Sensitivity of the supply of private equity to changes in fiscal and legal regulations: Evidence from Spain

Marina Balboa Ramón
Departamento de Economía Financiera, Contabilidad y Marketing
Universidad de Alicante
Marina.Balboa@ua.es

José Martí Pellón*
Departamento de Economía Financiera y Contabilidad III
Universidad Complutense de Madrid
jmartipe@ccee.ucm.es
Phone: +34 913942310
Fax: +34 913942534

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Abstract

This work analyses the efficacy of fiscal and regulatory changes on private equity fundraising, from the individual viewpoint of entities engaged in this process. Considering the population of private equity institutions in Spain in the period 1991-2005, the findings obtained show how effective was the introduction of specific regulation, which aimed to limit double taxation and provide confidence to investors. Moreover, results show evidence of the competition of private equity with the stock markets as asset class among which institutional investors share out their resources. This is contrary to the evidence found in the United States, where a positive relationship exists in the evolution of both markets due to the effect of initial public offerings of shares from portfolio firms. This result points to the importance of considering the degree of development of private equity markets around the world.

Key words: Private equity, legislation, taxation
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* Corresponding author.

1. Introduction

Originally, venture capital activity is a type of financing which allows temporary stockholdings, generally in minority form, in firms that cannot issue their shares on the stock market. Nevertheless, most of the investments in Europe go to mature firms, frequently financing the acquisition of majority stakes in firms by means of highly levered structures, thus giving rise to a broader term known as private equity. Investments are made by specialist private equity institutions (PEIs, hereafter) that are characterized by the active role they play in managing the portfolio. They add value to investee firms (Black, 1998), thus reducing the information asymmetry between investors and investee firms (Repullo and Suárez, 2004).

The literature has highlighted the benefits produced by this activity for the economic system and the investee firms (Birch, 1979; Storey et al, 1989). Nevertheless, since they are firms that are unquoted on the stock market, it has not been easy to carry out studies to verify this impact. In the earliest studies, carried out by consultancy firms, there was a strong selection bias which invalidated the findings. Not in vain, did Gompers and Lerner (2001a) state that this was one of the pending issues in venture capital research at the end of last century.

In recent years, there have been academic studies which, being of a more valid kind, have been able to show that investee firms have better performances than similar firms without venture capital backing. Kortum and Lerner (2000) find evidence of a greater capacity for developing new patents in venture capital-backed firms. Hellmann and Puri (2002) show that such firms receive a type of support allows a more professional approach in management and a better internal organisation. In the same sense, Davila et al (2003) find that investee firms with venture capital find it less difficult to attract top managers to pilot the development.

Regarding the European market, Belke et al. (2003) find a significant effect of private equity funding on employment, relying on country-level aggregate data. Despite the difficulty in obtaining individual data, some works began to appear such as those developed in Belgium (Manigart and Van Hyfte, 1999), Germany (Tykvova, 2000; Engel and Keilbach, 2002) and Spain (Alemany and Martí, 2005). In later works even the problems of causality (Baum and Silverman, 2004; Balboa et al, 2006) and comparability (Alemany and Martí, 2006) were tackled, since comparable firms from the corresponding control groups could not take advantage of capital increases.

It is precisely due to the importance of this activity in economic development that it has received special attention from public authorities (OECD, 2001; European Commission, 2003). However, although the measures adopted to develop venture capital and private equity are diverse, little is known about whether they are suitable or effective (Da Rin et al, 2005). The most traditional measures of government intervention center on fiscal policy and aid and subsidy programs. Several works have analysed the effect of fiscal policy via the study of the impact that variations in the tax on capital gains have on the development of venture capital activity (Poterba, 1989; Gompers and Lerner, 1998; Gordon 1998; Keuschnigg and Nielsen, 2003, 2004a, 2004b, Keuschnigg, 2004; among others). However, most of them take as a reference the greater incentive of individuals in adopting the role of entrepreneurs, or the incentives of venture capital institutions to provide more management support to financed firms. What has not received the same attention is the effect that tax reduction may exert on investors' wishes to commit funds to this activity.

Ever since constraints to international capital flows disappeared, governments have attempted to prevent domestic capital movements due to capital gains taxation. This is a variable of interest in the demand for venture capital, and is manifested in its effect on the volume of venture capital investment (Poterba, 1989), but it remains to be demonstrated whether that effect is also exerted on the fundraising process by venture capital or private equity institutions.

Moreover, the effect of venture capital on the financing of early stage and growing firms, plus the impact of private equity on liquidity in stockholdings in firms not quoted on the stock market, has encouraged governments to establish specific legislation in support of both venture capital and private equity.

In this paper we analyze the effect that the variations in the tax and legal environment exert on the private equity market and particularly, on investors' wish to commit funds to this asset class. Specifically, an analysis is made of the sensitivity of the amount of funds raised to the changes in the tax levied on capital gains. Besides, the role played by regulatory changes on the volume of funds committed to private equity is studied. An analysis is made as to whether the measures aimed at generating a favourable environment for private equity investment lead to a significantly higher volume of funds raised, once we control by effects that can possibly be attributed to other variables. The study takes as reference the universe of PEIs established in Spain during the period 1991-2005, which enables the effect of these changes to be observed over time for a large number of entities.

Even after controlling for the significant effect that some variables have on fundraising, evidence is found of the positive effect caused by the introduction of specific legislation on fresh fundraising. This result is important for the public authorities, because it shows that the whole of the measures geared to creating a favourable environment provides a spur to private equity markets. On the contrary, no direct effect can be seen of the change in taxation of capital gains, of personal income tax, on the variable analyzed. This finding coincides with the one obtained by Poterba (1989) for the US.

