabrugge and Robinson, 2001); the loss of reputation faced by PEOs with investors when they do not make any investment (Bankman and Cole, 2001); and the impact that both the reputation and the bargaining power of PEOs have on the design of contracts (Schmidt and Wahrenburg, 2003). However, none of these papers analyse the mechanisms whereby PEOs establish their quality, and this is the main contribution of this paper.

In the relationship generated between PEOs (agent) and investors (principals), there is some information that is only available to the PEO, thereby giving rise to an information asymmetry problem. Information asymmetry may exist in two forms, namely hidden action -giving rise to the so-called moral hazard problem- and hidden information, causing adverse selection (Amit et al., 1998).

Moral hazard refers to the possibility of the agent's deliberately acting in his own interest and against the best interest of the principal and it arises because investors cannot completely control the actions of PEOs. However, the risk to PEOs of damaging their quality as a result of bad fund management, with an ensuing decrease in their ability to attract fresh funding, helps to keep their opportunism in check.

Adverse selection, on the other hand, takes into consideration the agent's inability to act in the best interests of the principal because of his incompetence. The risk arising from adverse selection is high in this activity, owing to the broad range of duties the agent has to perform. There are two ways of alleviating this problem. First, improving the selection process of PEOs; second the informed party can provide some sign of its quality via signalling -and this is the natural reaction of the market to the adverse selection process (Spence, 1973) -.

Improvement in the PEOs' selection process can be achieved by increasing the information available regarding the PEO's track record. The problem arises in economies in which private equity is still in the process of developing, such as the Spanish one, since in those markets this

information is not available. In these markets, the PEOs must therefore signal their quality to investors. Thus, the main aim in this paper is to find evidence of PEOs' sending signals that might be considered by investors when evaluating the quality of PEOs.

A given signal will be credible only if the bad PEO chooses not to mimic the good one by sending the same signal. If the cost of the signal is higher for the bad type than it is for the good type, the former may not find it worthwhile to mimic, and so the signal could be credible (see, among others, Spence, 1973; Ross, 1977; Leland and Pyle, 1977; and Riley, 1979). This is known in literature as costly signalling or informational equilibrium.

However, there are other papers in the signalling literature that show that even costless signals could be credible. This is referred to as 'cheap talk' in the literature (Crawford and Sobel, 1982; and Brennan and Hughes, 1991). In this case, the good type has an incentive to separate from bad type by attracting scrutiny and getting discovered. The bad type is indifferent because if he attracts scrutiny, he will be discovered, and if he keeps quiet, as the good type has separated, he will be discovered as well. In order for agents to be interested in scrutinizing, they should benefit from investigating. In the setting of this paper, the benefit that an investor can obtain when discovering a good PEO is a higher return on the fund invested in. Finally, there is a third approach in the literature that aims to assess the impact of both costly and costless signals (Austen-Smith and Banks, 2000; Bhattacharya and Dittmar, 2003).

In the following paragraphs several hypotheses aimed at introducing several quality-building mechanisms are presented, with the theoretical support of Agency and Signalling Theories. As information on PEO's track record is limited in developing private equity markets, a proxy for management quality is needed in these markets. In developed private equity markets, the ability to attract funds depends on the manager's reputation (Norton, 1995; Gompers and Lerner, 2001b; Janney and Folta, 2003; Schmidt and Wahrenburg, 2003). One would expect this to be the same in developing countries, so the annual volume of funds raised by PEOs may be a proxy for management quality.

2.2. Hypotheses related to the investment/divestment behaviour of PEOs

In the first place, it is very important to be able to demonstrate an ability to attract, negotiate and close a sufficient number of deals. This ability will be highly regarded by investors, bearing in mind the complex nature of this activity and the long period of the investment and divestment processes. For this reason, the volume of investments made in the past by each operator, as a sign of his abilities to bring in new investments for his portfolio, may act as a signal of the PEO's quality. Moreover, the greater the volume invested, the greater will be the signal of quality given out.

In this sense, Bankman and Cole (2001) show that PEOs make investments, even when they know they are overvalued, so as to maintain a position in the marketplace. This premise thus constitutes the first hypothesis to be tested. The volume of investments could be conceived as a costly signal, since good players would have access to a richer flow of deals than bad ones and would enjoy greater credibility among the owners of companies seeking funds. This implies a lower cost of entrance for good players.

Hypothesis 1: *The volume of investments made by private equity operators constitutes a positive signal of their quality.*

It is interesting nonetheless to observe that there may be an optimum number of firms in a PEO's portfolio (Cumming, 2001; Kanninen and Keuschnigg, 2003a, 2003b; Bernile and Lyandres, 2003). This could be due to the fact that those PEOs who make a large number of investments may spend less time following up each individual portfolio company. As pointed out by Keuschnigg (2002), the number of firms in which PEOs invest in is limited due to the time required in the following up of each investment. In as much as it has been suggested in the literature that the role of managerial assistance carried out by PEOs helps to boost the firms' value by increasing the likelihood of success in the funded firms (Norton, 1995; Sapienza et al., 1996; Schmidt, 2002; Kanninen and Keuschnigg, 2003a, 2003b), a falloff in such management assistance could have negative consequences for the final returns obtained by PEOs, and this would negatively affect their quality and lead to fewer funds being raised in the future.

In this sense, one would expect a negative relationship to exist between the number of investments made and the PEO's quality. Nevertheless, the relevant measure should be the number of portfolio companies for each investment manager. This is because a PEO could increase the number of investments without reducing managerial assistance if, at the same time, the number of investment managers increases. All of this may indicate that having a large number of portfolio companies per investment manager leads to lower future returns for PEOs. Thus, maintaining a low ratio of investments per investment manager constitutes a positive signal of the PEO's quality. This ratio can be regarded as a costly signal since maintaining a low ratio is more costly the lower the expected return from the portfolio. This leads us to formulate the following hypothesis:

Hypothesis 2: *An increase in the ratio of portfolio companies to investment manager indicates a relative reduction in the managerial assistance of portfolio firms, and this may have a negative effect on PEO's quality.*

The ability to divest in a reasonable time period is also of importance since it enables the capital gains obtained to be realised and also indicates that the funds are returning to their investors. Nevertheless, not only is divestment itself important, but the mechanism used to do so. Ali-Yrkkö et al. (2003) point out that the return obtained in divestments enables higher-quality operators to demonstrate their skills, and this has an important effect on their reputation and hence on their ability to raise funds in the future. The best return is assumed to occur in divestments via IPOs or by sale to an industrial or financial investor. In this sense, Gompers (1996) notes that recently formed PEOs tend to launch initial public offerings (IPOs) at an earlier stage than more established operators, to *grandstand* their reputation.