Among the contributions of this paper, it must be mentioned that it is the first European study using disaggregated data, and incorporates a methodology that corrects the selection bias since these PEIs do not raise funds on a regular basis every year.

The work has been structured as follows: In the second section the main actions of governmental policy aimed at developing venture capital and private equity markets are described, with special emphasis on the fiscal and legal background and a revision of previous related empirical literature. There is also a description of the fiscal and legal background in Spain, the object of analysis in this work. In the third section the database we used is presented together with a description of the methodology and the empirical model to be tested. The findings are collected and commented on in the fourth section. In the final section there is a summary of the main conclusions and implications for public authorities, investors and future research are discussed.

2. Government policy on the development of venture capital and private equity markets

2.1. Previous literature: general framework and particular reference to the fiscal and legal environment

Venture capital and private equity markets have experienced spectacular growth in recent years. In the case of the US, although these markets began way back in the forties, the explosive development of venture capital took place in the US at the start of the eighties, with the help of a change in the legislation on pension funds and a reduction in the tax levy on capital gains (Bygrave and Timmons, 1992). In this development the Nasdaq has played a crucial role, providing the necessary liquidity to facilitate the closing of the venture capital cycle and the return of funds to those who provided the resources. In the case of Europe, the introduction of this mode of financing occurred in the seventies, but until the end of the eighties a true extension of the activity did not begin outside the United Kingdom. Since then markets have grown considerably, giving rise to a broader investment philosophy in unquoted company, which is known as private equity. The amount of funds raised skyrocketed from 2.9 billion euros in

1987 to 72 billion euros in 2005 (EVCA, 1988-2006). Likewise, there is an emerging private equity activity even in Eastern European countries.

The growth in private equity markets was accompanied by different schemes devised to help the market develop, allowing finance to reach as many innovating firms with good growth prospects as possible (OECD, 1997). Government intervention can occur through direct investment, or via setting up indirect measures. Some of the works analysing the role of the government in the US venture capital market are Florida and Smith (1993) and Lerner (1999). Regarding the European private equity market, some references include Aernoudt (1999), Beuselinck and Manigart (2006), Da Rin et al (2005), Keuschnigg and Nielsen (2001), and Lelux and Surlemont (2004), among others.

One of the main actions taken by the US government in developing small firms was to design a programme, in 1958, through which investment entities, Small Business Investment Companies (SBICs), were created to invest in new firms, or already-established, albeit small ones. Although they are privately run, they are authorised and regulated by the US Administration, which lent or acted as guarantor of funds at favourable interest rates. There are also different State-sponsored programs whose mission is to provide funds to finance the venture capital market and its development (Ernst and Young LLP, 2001).

In the case of Europe, various programs have also been set up, both in the EU as a whole as well as in member countries. In the former, the European Commission established the European Investment Fund, by means of a provision of more than 2 billion euros in 2001 into the largest European business investment fund (EIF, 2002). What is more, as part of the (Seed Capital Action Program) it covers part of the management costs incurred by the activity of venture capital institutions in seed financing. At the national level, there are various programs set up in different countries. Some pioneering programs were those approved in the UK in the eighties, namely the Business Start-up Scheme (1981) or the Business Expansion Scheme (1983 Finance Act). More recently, incentive programs have been set up in many European countries, such as: i) programs for investment in innovative firms (German Federal Ministry for Economics and Technology, 1999) and those with direct governmental commitent (Kreditanstalt fúr Wiederaufbau, KfW, in Germany; ii) the Guarantee Scheme in Holland at the beginning of the eighties; iii) the Plan Innovation in France (French Ministry of Industry, 2004); or the UK High Technology Fund (HM Treasury, 2003), among others.

In Israel, the most outstanding example of development of venture capital outside the US, the Inbal programmes were set up in 1992, with little success, and Yozma, in 1993. This latter programme gave a boost to venture

capital thanks to the high profitability it obtained from funds which it sponsored itself. In Canada, with government aid in the form of credits or tax subsidies, the Labor-sponsored Venture Capital Funds (LSVCFs) were set up at the beginning of the eighties, with the aim of promoting the venture capital market (Ayayi, 2004). Also in countries with emerging economies programs have been set up, such as in Brazil, (the Inovar project in 2000); in Mexico (by means of the support provided by the National Council of Science and Technology); or Chile (see Carter, Barger and Kuczynski, 1996).

Regarding the analysis of the impact that the fiscal and legal environment can have on venture capital or private equity markets, several papers have dealt with this subject. Most of them, however, simply analyze the effect that the tax rate on capital gains has on the figure of the entrepreneur or the venture capital/private equity institution, relegating the study of the impact of the latter on investors. In this line of work, Poterba (1989) finds that an increase in the tax rate on capital gains affects entrepreneurs to a greater extent, since it reduces the incentive to take on risks and is an obstacle to the transmission of businesses. This latter aspect is especially important in European countries, where private equity centres on the acquisition of existing firms by using high levels of leverage. Nonetheless, this author also analyzes how the tax rate affects investors' willingness to provide funds, and found little evidence in favor of such a relationship.

More recently, Keuschnigg and Nielsen (2003) researched the effect that the tax rate on capital gains exerts on management support by venture capital/private equity institutions to investee firms and on the level of entrepreneurial activity. These authors found that a reduction in the tax rate increases management support, but reduces the number of entrepreneurs. Keuschnigg and Nielsen (2004a) extend this analysis and find that a reduction in the tax rate increases the efforts of both the PEI and the entrepreneur. In the same vein, Keuschnigg (2004) analyzes the role played by both the tax rate and the schemes devised to help to start-up firms in the number of venture capital-backed firms. This author finds that tax regulations can be designed to promote a more effective investment style on the part of the venture capital/private equity institutions. This is because, in a situation in which the latter finance a restricted number of firms, with the intention of providing support in management, a reduction in the tax rate creates incentives for venture capitalists to devote more effort, and thus increase the added value in investee firms.

When comparing the effect of different political and tax-related initiatives on entrepreneurial and venture capital activity, Keuschnigg and Nielsen (2004b) find that a reduction in the tax rate is more beneficial than aid

in the costs of setting up a new company. This is because whereas the first of these measures would reinforce incentives for venture capital entities to make an effort, and thus increase the likelihood of business success, the latter measure would be more geared to promoting the creation of new firms.

Da Rin et al. (2005) centre on the impact that tax regulations exert on the volume invested in venture capital. For that purpose, they used data from a panel of 14 European countries and found that a tax rate reduction on capital gains increases the proportion of funds invested in high-tech sectors and in firms in the initial stages of development. Thus, tax reductions geared to increasing firms' profitability would have an effect on the makeup of investments in the venture capital market, since it would be favoring firms with fewer assets to act as security for the debt.

With regard to the contributions that analyze the effect of the tax rate on investors' wish to commit funds to this activity, a limited number of articles can be quoted. Bygrave and Timmons (1985) find that more funds were raised after the federal tax reform which reduced the tax rate in the late seventies, but their finding is based on just 14 time-series observations. Nevertheless, as mentioned above, Poterba (1989) obtains very little evidence in this sense.

Gompers and Lerner (1998) analyze the effect exerted by certain variables on the volume of funds raised. To this end they make two analyses, one using aggregate data on a national scale, and the other using disaggregated data from the individual viewpoint of the venture capital funds. In both cases they find that reductions in the tax rate on capital gains led to an increase in the volume of funds raised.

Turning to the effect of regulatory changes related to venture capital/private equity activity, we would quote schemes aimed to eliminate obstacles to the participation of certain types of investors, as for example, the already-mentioned case of ERISA in the US. Gompers and Lerner (1998) find that the redefinition of pension fund management responsibilities via the *Retirement Income Security Act* (ERISA), made room for a significant increase in the volume of funds raised. In other countries, it can be extended to the elimination of the restrictions to venture capital and private equity commitments imposed on insurance companies when it comes to allocating their technical reserves.

Based on the classification by Porta et al. (1998), Jeng and Wells (2000) analyze whether venture capital activity is affected by the country's legal tradition, but find no conclusive evidence in this sense. This finding could be caused by the use of the between groups methodology for estimating their

model, which considerably limits the number of observations used. Furthermore, to the extent that it may be possible to have more detailed information, it is advisable to analyze the specific effect of the regulatory changes over time that could be relevant for PEIs in a particular country.

A second group of regulation packages would be those related to the introduction of legal and fiscal rules to eliminate double taxation of the activity. Armour and Cummings (2004) analyze, by means of an aggregate analysis of a sample of 15 countries, among other aspects, the effect of the legal and fiscal environment on the volume of funds raised. For that purpose, they used an index published by the European Association of Venture Capital which encompasses diverse fiscal and legal variables, such as the tax rate on capital gains or existing restrictions on investment. These authors found that the index had a significant impact on the volume of funds raised, so that the more favorable the environment for investors, the higher the volume of funds provided. This at the same time facilitates the creation of venture capital funds.

As has been mentioned, the aim of the present work is to analyze the impact of legal and tax regulations on the amount of funds raised by PEIs. Although this issue has been addressed in previous papers, most face several limitations. Bygrave and Timmons (1985) use a too-limited sample, which reduces the validity of the findings obtained. Poterba (1989) relies on a descriptive rather than an empirical approach. Gompers and Lerner (1998) presented a suitable methodology, but their results are related to the US market. Thus, it is of interest to compare whether the factors are relevant in less developed markets.

As far as more recent work is concerned, in the case of Armour and Cummings (2004), various limitations can be cited that the authors themselves recognise. Firstly, the use of aggregate data does not enable certain information available in individual transactions to be recorded. Secondly, the index used by these authors does not vary over time for the sample period considered, so it cannot be predicted how a change in that environment affects funds raised. Thirdly, the use of the index does not allow the registering that different variables in particular, such as the tax rate on capital gains, have on funds raised, since their effect is diluted with the rest of the variables included in the index.

Because of all the above, the contribution made by this work centres on different aspects. On the one hand, it permits the effect of legal and tax legal environment on a developing market to be analyzed. Likewise, the use of individual data enables certain information to be recorded which is not present in articles based on aggregate data. Moreover, the use of the information

corresponding to practically all the population of PEIs in Spain, makes the findings obtained more robust. Finally, it makes it possible to register, in contrast with the use of an index which records all the fiscal and environmental information, the isolated effect of the tax rate on capital gains or the effect of the legal environment on funds committed by investors to individual PEIs.

2.2. Legal and fiscal framework in Spain

Private equity involves the participation of groups of investors, who accumulate resources provided by institutional, industrial and private investors in non-quoted firms. This circumstance gives rise to the appearance of double taxation problems which can constitute a barrier for the final investor, limiting his interest in getting involved in this financial activity which has such positive effects on the growth of investee firms (Alemany and Martí, 2005).