On the contrary, modest returns are obtained through divestments by repurchase of the stake held by PEOs by the original shareholders and/or managers. Divestments by write-offs imply a significant or a total loss of almost all the amount invested. Divestments through IPOs or sales to third parties are perceived as costly signals, because well established PEOs have better access to those markets than newer players, in terms of both opportunities and intermediation costs. In the case of divestments through repurchase of the stake or write-off, they could both be regarded as costless signals since they imply the sending of a negative signal to the market. Therefore, the third hypothesis proposed is:

Hypothesis 3: *The volume of divestments by means of IPOs or third-party sales indicates a better quality of PEOs. On the contrary, divestments through repurchase of the stake or write-off imply a poor quality of PEOs.*

2.3. Hypothesis related to organisational characteristics of PEOs

In addition to variables related to the investment/divestment behaviour of PEOs, there are other organisational characteristics that could be used by PEOs to signal their quality. The first one would be the number of years' experience of the private equity manager.¹ It is expected that the higher the experience, the higher the perception of quality (Gompers and Lerner, 1998a), leading to the following hypothesis:

Hypothesis 4: *The PEO's quality is positively related to the previous experience of management.*

Secondly, it is assumed that being a full member of the national private equity association can constitute a prestigious reference, as the operator has to accept a series of rules regarding the carrying out of his activity. In the case of Spain, the national association is named *Asociación Española de Entidades de Capital Riesgo* (ASCRI).

In the same sense, signing up to the local private equity regulation, in order to obtain fiscal incentives, implies screening and monitoring duties by a government-controlled agency. In the case of Spain, the first legislation ruling private equity was passed in 1986, offering several fiscal incentives to registered PEOs. The enactment of the Law 1/1999 of January 5 considerably improved legal and fiscal treatment of private equity and venture capital. Under the new legislation, the legal powers for authorising, registering and controlling were entrusted in the Spanish Securities and Exchange Commission (*Comisión Nacional del Mercado de Valores*, CNMV), which is the agency in charge of supervising and inspecting the Spanish Stock Markets and the activities of all the participants in those markets. It is assumed that being officially registered (it is not mandatory) and carrying on the activity under the accomplishment of this law can give a positive indication of the honesty and competence of PEOs. Thus, the hypothesis to be formulated is the following:

Hypothesis 5: *PEOs signal their quality to investors by applying for membership in the local private equity association and signing up to the Law of private equity.*

The geographic location of the PEO in relevant economic areas has also been considered. In the case of Spain, the ever-growing number of investors, and particularly the amount of resources being managed in the country's capital, Madrid, may result from the higher perception of quality accruing from being located in the capital city. This signal would be especially important in the case of PEOs aiming to attract non-resident investors for specific investment opportunities in the country.

Hypothesis 6: *PEOs signal their quality to investors by establishing their headquarters in the country's capital city.*

Finally, Gompers and Lerner (1998a) find that larger PEOs, that is, those who handle greater amounts of money, are those with more reputation and, consequently, the ones who raise more funds, leading us to formulate the following hypothesis:

Hypothesis 7: *PEOs managing larger sums of capital are thought to be of higher quality and have an easier access to new fundraising.*

¹ This number was taken, rather than the number of years the institution itself has been in existence, because many of the newly created PEOs have built up their teams from experienced directors coming from other older firms.

The consideration of costly signals in the literature is associated mostly with costs that are higher to the bad player. In this sense, the managers' experience should be categorised as a costly signal since gathering an experienced team is costlier to newly established PEOs because they have to offer a reward to attract an experienced manager. In relation to belonging to ASCRI, signing up to the CNMV programme and setting up the headquarters in Madrid, these should be regarded as costless signals.² The costs of these signals are similar for all PEOs, irrespectively of their quality. However, they attract public scrutiny and will help good quality PEOs to be discovered by potential investors. Finally, note that the particular size of the PEO is not a signal but merely a characteristic, since the PEOs do not take an active decision regarding this variable.

From a different perspective, the impact on fundraising of other control variables not related to management quality should also be included in the analysis. Firstly, and bearing in mind the cyclical nature of the private equity process, the amount of capital awaiting investment could be considered relevant in explaining new fundraising. It is presumed that the higher this figure is, the less inclined are investors to provide additional resources to increase the reserve of funds awaiting allocation, and a negative impact on the volume of funds raised is expected. Secondly, a time variable (deterministic time trend) is introduced to control for growth over time in the volume of new funds raised. The third variable registers real GDP growth in Spain between the years $t-1$ and t , and is aimed at testing its incidence, as has been done in previous works (Gompers and Lerner, 1998a; Jeng and Wells, 2000). Finally, interest rates are included in the same spirit than Gompers and Lerner (1998a). This variable refers to the five-year bond return and it is intended to match the average holding period in private equity investments.

3. SIGNALLING PATTERNS OF THE DIFFERENT TYPES OF PEOs IN SPAIN ACCORDING TO THEIR MANAGEMENT STRUCTURE

The fact is that there is not just one type of management structure in private equity. Rather, there are different forms presenting different problems in the relationship between investors and managers. This variety of investment vehicles is a consequence of the degree of development of private equity markets (Jeng and Wells, 2000). Moreover, the various kinds of vehicles in private equity activity become even more complicated as a result of the differences in the size and contributory potential of funds.³ In this section we split the population of PEOs into two groups: 'private equity companies' (henceforth PECs) and 'private equity management companies' (PEMCs). We infer that the signals given out by both groups may vary because of their particular characteristics.

By 'private equity companies' (henceforth PECs) we mean firms with unlimited duration that invest their own equity capital. Their shareholders, who are in fact the investors that commit their money to this activity, hire the private equity managers one by one, thus, creating a new management team. Conversely, 'private equity management companies' (PEMCs) are formed by established private equity management teams who seek to attract funds from investors each time

2 However, since 1999 the Spanish Private Equity Association has changed this policy, and today full members pay a minimum fare plus an additional amount based on the funds held under management.