This problem has been tackled in other countries in two ways. In Anglo-Saxon countries, there does not usually exist any specific regulation, but the activity develops through entities, known as Limited Partnerships, which are fiscally transparent. Each participant is attributed a certain income, and he pays tax in accordance with his tax system, either personal or company, on imputed income. Tax is only levied at that time and only to the final investor. Moreover, it may happen that the shares in a given portfolio are not sold, but distributed among limited partners. This action does not give rise to tax payments until the latter sell the shares they have received. In countries with a non-Anglo-Saxon legal tradition the fiscal transparency approach may come up against greater barriers, and there is a tendency to introduce tax systems which limit or eliminate double taxation. This is the case of Spanish legislation.

The first specific legislation on venture capital and private equity activity is recorded in articles 12 to 20 of the Royal Decree-Law 1/1986 of March 14, on urgent administrative, financial, fiscal and labor measures. Firstly, it must be mentioned that the placement was not of the best, since it was mixed with a series of short-term economic policy measures. It must not be forgotten that investors would be affected by changes in legislation in the medium term, when they were already tied to an illiquid activity for long periods. Also, the original legislation was loaded with errors and omissions which forced repeated changes in the following years, thus giving a larger image of legal uncertainty[1].

In this legislation, a rigid system of coefficients was laid down and meeting them was incompatible with the wide range of investments that can be made in unquoted firms. It is important to stress that there is a wide range of

[1] Of the nine articles making up the original legislation, five were modified, some on several occasions, one was abolished and the other, a mistaken one, was non-operative.

investments, from small minority early-stage investments in technology-based firms, to the buyout of firms in traditional sectors to provide liquidity to the original shareholders. What is more, the reduction of taxation on capital gains was bell-shaped with changing reductions, according to the period during which the investment was held, between zero and 99 per 100. Given that the divestment time cannot be controlled as it can be in investments in quoted firms, this approach limited the interest of the fiscal incentive which, moreover, had to offset a rigid and badly-planned system of coefficients applicable to qualify a particular investment as benefiting from the fiscal reduction. Consequently, the number of entities interested in availing themselves of legislation subject to these snags was very small.

The passing of Law 1/1999 of January 5 meant a radical change insofar as it tried to achieve the effective reduction of double taxation, and gave clear signals of long-term stability. The fiscal advantages offered included the 100 per 100 deduction of dividends received from investee firms, regardless of the percentage owned, as well as 99 per 100 reduction of capital gains obtained in the sale of computable stakes, while admitting long enough stockholding periods. From another viewpoint, the *Comision Nacional del Mercado de Valores* (National Stock Market Commission) was set up as the supervisory institution, thus establishing a control system offering greater guarantees to those providing funds in a private investment activity.

With Law 25/2005 of November 24, the basics of Law 1/1999 were maintained, while complementing and unifying some subsequent modifications. As well as simplifying the processes for creating entities, the benefits to funds of funds and operations of exclusion from the stock market were extended.

Regarding taxation of capital gains in the personal income tax, it is expected to have an effect on investors, since a reduction in the tax rate increases expected profitability from capital gains obtained in private equity investments. What is not so clear is its impact on fundraising, since fund providers are subject to Corporation Tax, in the case of local investors, or to tax regulations applicable to non-residents, in the case of international investors. Tax treatment of capital gains has changed greatly over time, from situations akin to the treatment of ordinary income it has evolved to a system of exemptions depending upon how long the investment is maintained. In 1997 it changed from a variable taxation system to a flat rate, initially 20 per 100, and was then reduced to 18 per 100 and afterwards to 15 per 100. With the new Personal Income Tax Law the flat rate applicable to capital gains is set at 18 per 100 from 2007.

3. Data and Methodology

3.1 Data

The paper uses data on fundraising activity by all the PEIs active in Spain in the period 1991-2005. To determine the population to be studied the definition of Law 5/2005 was applied. This means investment in any firm not quoted on the stock market or, if quoted, if the object of the acquisition is to exclude it. Altogether, 154 PEIs were identified in the period analyzed. Of these institutions 19 were omitted since they were operating with pan-European funds, of which six began their activity in 2005. They were excluded because they could cause distortion in the analysis, since the aim is to study the effect that both the Spanish fiscal policy and the legal environment exert on fundraising from the national viewpoint. The funds managed by these private equity houses were raised in other countries and subject to different legislation. Thus, the population under study rose to 135 entities.

It was possible to obtain relevant information of 133 entities for the period analyzed. But the analysis also implies not considering funds raised by PEIs created in 2005, because the use of lags is necessary in certain variables in the empirical analysis. Therefore, the final sample was 123, after the exclusion of 10 private equity organizations that raised funds for the first time in that year.

The source of information of the variables related to venture capital activity is the database of the Spanish Private Equiy & Venture Capital Association (ASCRI), produced since 1985 in collaboration with one of the authors. For the rest of the variables used in the analysis and which are mentioned in subsection 3.3, the sources are as follows. i) Growth of Gross Domestic Product (henceforth GDP): OECD World Economic Outlook Database; ii) Tax rate on Capital Gains: own elaboration based on the Laws on Personal Income Tax and its modifications; iii) Stock market return: Annual Variation on the General Index of the Madrid Stock Exchange, iv) Stock market capitalization: EUROSTAT Monetary and Financial Indicators; v) Long-term interest rates: 10- year Public Debt, taken from the OECD Economic Outlook.

3.2 Methodology.

Given that data are available for a sample of individuals during a period of time, the study uses the panel data methodology (Arellano and Boyer, 1990). Since the aim is to study the effect of fiscal and legal changes on new venture capital fundraising, the methodology must take into account the fact that the dependent variable often takes value zero since it is common not to raise funds every year. To consider this circumstance there are two different approaches. The first approach consists of considering that the data are censored, so that

only values above a certain value (zero in this case) will be observed. In this context, the Tobit model (Tobin, 1958) also known as Tobit model type I (Amemiya, 1985) should be used.