3 In this activity institutional investors (such as pension funds, insurance companies, etc), financial groups, business groups, private investors and even public investors are involved.

they raise a new fund. While the relationship between investors and private equity managers in a PEC is thought to be unlimited, this is enforced for a limited life span in PEMCs. Most of the total pool of capital is in the hands of the PEMCs⁴ (Martí, 2002), which are the ones who manage most of the capital in this activity.

Provided that the type of contract between investors and managers is different between PECs and PEMCs, it is worthwhile to test the signalling attitudes of both groups. The limited duration in PEMCs has several implications. First, the risks stemming from the existence of information asymmetry are lower in the case of PEMCs. Second, the general partners in PEMCs must return the money to the limited partners as soon as divestments take place. This is not the case with PECs, where the resources recovered are immediately at the manager's disposal for reinvestment. Moreover, investors have the option of abandoning with positive value in the case of PEMCs, a choice that PECs do not have. Finally, investors in PEMCs do not disburse all the money at the beginning, rather, they do it by stages and systems of incentives directly linked to value creation are established.⁵ Therefore, all this implies a smaller need for sending signals to the market in the case of PEMCs.

However, the need to raise new funds is greater in the case of PEMCs. This is due both to the limited duration of the management contract and to the fact that this type of fund provides for the progressive handing over of divestments carried out to the stakeholders, so the manager does not have these amounts at his disposal. Therefore, the typical PEMC must start a new fund every few years (Gompers and Lerner, 1998b), generally every two or three years, in order to continue with the activity. In this sense, PEMCs would signal their quality to the market. What is more, the management fee that PEOs charge to investors is, in the case of PEMCs, an increasing function of the capital raised by the fund. On the contrary, the need for raising funds is lower in the case of PECs,⁶ although the remuneration of managers in this case is also positively linked to the funds raised, as it depends on the size of the PEC.

In principle, and for the above-mentioned reasons, all hypotheses formulated would be expected to be satisfied in both types of PEOs. However, it is worth qualifying this statement with regard to satisfying Hypothesis 2 in the case of PECs. For both types of PEOs, it may be that the number of investments in the portfolio will increase in order to diversify the risk properly and reduce the risk of low performance. But as already mentioned in Section 2, the carrying out of a large number of investments per manager may lower the perception of the quality of management. Thus, there is a trade-off problem for both types of PEOs. However, this problem is exacerbated in the case of PECs because they have even more incentives than PEMCs to increase the number of investments in their portfolio. This is because often the reward for PEC managers is based on the individual success in a given investment. On the contrary, the reward of PEMC managers is not linked to individual operations, but both to the amount of funds under management and the capital gains obtained from the fund as a whole at the end of its life. So, by increasing the number of investments in their portfolio, PEC managers increase the chance of

4 Perhaps as a result of agency problems posed by PECs, especially for those belonging to financial groups or business corporations.

5 In addition to the fixed management fee, applied on the whole sum of committed capital, which ranges around 2%-3%, a variable part is added, which consists of a stake derived from total capital gains earned (carried interest). This reward usually varies between 20% and 25% of the same total.

6 The reason is that the proceeds from divestments, in this case, are reinvested in new portfolio companies.

financing a successful venture, thus obtaining higher compensation. Therefore, those managers face a trade-off between signalling close attention to portfolio companies or increasing the number of investments to properly diversify risks and to maximise the probability of getting a substantial reward from an individual success.

Hypothesis 8: *The unlimited duration of the management contract in PECs, compared to the limited duration in the case of PEMCs, could determine different signalling patterns between them.*

4. DATA AND DESCRIPTIVE STATISTICS

The data regarding the private equity activity in Spain is based on the database built by José Martí Pellón,⁷ from the University Complutense of Madrid. The sample analysed covers the whole population of PEOs in the Spanish market during the period 1991-2001, in which the activity of 100 PEOs was registered. Several filters to exclude anomalous data were applied on the initial sample. First, data from PEOs who did not provide information on fundraising, investment and divestment activity were excluded (two small PECs). Second, the operators who handle pan-European funds were also excluded (five PEOs). This exclusion is justified because we are analysing the conditioning factors of management quality in Spain, which could differ from the ones in the country or countries where these funds were raised. Finally, since it is necessary to include lagged variables in the empirical models proposed, data from 13 PEOs created in the last year of the sample were excluded. The resultant sample covers 80 national PEOs and is therefore highly representative of the population (80%), with a total of 582 observations considered.

Given the steady increase in the number of PEOs during the period analysed, the number of operators differs over the sample period, with a maximum number of 64 organisations in a year. Table 1 shows the increase in the number of organisations in this period.

Table 1
Number of private equity organisations in Spain.

Year	N° PEOs	Year	N° PEOs	Year	N° PEOs
1991	44	1995	53	1999	54
1992	45	1996	51	2000	64
1993	53	1997	49	2001	62
1994	53	1998	54		

Source: based on data from Professor José Martí Pellón, from the University Complutense of Madrid, and the one in www.webcapitalriesgo.com.

Note: These data do not include five of the pan-European funds and PEOs created in 2001.

7 Since 1984 José Martí Pellón collects data directly from each venture capital/private equity organisation operating in Spain. He is the official source that feeds the Spanish Private Equity and Venture Capital yearly surveys on behalf of the local private equity association (ASCRI) and the European Private Equity & Venture Capital Association (EVCA). The information that he provides to EVCA is the only one that is publicly available and can be found in the EVCA yearly surveys.

In Table 2 characteristics of the sample are shown according to the two types of PEOs considered. We observe that there is a larger number of PECs (even though PEMCs are the ones that manage most of the resources, as highlighted in Table 3). Taking into account the whole sample period, 68.73% of the observations belong to operators who adopt the PEC form. The stability figure represents the changes from one category to another registered in the PEOs in the period considered. The average is presented, calculated among all the PEOs in each group from the percentage of observations of each PEO recorded in the same category. For example, 97.32% percent of all the PECs in the sample analysed take the form of a PEC during the whole sample period. As can be seen, stability is very high, with the corresponding effect on the validity of the results when considering that the PEMC group is formed by PEMCs and the PEC group is formed by PECs.