But if the presence of zeros is due to the very nature of the data, then the correct approach is to model the decision-making process which leads to the appearance of zeros (Maddala , 1992). This is the case in new fundraising, since the possibility of raising negative funds does not exist. Consequently, there arises the problem of sample selection bias, which leads to inconsistency in the estimates stemming from the standard regression. The model to be considered in this situation is the Tobit type II (Amemiya, 1985), which is a sample selection model made up of two equations: selection equation and main equation:

$$d_{it}^{*} = z_{it}^{'}\gamma + v_i + \upsilon_{it} \qquad d_{it} = \begin{cases} 1 & si \quad d_{it}^{*} > 0 \\ 0 & si \quad d_{it}^{*} \le 0 \end{cases}$$

$$y_{it}^{*} = x_{it}^{'}\beta + \eta_i + \varepsilon_{it} \qquad y_{it} = y_{it}^{*} \times d_{it}$$

This is a more general model than the Tobit model type I, which allows the data-generating process to be different for zero values and for positive values. In the selection equation, d_{it} indicates whether a PEI has raised funds or not in a given year, whereas in the main equation y_{it} denotes the volume of funds raised at that time, and d_{it}^{*} and y_{it}^{*} represent latent variables. The terms v_i and η_i indicate the specific individual effects of each PEI, which are not observable and which are assumed to be constant in time for each entity. υ_{it} and ε_{it} represent zero average residuals with variance $\sigma_{\upsilon_{it}}^2$ and $\sigma_{\varepsilon_{it}}^2$, respectively. The terms v_i and υ_{it} are orthogonal between each other and follow a normal distribution with mean zero and variances σ_v and $\sigma_\upsilon = 1$, respectively. Likewise, the terms η_i and ε_{it} are also orthogonal between each other and normally distributed. Furthermore, the terms v_i and η_i can be correlated, with covariance $\sigma_{v\eta}$. In a similar way, the covariance between υ_{it} and ε_{it} is given by $\sigma_{\upsilon\varepsilon}$. Finally, it is assumed that the distribution of the errors of the selection and main equation are jointly normal. The selection equation is a random effects probit model and measures the impact of independent variables on the likelihood of raising funds. The main equation represents a random effects linear model and analyzes the influence of the independent variables on the volume of funds raised, so it only uses data of those entities raising funds.

The usual way of estimating this model consists of applying the technique proposed by Heckman (1979), which provides consistent estimates of the parameters of the main equation by means of a two-stage estimation procedure. In the first stage the selection equation is estimated and a new

regressor is generated which registers the conditional expectation of the error term. In the second stage, the main equation, to which the regressor obtained in the previous stage has been added, is estimated with the aim of achieving conditional expectation equal to zero in this equation. The extension of this methodology to the case of the panel data methodology was developed by different authors, such as Wooldridge (1995), Kyriazidou (1997) and Vella and Verbeek (1999), among others.

The methodology applied in this paper is an extension of Heckman's methodology and is based on the techniques developed by Verbeek and Nijman (1996) and Vella and Verbeek (1999) for panel data. The idea consists of eliminating the selection bias by means of incorporating two new regressors, namely $s1_i$ and $s2_{it}$, to the main equation. These two variables represent the expected values of η_i and ε_{it}, conditioned to the vector of all possible results of d_i. To consider that this methodology is more suitable than the one made with the Tobit technique, at least one of these two regressors should be significant.

Finally, it should be considered that problems of colinearity could arise if the same set of independent variables are used in the two equations, since the two new regressors included in the main equation would be a function, though a non-linear one, of the x variables introduced in the main equation. Therefore, the set of variables z should include at least one variable that is not included in x. This condition is known as exclusion restriction.

3.3 Specification of the selection and main equations

The selection equation measures the probability that a PEI will raise new funds at a given time. As regressors, the variables related to the tax and legal environment are considered. Also, two additional group of variables are included, since the literature has identified them as significant in explaining fundraising: i) variables related to venture capital activity and the diligence in the activity carried out by private equity managers ii) control variables linked to the evolution of the economy and the capital markets[2].

The selection equation would be the following:

PNewFunds = f(Legal and Tax Environment V., Private Equity V., Control V.)

[2] The description of the variables used in this paper and the source of the data can be found in Table A1 of the appendix.

Variables of the fiscal and legal environment

This group includes the variables proposed in this paper, in particular, two alternatives for measuring the effect of the variation in capital gains taxation and one to measure the effects of the introduction of a specific legislation on private equity.

- IMP: Maximum tax rate applicable to capital gains in Spain on Personal Income Tax. This rate becomes a flat rate one after 1997

- FlatRate: dummy variable which takes zero value till 1997 and value one after that date, as representative of the first year in which a flat rate tax was introduced.

Regarding the specific private equity regulation, Law99 is a dummy variable taking value zero before 1999, in which Law 1/1999 was introduced and one after 1999. The passing of this law meant a considerable improvement in the fiscal and legal treatment of venture capital in Spain.

Both variables change over time, but not for the different PEIs. For the reasons mentioned in the second section, the coefficient referring to the tax rate on capital gains should have a negative sign, whereas a positive coefficient is anticipated for the representative variable of the Law of Venture Capital.

Variables linked to venture capital activity

Regarding the variables related to the activity, Osnabrugge and Robinson (2001) find evidence of the need faced by private equity managers to signal how diligently they carry out their work. The most valuable information is the return obtained in closed funds, since the capacity to raise new funds depends on this (Rosenstein et al., 1990; Norton, 1995; Gompers and Lerner, 2001; Janney and Folta, 2003; Schmidt and Wahrenberg, 2003). However, the prolonged duration of the activity and the relative newness of venture capital and private equity outside the US, or the UK, limit the availability of this information for an important number of investors. Therefore, identifying the quality of private equity managers must include other references which might be valued by investors when allocating their resources.

Balboa and Martí (2005) analyze different variables signaling the quality of managers when there is a dearth of information on returns, and found evidence of the significant effect of the capacity for closing out new investments, in competition with other operators. The importance of this

variable was also indirectly noted by Bankman and Cole (2001). It must not be forgotten that PEIs charge important fees for the services they provide.

Investment activity also implies, however, the provision of value added activities to firms in the portfolio, so the time spent by venture capital operators in following up each of them is important (Norton, 1995; Sapienza et al, 1996; Schmidt, 2002; Kanniainen and Keuschnigg, 2002, 2003). To measure how intensive the attention is it would be necessary to list the number of investee firms which, hypothetically, were followed by each private equity manager, as is suggested by Osnabrugge and Robinson (2001).

Similarly, it is important to consider the management capacity of private equity managers to successfully sell their stakes in a reasonable period of time, since that enables the capital gains to be cashed in and, what is more, it is indicative of funds returning to investors. Nevertheless, the mechanism used to divest is also of importance (Ali-Yrkkö et al, 2003). It is accepted that the highest profitability is produced in divestments by means of initial public offerings[3] , or by trade sales, to either an industrial or financial investor (Cumming and MacIntosh, 2003). Among financial investors the role of the private equity houses themselves must be highlighted, as buyers of stakes in firms from other similar houses, in operations known as secondary buyouts, which are becoming a stable form of divestment in Europe, with interesting returns due to the levels of financial leverage used.

In addition to the references related to the diligence in the activity, there might be other indirect measures, such as the number of years of experience. Entities having the most experienced managers will be those raising more funds[4]. Indeed, in the US it is well known that around two-thirds of venture capital resources are raised by institutions with ten or more years experience (Venture Economics, 1987-2006). Finally, belonging to a representative association of the sector constitutes another important reference as these associations enjoy a code of conduct providing prestige for the activity carried on by its members (Balboa and Martí, 2005).

All these variables change over time and are different for each institution. It is expected that all of them, except the variable measuring the number of private equity managers per firm in the portfolio, will have a positive impact on fundraising.

[3] In this sense, Gompers (1996) points out that, with the aim of rapidly achieving a high reputation, newly- established operators tend to divest by means of going public in a time period which is less than the already established ones.

[4] In the case of Spain, this variable could perhaps not have a very representative role due to the circumstance of public entities being those whose teams are the most longstanding and, nonetheless, are the ones whose role in new fundraising is the most marginal (Martí, 2002). .

Finally, it should also be considered that fundraising will also be justified by the shortage of available resources to deal with new investments (CAPDISP). Given the long period necessary for investing the resources of a PEIs, estimated as about three years (Gladstone, 1988), the availability of large amounts of funds awaiting investment limits the justification for raising further resources.

Control variables

As well as the variables linked to characteristics of the activity carried out, or other observable characteristics of the private equity organizations analyzed, it is necessary to incorporate other variables considered in the literature for their effect on fundraising. The first is GDP growth for the previous year (CPIB) as a reference of the evolution of the economy over time, in line with Gompers and Lerner (1998). A positive effect is expected.

Secondly, private equity activity is linked in different ways to the stock market. On the one hand, it usually constitutes the main divestment mechanism for the stakes of venture capital institutions in countries like the US, so a positive relation is expected between the evolution of the stock market and new fundraising (Gompers and Lerner, 1998). However, private equity is an asset class competing with investment on the Stock Exchange in the portfolio allocation strategy of institutional investors, so that a positive evolution in the market would imply a greater attraction of resources, and thus impinge negatively on the allocation of resources to venture capital. In the case of Spain, given the scarce weight the Stock Exchange has had up to now as a divestment mechanism, (Martí, 2002), the second argument has more justification. As alternative measurements of this effect the following variables will be used:

- SR: Annual return of the General Index of the Madrid Stock Exchange in the previous year.

- MarkCap: Market capitalization in the previous year, in thousands of euros at constant 2005 values.

Another reference also proposed by Gompers and Lerner (1998) is the effect of short-term interest rates. In their work these authors introduce short-term interest rates, arguing that a rise in rates would make venture capital more interesting for firms, as a form of financing, thus having an indirect positive effect on fundraising. But debt also competes with private equity as an asset class, so an increase in interest rates could imply that this instrument becomes more attractive compared to private equity, leading to an expected negative effect. Unlike what Gompers and Lerner proposed (1998), in this work, 10 year

interest rates will be considered in this paper, because of their greater homogeneity of the time period with private equity investment, as an asset class, and due to their involvement as a stable financing formula, as an alternative to funding via own resources which venture capital involves.

Main equation

In estimating the main equation, the endogenous variable (NFOND) represents the volume of funds raised by the PEI in the period "t" in thousands of euros at constant 2005 prices. Regarding the exogenous variables, one of the variables considered in the first stage must be dropped to avoid the colinearity problem. In this sense, the variable CAPDISP is excluded, since its presence can only be justified in order to determine the launching of a new fundraising process if the volume of funds awaiting investment is not high.

3.4 Descriptive analysis

The endogenous variable measures funds raised by each PEI in each of the years of the period analyzed .As has been mentioned in sections 3.2 and 3.3, the fundraising process is not developed every year, nor can many of the institutions repeat it very readily. In Table 1 a descriptive analysis is available, in constant 2005 euros, for those entities which did raise funds in a given year. In Panel A data are provided of the number of institutions which managed to raise fresh funds in each of the years, with 2003 and 2005 being the years that registered the highest number of entities raising new resources. In 2000, the largest closed fund in this activity in Spain was registered, with a value of 750 million euros, and this figure affected the average and the standard deviation of that year. In the whole period analyzed 391 fund increases took place, with the average value rising to 26.6 million euros.