Table 2
Number of observations: distribution for the different types of PEOs.

	PEMCs	PECs
Total number	182	400
1991	27.27%	72.73%
1992	28.89%	71.11%
1993	24.53%	75.47%
1994	28.30%	71.70%
1995	28.30%	71.70%
1996	29.41%	70.59%
1997	28.57%	71.43%
1998	35.91%	64.81%
1999	37.04%	62.96%
2000	35.94%	64.06%
2001	37.10%	62.90%
Average	31.27%	68.73%
Stability	89.22%	97.32%

Source: based on data from Professor José Martí Pellón, from the University Complutense of Madrid, and the one in www.webcapitalriesgo.com.

Note: These data do not include five of the pan European funds and PEOs created in 2001.

As has been previously commented, the volume of funds raised will be used as a proxy for management quality, which is the variable to be explained. In Table 3 some descriptive statistics of the endogenous variable are shown. The average value of the volume of funds raised is €6 million annually. This figure shows an important amount of dispersion, 0 being the minimum value and €455.9 million the maximum one. The cyclical nature of private equity markets explains that the median has null value, since operators usually activate this process every two or three years. Figure 1 displays the percentage of operators raising private equity funds by year. However, the main reference provided by Table 3 is the considerable distance between the averages of the different types of PEOs. The average amount of fundraising and the standard deviation is very much higher for PEMCs than for PECs. The t-statistic for a difference in averages between both types, given a different variance for each one,⁸ rejects the equality of means hypothesis.

⁸ Previously a variance equality contrast was made between each type, with the homoskedasticity hypothesis being rejected.

Table 3
Descriptive statistics of new funds raised, distinguishing by different types of PEOs
(in € thousands).

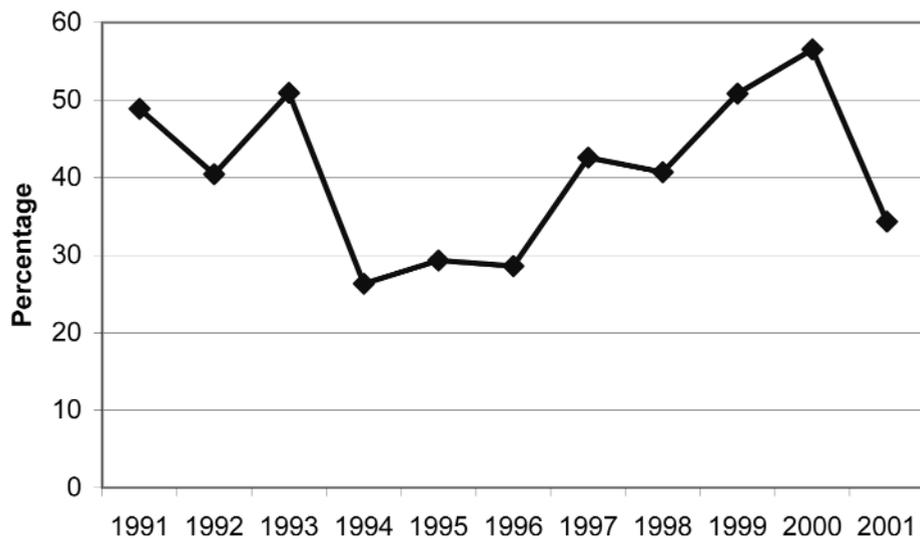
	New Funds Raised				
	Mean	Median	Standard dev.	Minimum	Maximum
Whole sample	6048.8	0	26708.1	0	455861.6
PEMCs	13441.2	0	43938.8	0	455861.6
PECs	2685.2	0	11253.3	0	144752
p-value ^a	0.0007				

Source: based on data from Professor José Martí Pellón, from the University Complutense of Madrid, and the one in www.webcapitalriesgo.com.

Note: These data do not include five of the pan-European funds and PEOs created in 2001.

^a Significance based on a one-sided t-test of equality of means.

Figure 1
Percentage of private equity operators raising funds.



5. METHODOLOGY

5.1. Description of variables

In order to explain the PEO's quality the set of independent variables has been divided into three large groups. The first two groups refer to the investment/divestment behaviour of PEOs and to their organisational characteristics, respectively. The third group includes control variables.

Variables related to the investment/divestment behaviour of PEOs

This group includes managers' investment and divestment activity and corresponds to the three initial hypotheses proposed. Related to the investment activity, two variables have been included: the amount invested in the previous year by a given PEO; and the ratio between the number of portfolio companies in the previous period and the number of investment managers that were part of the PEO's team in that period. Regarding divestment activity, data on the amounts divested the previous year by the PEOs are considered. These data refer to values at cost, that is, the values originally invested in the portfolio company, since data on the real market value obtained at the time of divestment are not available. However, it was possible to identify the volume divested through the following ways: placement in the stock market, sale of the stake to third parties, write-offs and repurchase of the stake held by PEOs by the original shareholders and/or managers.

Variables related to organisational characteristics of PEOs

The variables in this group refer to several factors such as i) managerial experience, ii) belonging to acknowledged private equity associations, iii) activity regulation, iv) geographic location and v) company size. All these effects are approached through categorical and dummy variables.

Managers' experience records the number of years' experience of the team directing the private equity firm. The second variable is a dummy indicating whether the PEO belongs to a sector-related association. The third variable is a dummy variable that takes value one if the PEO has signed up to the Law of private equity, and zero otherwise.

The geographic location of the operator has been considered through a dummy variable that indicates whether the PEO is based in Madrid. Finally, the size of the institution is included via a dummy variable indicating the operator's funds under management, distinguishing between large size or small, by considering as large size those who manage, at any given time, more than €60 million.

Control variables

Finally, other control variables that can explain fundraising are added to the model, such as the amount of funds still available for investment, the simple growth of activity over time, the economic growth and the interest rates.