However, given the high variability[5] of the amounts raised by PEIs, which is caused by the wide difference in the sizes of organizations managing between 1.2 and 900 million euros, it is worth paying more attention to the median. In this case, the highest values are registered in the years 1998 and 2000, with the reference for the whole period being 6.2 million euros.

In Panel B information is recorded on the number of new funds raised as well as the average time elapsing between two processes for each institution. The extreme values observed vary from a maximum of 11 to a minimum of 0 processes, with the sample average being 3 processes. The time elapsed between two fundraising processes rose to 3.1 years.

[5] The minimum values registered very small amounts because in some cases they reflect retained profits of small entities and unlimited duration, which are also computed as funds raised for investment.

Insert Table 1 around here

Table 2 presents the values of the maximum tax rate levied on capital gains, for each of the years. Likewise, the evolution over time of the annual returns of assets competing with private equity, such as stock market returns and interest rates, and stock market capitalization is registered. Information is also provided on the number of fundraising processes and the total amount of resources raised each year by the PEIs considered in this study.

Insert Table 2 around here

In Table 3 there is a breakdown of investment activity developed by PEIs in the different years. As far as the volume of investments made is concerned, in Panel A it is shown that an annual average of 82.7 per 100 of the PEIs invested during the period analyzed, with the amounts invested per operator and year, in constant 2005 money, varying between a minimum of 2,000 euros and a maximum of 485 million euros. The median amount invested per institution and year rose to 2.5 million in constant 2005 euros. Panel B reflects the number of investment managers of PEIs, and here the noteworthy fact is that the average value stood at 5.6, with a maximum of 30, (corresponding to a government-sponsored PEI) and a minimum of 1 person. Similarly, the number of investee firms corresponding to each of the professionals was analyzed to control the capacity of adding value to portfolio firms. As can be appreciated, this average value was around 3 investee firms for each professional in all the years, but with considerable dispersion among different PEIs.

Insert table 3

In Table 4 information is recorded regarding divestments, at cost price, made by each PEI in the period considered. Specifically, valuations were made of each one who carried out a divestment and, among them, those who divested through initial public offerings, trade sales or sales to another private equity body, since these are the ones that produce the best returns. The existence of difficulties in the divestment process is clearly seen since these exit routes only account for 43.6 per 100 of the total at cost price, with maximum values higher than 60 per 100 in 1997 and 2000. The remaining divestments correspond to owner's buyback, write-offs and other forms of divestment, such as share exchanges or asset liquidation. The average amount recorded per body was 7.9 million euros at constant 2005 values, the median being 1.8 million euros.

Finally, Chart 1 shows the evolution of funds raised, in aggregate terms, with each of the variables considered in the analysis. It can be observed that the

rise in the tax rate produced in 1993 coincided with a lower amount of fundraising for three of the four years in which this rate was in force. In 1997, there was a drop in the tax rate and this lasted for four years, coinciding with an increase in funds raised. Nonetheless, the steady falls in the tax rate occurring since 2001 did not coincide with increases in funds raised till 2003. Furthermore, it is observed that the evolution of stock market returns and long term interest rates are not closely linked to the aggregate amount of funds raised, whereas the latter seem to more related to stock market capitalization and aggregate private equity investments.

Insert Graph 1 around here

In the Appendix the correlation matrix between the different proposed variables is presented. As can be seen, there exists a high correlation between two of the variables considered, the tax rates applied to capital gains and long-term interest rates. With the aim of avoiding the existence of multicolinearity, regressions were made of each of these variables with regard to the rest, and the presence of this problem was identified. Given the paper's orientation, the variable representing interest rates is omitted in the analysis carried out.

4. Results

In Table 5 the results of the estimation based on the Heckman methodology are presented. In the first stage, the random effects probit model, estimated by maximum likelihood, study the effects of the variables considered on the probability of a PEI raising new funds in a particular year. The two specifications introduced differ in the variable used to measure the taxation of capital gains: either a variable which registers the treatment of capital gains at a marginal rate or, alternatively, a dummy variable which takes value one from the year in which tax levy on capital gains went from variable to fixed onwards, are introduced.

The results of both specifications are the same, in the first stage, indicating that neither the alteration in the tax rate applied to capital gains nor the passing of legislation fomenting the creation of PEIs has a significant effect on the likelihood of raising a new fund. With regard to taxation of capital gains, the result coincides with that obtained in the US by Gompers and Lerner (1998), who used the Heckman methodology in this context. The entities belonging to the national private equity association (ASCRI) and those which do not have high volumes of funds awaiting investment have a greater likelihood of raising funds.

In order to correct the selection bias the second stage analyzes the effect of regulatory changes on the volume of funds raised by individual PEIs. Several

specific aspects of the latter and the general evolution of the economy and capital markets are also introduced. In this case, the estimation is made considering the existence of random effects, but only using data from those private equity organizations that did raise new funds.

No evidence can be found of the effect of changes in the taxation of capital gains on the volume of funds raised by PEIs. This coincides with Poterba (1989), for whom this variable should have an impact on venture capital activity, but rather on the demand side than that of the supply side. Nevertheless, Gompers and Lerner (1998) did find evidence of a negative effect.

Furthermore, the findings obtained show that the specific 1999 legislation had a significant effect on the volume of new funds raised. This finding is important for the legislator, since it shows the relevance of a measure which aims to increase the amount of stable financial resources available for investment in unquoted firms.