5.2 Models and methodology

Given that available data refer to time series observations for a sample of individual units, which are PEOs, the panel data methodology technique is used in the empirical analysis. The use

of this methodology offers several advantages, of which the main one is that it enables us to control unobservable individual heterogeneity.⁹

In general terms, the regression to be estimated is in the form:

$$y_{it} = x_{it}'\beta + \eta_i + \varepsilon_{it}; \quad i = 1, \dots, N; \quad t = 1, \dots, T \quad (1)$$

where y_{it} denotes the endogenous variable, which is explained on the basis of x_{it} , an n-dimensional vector of explanatory variables. The index i denotes the individual and t denotes the time period. The term η_i represents the unobservable characteristic or intrinsic effect in each individual, assuming that it is constant in time for each individual and possibly different among them. This variable plays a fundamental role in the methodology of panel data, because it allows control of the effect of the variables present in each individual which are not directly quantifiable or observable, like psychological or cultural variables. Finally, the term ε_{it} denotes the random disturbance of the model and it is assumed to be normally distributed with mean zero and variance σ^2_ε , $\varepsilon_{it} \sim N(0, \sigma^2_\varepsilon)$.

Specifically, the most general model is as follows:

$$\begin{aligned} Nfund_{it} = & \alpha + \beta_1 Inv_{it-1} + \beta_2 RatioInv_{it-1} + \beta_3 DivIpoTrsl_{it-1} + \beta_4 DivWoffObb_{it-1} \\ & + \beta_5 Experience_{it} + \beta_6 Ascri_{it} + \beta_7 Law_{it} + \beta_8 Madrid_{it} + \beta_9 Large_{it} + \beta_{10} Avcap_{it-1} \\ & + \beta_{11} Trend_t + \beta_{12} GDPG_t + \beta_{13} Interest_t + \eta_i + \varepsilon_{it} \end{aligned} \quad (2)$$

In this model, all variables in the first group and available capital are lagged one period, which is justified by the average time required to raise a new fund, plus the delay with which this information is made available to the public.¹⁰ All numerical variables referring to fundraising, investments and divestments are expressed in thousands of euros on the basis of the year 1991. A brief description of the variables involved can be found in the Table A1 in the appendix. Statistical descriptives for the first ten variables in this general model are also shown for the whole sample (Table A2) and for the two types of PEOs analysed in Section 3 (Tables A3 and A4).

The dependent variable -annual volume of funds raised- takes positive values when PEOs are able to raise funds and zero otherwise (Figure 1 shows a high proportion of observations taking value zero). This sample characteristic, however, has strong methodological implications because ordinary least-squares are unable to provide consistent estimations in this context, and more complex methodologies have to be considered instead. In particular, there are two approaches that specifically deal with the problem of zero values in the dependent variable.

The first approach assumes that available data are censored, that is, only observations beyond a threshold point can be observed. In this context, a Tobit model (Tobin, 1958) could be used, considering zero as a threshold value and reformulating model (1) in terms of a latent variable y_{it}^* ,

$$\begin{aligned} y_{it}^* &= x_{it}'\beta + \eta_i + \varepsilon_{it}; \quad i = 1, \dots, N; \quad t = 1, \dots, T \\ y_{it} &= \max(0, y_{it}^*) \end{aligned} \quad (3)$$

9 For a more detailed study on the advantages and other issues related to panel data methodology, see Arellano and Bover (1990) and Hsiao (2003).

10 Although official reports on the year's activity are usually published in June of the following year, some partial information is available before that date, which could be considered by investors.

This model is known as the Tobit model type-I (Amemiya, 1985) and is estimated by maximum likelihood. Under the assumption of a correctly parameterised individual specific effect and, as in the standard Tobit model, normally distributed error terms, this approach leads to consistent estimations.

The second approach considers that observations taking value zero are not necessarily the result of a censoring problem. On the contrary, they could be originated by the characteristics of the particular data generating process, implying that the Tobit methodology is not conceptually suitable (Sigelman y Zeng, 1999). This seems to be the case here, because the zero values are observed as a consequence of the PEO's inability to raise a new fund.

The proper approach consists of modelling the decisions of individuals that cause the zeros (Maddala, 1992). In this case, there is a problem of sample selection bias that leads to inconsistency of the parameters estimates if a standard regression is used in the estimation. The model to be considered is the Tobit model type-II (Amemiya, 1985), which is a model of sample selection:

$$d_{it} = z_{it}'\gamma + v_i + v_{it}; \quad d_{it} = 1 \text{ if } d_{it}^* > 0 \text{ and } 0 \text{ otherwise} \quad (4)$$

$$y_{it} = x_{it}'\beta + \eta_i + \varepsilon_{it}; \quad y_{it} = y_{it}^* \cdot d_{it}$$

This model is somewhat more general than the Tobit model type-I, since it allows different data generating process for both the zero and the positive observations. In this model, the first equation is referred to as selection equation, while the second one is the main equation. In the case considered in this paper, d_{it} indicates if a given PEO has raised funds, while y_{it} measures the volume raised when $d_{it}=1$. The variables d_{it}^* and y_{it}^* are latent variables. The error components v_i and v_{it} are orthogonal to each other and both assumed normally distributed with mean zero and variances σ_v^2 and $\sigma_{v_i}^2 = 1$, respectively. The terms η_i and ε_{it} are also orthogonal to each other and both assumed normally distributed with mean zero and variances σ_η^2 and σ_ε^2 , respectively. Besides, the terms v_i and η_i may be correlated with covariance $\sigma_{v\eta}$. In a similar manner, the covariance between v_{it} and ε_{it} is given by $\sigma_{v\varepsilon}$. Finally, it is assumed that the distribution of errors in the selection equation and in the main equation is jointly normal. The selection equation is a random effects probit model and the main equation is a linear random effects model. The former measures the impact of the independent variables on the probability of raising funds, while the latter analyses the influence of the regressors on the volume of funds raised, so that only positive observations are used.

This model is usually estimated using the Heckman (1979) methodology, which gives consistent estimates of the parameters in the main equation via a two-step technique. The selection equation is estimated in the first step, and a new regressor, which is the conditional expectation of the error term, is generated using the estimates. In the second step, and after adding the new regressor into the main equation with the aim of getting a zero conditional expectation, the main equation is estimated. Several authors have extended the Heckman methodology to the panel data case (see, for example, Wooldridge, 1995; Kyriazidou, 1997; Vella and Verbeek, 1999). The methodology applied in this paper is an extension of the Heckman methodology, and is based on the techniques developed by Verbeek and Nijman (1996) and Vella and Verbeek (1999). The idea consists of eliminating the selection bias by incorporating two additional regressors (named A1 and A2) into the main equation. These terms represent the expected values of η_i and ε_{it} conditional on the vector of all possible outcomes d_i .

Finally, it should be remarked the importance of the decision concerning the variables that will be included in the selection equation and in the main equation. Using the same vector of regressors in both equations, z and x , respectively, would cause severe problems of multicollinearity, since the terms A1 and A2 included in the main equation will be a function, although a non-linear function, of x . In this case, the parameters β estimated would be consistent but very imprecise because of high standard errors. In order to avoid this problem, the vector z should contain at least one variable that is not included in x , which is known as an exclusion restriction. However, caution should be taken, because if a variable in the x vector is wrongly excluded, a sample selection bias will be detected as the only way the excluded variable can affect y is through the terms A1 and A2.

When applying the Heckman methodology, the general model would be changed so as to include a selection and a main equation. The selection equation would be as follows:

$$\begin{aligned} ProbNfund_{it} = & \alpha + \beta_1 Inv_{it-1} + \beta_2 RatioInv_{it-1} + \beta_3 DivIpoTrsl_{it-1} + \beta_4 DivWoffObb_{it-1} \\ & + \beta_5 Experience_{it} + \beta_6 Ascri_{it} + \beta_7 Law_{it} + \beta_8 Madrid_{it} + \beta_9 Large_{it} + \beta_{10} Avcap_{it-1} \\ & + \beta_{11} Trend_t + \beta_{12} GDPG_t + \beta_{13} Interest_t + v_i + v_{it} \end{aligned} \quad (5)$$

with the endogenous variable taking value 1 in the case of a given PEO raising funds in a given year or 0 otherwise. The regressors included in the selection equation are the ones considered in equation (2).

These same regressors -except three variables- and the terms A1 and A2, are included in the main equation, with the amount of new funds raised being the endogenous variable. First, the variables GDP growth and interest rates are excluded from the analysis, as in Gompers and Lerner (1998a). Second, the amount of capital still available for investment is excluded because it is considered that it has an impact on the probability of raising funds but not on the amount raised, since the volume of funds raised depends, mainly, on the quality of the PEO.

$$\begin{aligned} Nfund_{it} = & \alpha + \beta_1 Inv_{it-1} + \beta_2 RatioInv_{it-1} + \beta_3 DivIpoTrsl_{it-1} + \beta_4 DivWoffObb_{it-1} \\ & + \beta_5 Experience_{it} + \beta_6 Ascri_{it} + \beta_7 Law_{it} + \beta_8 Madrid_{it} + \beta_9 Large_{it} \\ & + \beta_{10} Trend_t + A1_t + A2_t + \eta_i + \varepsilon_{it} \end{aligned} \quad (6)$$

6. RESULTS

6.1. Regression results for the whole sample of PEOs

The results obtained using the Heckman methodology are shown in Table 4. This table includes the results for the selection equation (probit) and the main equation (generalised least squares, GLS).¹¹

Regarding the first group of variables that attempt to explain success in new fundraising, evidence is found of the effect of the volume of lagged investments on new funds raised, but not on the probability of raising funds, thus verifying H1. This hypothesis, which has already been pre-

¹¹ Note that parameter estimates display a high variability when comparing the coefficients across the independent variables within the same equation. This is due to differences in the scale in which variables are measured. This can be observed in Table A2 in the appendix.

sented for aggregated data in Martí and Balboa (2004), may be justified from the microeconomic standpoint by the existence of asymmetrical information in the relationship between investors and PEOs.

The ratio of portfolio companies to each investment manager has a negative and significant impact both on the probability of raising funds and on the volume of funds raised. This result verifies H2. This finding is consistent with the evidence presented by Osnabrugge and Robinson (2001), who interpret the follow-up of a smaller number of investments as indicative of a greater diligence in carrying out functions, and this signals a better reputation.

Finally, and regarding the exit process, the Heckman technique does provide partial evidence, since the volume of divestments through IPOs and trade sales has a significant and positive impact on the volume of funds raised.

Within the group of variables related to exogenous signals, evidence is found of the positive impact of membership of the ASCRI association both on the probability of raising funds and on the volume of funds raised. Regarding the variable representing the number of years of experience,

Table 4
Estimations for the whole sample. Two-step Heckman methodology.

Independent variables	Probit (1st step)	MCG (2nd step)
Inv _{it-1}	1.33E-5	1.343***
RatioInv _{it-1}	-0.119***	-7570.2***
DivIpoTrsl _{it-1}	-1.12E-5	4.055***
DivWoffObb _{it-1}	4.48E-5	-0.465
Experience _{it}	0.016	948.38*
Ascri _{it}	0.435**	20909**
Law _{it}	-0.027	-653.33
Madrid _{it}	-0.243	-8510.1
Large _{it}	0.829***	36712***
AvCap _{it-1}	-1.37E-5***	--
Trend _t	-0.035	-468.98
GDPG _t	-1.907	--
Interest _t	-2.177	--
A1 _i	--	1402.5
A2 _{it}	--	25683***
Constant	-0.092	-68076***
Log likelihood	-287	
R ²		0.525

Estimations of parameters and significativity (***)=Significant at 1%, (**)=Significant at 5%, (*)=Significant at 10%) using a two-step Heckman model. The variables used include: Inv_{it}=investments. RatioInv_{it}=n° of portfolio companies per investment manager. DivIpoTrsl_{it}/DivWoffObb_{it}=divestments through IPOs and trade sales / write-offs and owner buy-backs. Experience_{it}= years of managers' experience. Ascri_{it}= dummy (1 if Ascri membership). Law_{it}= dummy (1 if signing up to the Law of Private Equity). Madrid_{it}= dummy (1 if operator is based in Madrid). Large_{it}=dummy (1 if total funds under management >€60 millions). AvCap_{it}=available capital for investment. Trend_t=time trend. GDPG_t=gross domestic product growth. Interest_t= interest rate for a five-year holding period.

the coefficient is positive and significant. On the other hand, signing up to the Law of private equity and the geographical situation of the PEO's headquarters in Madrid do not seem to have a significant impact on the endogenous variable. Similarly, the dimension of the capital under management has a positive and significant impact on the probability of raising funds and on the volume of funds raised, as in Gompers and Lerner (1998a), so that larger PEOs raise larger amounts.

The amount of capital awaiting investment has a negative impact on the probability of raising funds, as expected. It should be noted that PEOs can not justify new fundraising when they have plenty of money pending allocation. No evidence is found of the impact of the time variable or of the impact of GDP growth or of the impact of interest rates on new fundraising. The GDP growth was also not significant either in Jeng and Wells (2000), who made a study of twenty-one countries, or in Martí and Balboa (2004), who carried out a study with aggregate data for sixteen Western European countries.

Finally, it should be remarked that the significance of either the A1 or A2 terms is indicative of the existence of sample selection bias. The term A2 is significant in the model, so the Heckman methodology is more appropriate than the Tobit technique.¹² The information obtained by the former methodology is also greater. It can be concluded that evidence of H1, H2 and, partially, H3, is found. Besides, the membership of the ASCRI Association and the dimension of the resources managed by the PEO increase both the probability of raising funds and the volume of funds raised. Therefore, there seems to be a relevant impact of signals related to the investment/divestment behaviour, with a significant role of both costly and costless signals. Nevertheless, it is important to check whether this situation holds when the PEOs analysed are separated into more homogeneous groups.

6.2. Results for PEMCs and PECs

The results of the Heckman methodology for these types are shown in Table 5. In the case of the PEMCs the panel considered incorporates 28 PEOs (with 182 panel data observations), and in the PECs it includes 55 PEOs (with 400 panel data observations).¹³

The volume of lagged investments has a positive and significant impact but only for the PEMC group, which verifies H1 for this group. H2 is verified both for PEMCs and PECs. However, while in the case of PEMCs the ratio number of portfolio companies per investment manager has a negative impact only on the volume of funds raised, in the case of PECs it also affects the probability of raising funds. It may well be the case that investors are penalising PECs more because of the reward-related incentives this type of operators have by increasing this ratio, as already commented in Section 3. In the PEMCs group the volume divested through write-offs and owner buy-backs has a negative impact on fundraising, thus partially verifying H3 for this group.

Regarding the group of variables intended to mark management quality from external signs, ASCRI membership and the variable Law are significant, but only for the PEC group. The former variable has a positive impact on both the probability of raising funds and on the volume of

12 It should be remarked that, the results from the Tobit methodology resemble more or less the ones obtained with the Heckman methodology and are available upon request.

13 The sum of both does not come to 80 because during the period analysed two PECs became PEMCs and a PEMC became a PEC.

Table 5
Estimations for PEMCs and PECs. Two-step Heckman methodology.

Independent variables	PEMCs		PECs	
	Probit (1st step)	MCG (2nd step)	Probit (1st step)	MCG (2nd step)
Inv _{it-1}	8.45E-6	3.461***	1.41E-5	0.139
RatioInv _{it-1}	-0.049	-9869.4**	-0.138***	-2805***
DivIpoTrsl _{it-1}	2.28E-6	2.570	-6.08E-5	-0.036
DivWoffObb _{it-1}	3.25E-5	-6.629*	7.47E-5	0.213
Experience _{it}	0.026	2429.4	0.014	59.08
Ascri _{it}	0.693	28275	0.447**	7893.4**
Law _{it}	-0.130	5376.1	-0.119	-6222.2***
Madrid _{it}	-0.509	-29523	-0.067	2572
Large _{it}	0.583*	41229*	1.082***	20023***
AvCap _{it-1}	-1.38E-5**	--	-1.40E-5*	--
Trend _t	0.014	1884.9	-0.057	-9.085
GDPG _t	-2.185	--	-1.462	--
Interest _t	-4.396	--	-1.673	--
A1 _t	--	5043.7	--	117.90
A2 _{it}	--	43147**	--	5776.1**
Constant	-0.358	-118878*	0.060	-14996*
Log likelihood	-87		-193	
R ²		0.605		0.379

Estimations of parameters and significativity (***)=Significant at 1%, (**)=Significant at 5%, (*)=Significant at 10%) using a two-step Heckman model. The variables used include: Inv_{it}=investments. RatioInv_{it}=n° of portfolio companies per investment manager. DivIpoTrsl_{it}/DivWoffObb_{it}=divestments through IPOs and trade sales / write-offs and owner buy-backs. Experience_{it}= years of managers' experience. Ascri_{it}= dummy (1 if Ascri membership). Law_{it}= dummy (1 if signing up to the Law of Private Equity). Madrid_{it}= dummy (1 if operator is based in Madrid). Large_{it}=dummy (1 if total funds under management >€60 millions). AvCap_{it}=available capital for investment. Trend_t=time trend. GDPG_t=gross domestic product growth. Interest_t= interest rate for a five-year holding period.

funds raised, as expected. However, this is not the case of the variable Law, which is related to the impact of following the specific legislation on private equity. Although the negative sign may appear striking, the explanation lies in the smaller fundraising efforts of PECs that are registered at the CNMV. Finally, the amount of funds under management has a positive and significant impact both on the probability of raising funds and on the volume of funds raised. On the contrary, neither the number of years of experience nor the geographical situation of the PEO's headquarters in Madrid seem to have a significant impact on the PEO's quality.

The representative variable of the lagged volume of capital available for investment has a negative impact on the probability of raising funds in both groups. The variables time trend, GDP growth and interest rates do not have a significant impact on fundraising. Finally, the significance of A2 confirms the superiority of the Heckman estimation for both groups.¹⁴

14 Again, the results from the Tobit methodology are similar to those commented on in this subsection and are available upon request.

In summary, the consideration of the management approach determines significant differences in the quality-building mechanisms, with the PEMCs relying more on signals related to the private equity cycle and PECs relying more on external signs. As commented in Section 3, the limited duration of the contract that is signed between investors and managers forces PEMCs to raise funds periodically to continue with their activity, while PECs may rely on the re-investment of the resources that are recovered from divestments. Thus, in order to gain the investors' confidence, PEMCs should signal their quality to a greater extent, and this can be better achieved by providing references on their investment and divestment abilities.

7. CONCLUSIONS

This paper analyses the relationship between investors and private equity operators within the framework of the Agency and Signalling Theories. It is designed to increase our understanding of the quality-building mechanisms used by private equity operators to raise funds in the market. In countries where there is information about historical returns obtained by managers, reputation is linked to that information and investors may decide to allocate their funds on that basis. The problem arises in those economies in which information regarding historical returns is not available because the private equity market is still in the early stages of development. This is the case in the Spanish market, the present object of analysis. In such a context, private equity operators are forced to signal their quality to the market in order to attract funds from investors. This paper identifies two groups of variables indicative of management quality: one related to the investment/divestment behaviour, and a second aimed at the perception of quality on the basis of organisational characteristics.

Two methodologies are proposed in the empirical analysis: the Tobit methodology and the Heckman technique, the latter being appropriate when there exists a sample selection bias. The results show that, with regard to the first group of variables, the volume invested has a positive impact on the volume of funds that will be raised by managers the following year. However, as the ratio of portfolio companies per investment manager increases, both the probability of raising funds and the amount of funds raised decrease. We also find a positive impact of divestments through initial public offerings and trade sales on the volume of funds raised, which is consistent with the fact that these mechanisms are the most profitable ways of exiting.

Regarding the second group of variables, ASCRI membership and the size or volume of resources handled by the PEO have a positive impact on both the probability of raising funds and on fundraising, while the number of years of manager's experience only on the volume of funds raised. Finally, the lagged volume of funds awaiting investment shows a negative impact on the probability of raising funds, which was to be expected as PEOs raise funds to the extent that available capital is almost fully committed. In this way, the paper provides evidence that managers send signals aimed at establishing their quality, given their need to raise additional funds periodically.

Nonetheless, and given the great variety of PEOs existing in Spain, the types of signals sent are thought to vary according to their different characteristics; so from the general case the sample analysed is separated into two subpanels: PEMCs are compared with PECs. The analysis shows that the signals used by different types of operators are different too. It seems that PEMCs tend to use costly signals related to the investment/divestment behaviour. On the contrary, PECs rely more on costless signals related to organisational characteristics.

The analysis conducted in this paper may be a useful tool for PEOs. They may now be aware of the variables that are considered by investors when committing funds to private equity managers. This is very important because the private equity market, which is characterised by its cyclical activity, forces PEOs periodically to go to the market to raise funds enabling them to continue their work. The study also offers a guide to new PEOs that want to raise their first fund, because some variables that are not related to the private equity cycle itself, but have a positive impact on the volume of funds raised, have been identified. One further extension of the analysis performed here entails confirming the results obtained in other private equity markets that are still in the process of maturing. Another interesting question relates to investigating whether the factors that determine management quality in mature markets are different from the ones identified here.

APPENDIX

Table A1
Description and source of variables

Variable	Description	Source
<i>Nfund</i> : New funds raised	Total volume of new funds raised in 1991 euros.	Data base of José Martí Pellón (1991-2001)
<i>Inv</i> : Investments	Total volume of investments in 1991 euros.	
<i>RatioInv</i> : Ratio number of portfolio companies per professionals	Ratio between the number of portfolio companies and the number of investments managers in the same year.	
<i>DivIpoTrsl</i> : Divestments through IPOs and trade sales	Value at cost of divestments through IPOs and trade sales to a third party in 1991 euros.	
<i>DivWoffObb</i> : Divestments through write-offs and owner buy-backs	Value at cost of divestments through write-offs and owner buy-backs in 1991 euros.	
<i>Experience</i>	Number of years of experience of managers from the private equity firm.	
<i>Ascri</i> : Ascri membership	Dummy: 1 if operator belongs to the Spanish Private Equity Association (ASCRI).	
<i>Law</i>	Dummy: 1 if operator has signed up to the Law of Private Equity currently in force each year.	
<i>Madrid</i>	Dummy: 1 if operator is based in Spain's capital city.	
<i>Large</i>	Dummy: 1 if total funds under management are more than € 60 millions.	
<i>AvCap</i> : Available capital	Amount of capital awaiting investment in 1991 euros.	
<i>Trend</i>	Deterministic time trend.	
<i>GDPG</i>	Gross domestic product growth between years "t-1" and "t".	National Statistical Institute of Spain. http://www.ine.es
<i>Interest</i>	Interest rates for a five-year holding period in bonds.	Bank of Spain http://www.bde.es

Note: the source of all private equity variables is the database maintained by José Martí Pellón, with the sponsorship of the National Private Equity Association (*Asociación Española de Capital Riesgo*, ASCRI). In the case of the GDP, the source is the National Statistical Institute (*Instituto Nacional de Estadística*, INE, www.ine.es). The source of the interest rates is the Bank of Spain (www.bde.es).

Table A2
Descriptive statistics: whole sample.

	Mean	Median	Minimum	Maximum
Inv	4076	877	0	108374
RatioInv	3.14	2.78	0	18
DivIpoTrsl	982	0	0	64263
DivWoffObb	654	35	0	21781
Experience	8.32 years	8 years	0 years	29 years
AvCap	14913	3836	0	442333
PEOs percentage		Mean		
Ascri		67.70%		
Law		41.07%		
Madrid		40.21%		
Large		22.16%		

Note: values at 1991 prices.

All monetary variables are expressed in € thousands. The description of the variables can be found in the Table A1 in the Appendix.

Table A3
Descriptive statistics: PEMCs.

	Mean	Median	Minimum	Maximum
Inv	7137	2456	0	108374
RatioInv	2.46	1.86	0	15
DivIpoTrsl	2302	0	0	64263
DivWoffObb	965	0	0	17852
Experience	7.40 years	7 years	0 years	29 years
AvCap	34577	16902	0	442333
PEOs percentage		Mean		
Ascri		71.43%		
Law		52.75%		
Madrid		69.78%		
Large		49.45%		

Note: values at 1991 prices.

All monetary variables are expressed in € thousands. The description of the variables can be found in the Table A1 in the Appendix.

Table A4
Descriptive statistics: PECs.

	Mean	Median	Minimum	Maximum
Inv	2683	637	0	62882
RatioInv	3.46	3	0	18
DivIpoTrsl	382	0	0	25244
DivWoffObb	513	54	0	21781
Experience	8.74 years	8 years	0 years	26 years
AvCap	5966	2177	0	88298
PEOs percentage	Mean			
Ascri	66%			
Law	35.75%			
Madrid	26.75%			
Large	9.75%			

Note: values at 1991 prices.

All monetary variables are expressed in € thousands. The description of the variables can be found in the Table A1 in the Appendix.

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