The findings obtained also confirm the importance of references concerning activity carried out by private equity managers. The variables related to activity developed are significant and the investment-related ones, value provision and stake divestment have the expected sign, according to the results of Balboa and Martí (2005). With a positive sign, it should be stressed that operators making a higher volume of investments in the previous period are those raising more funds. In this way, investors value both the management ability to operate with a higher volume of resources, bearing in mind how complex this financial activity is, and the skill in closing out transactions in unquoted firms. Moreover, as expected, the ratio between the number of investee firms per investment manager shows a negative impact, as a sign of attention given to firms in the portfolio. It must be highlighted that the supply of value added activities to firms in the portfolio is a fundamental aspect of this activity, and contributes to the increase both in the likelihood of survival of financed firms and the final return obtained in the investment.

Regarding the amounts divested through the above-mentioned mechanisms, the estimated coefficient is positive, confirming investors' interest in handing over more funds to those institutions able to divest their stakes through the procedures deemed most lucrative. This finding coincides with Gompers and Lerner (1998) and Jeng and Wells (2000), though in these two works the reference is limited to divestments by means of placement on the stock market. Given the limited number of operations of this type occurring in Spain three different mechanisms which mean higher returns for investors are jointly considered.

There is no evidence of the effect of operators' experience on the volume of funds raised. This finding is contrary to the one obtained by Gompers and Lerner (1998) for the case of the US. This circumstance can be explained by the less developed state of the Spanish market, in which a good number of operators without previous experience joined the sector in recent years; and by the slight weight public operators have at this moment in terms of fundraising, which nevertheless are the oldest. On the contrary, belonging to an association in the sector does have a significant influence on the volume of funds raised. Thus, PEIs operating under the code of conduct inspired by the Spanish association, ASCRI, are those raising most funds from investors.

As for the control variables introduced, it is found that real GDP growth has a positive impact on funds raised, albeit with a low level of significance. This is not in line with Gompers and Lerner (1998), since, although in their study with aggregate data they did find a positive significant relationship between both variables, it disappears when they use individual data, like those used in this work. With regard to other control variables linking venture capital or private equity to the capital markets, stock exchange return is not significant, confirming the intuitive appreciation of Graph 1. Therefore, we use stock market capitalization as an alternative variable, which incorporates price and volume, with the coefficient sign being negative and significant. In this way, confirmation is given of the explanation regarding private equity as an asset class competing with investment on the stock exchange, above the one concerning the possible positive effect on expected return from initial public offerings if the market is more receptive to placements of investee firms. The small number of these operations in Spain anticipated this finding.

Finally, regarding the suitability of the methodology proposed by Heckman (1979), Verbeek and Nijman (1996) and Vella and Verbeek (1999), the two added regressors are significant in the second stage, confirming the suitability of correcting the selection bias.

5. Discussion and conclusions

In recent years, a growing interest in private equity markets has been noticed, both as a result of their positive effect on the economy and on the firms receiving it. Due to this, several measures with the initiative of public authorities have been carried out in many countries with the purpose of strengthening this market. However, there are few works devoted to analyzing the effects of the various measures adopted. The main contribution of this work consists of analyzing the efficacy of specific regulatory changes on new fundraising, but from the viewpoint of the very same main actors in this process, namely individual PEIs.

Specifically, the impact of two measures has been analyzed. On the one hand, the impact of taxation on capital gains is studied. Its effect on private equity activity has hardly been studied in the literature, and most papers face some significant limitations. Among these, we would quote the use of an index which jointly registers different fiscal and legal aspects simultaneously (Armour and Cummings, 2004); or the use of country-level aggregate data that does not enable certain characteristics, which are available in individual information to be analyzed. On the other hand, a regulation favoring private equity activity, which makes it possible, among other things, to eliminate double taxation of the investment vehicles used, and which provides confidence to investors as well, is a spur to the latter providing funds for this market. For all of these reasons, both measures are expected to contribute to developing private equity markets and financing a larger number of firms with growth prospects.

In this work the aim is to contribute to overcoming these limitations and to offer evidence for a country in which private equity market is still developing, namely Spain. The empirical work is supported by a sample covering almost all the active PEIs in Spain from 1991 to 2005.

In the process of analyzing the effect of both measures on the volume of funds raised, it considered that the literature has identified the impact exerted by other variables on the variable analyzed. Among them we could mention the returns offered by other assets with which private equity competes, or other variables geared to evaluating how diligently private equity managers perform their duties. The methodology used in the empirical analysis is the one proposed by Heckman (1979) but extended to the case of panel data. This methodology is the suitable one due to the nature of the endogenous variable, which registers a high number of zero values in a natural way. But, moreover, it fits very well with the real decision process of private equity organizations, which takes place in two stages. First, they must decide whether to launch a fund or not and, secondly, if they decide to do so, what level of funds to raise.

The findings show that the variables related to taxation of capital gains in Personal Income Tax do not seem important to investors. This finding coincides with the one anticipated by Poterba (1989), when he showed that the effect of this variable is seen mainly through demand by potential entrepreneurs, and its effect on supply is very indirect due to the small number of fund providers subject to personal income tax. However, the finding is contrary to the evidence provided by Gompers and Lerner (1998) in the case of the US.

Furthermore, there is evidence of the existence of a significant effect of the passing of specific legislation effectively limiting double taxation of returns,

a problem that has been solved in other asset classes, as is the case of mutual funds. Thus, this paper empirically verifies that the legislation introduced to increase the supply of private equity resources has been a success, allowing a greater flow of funds to facilitate funding for the growth of firms and liquidity for unquoted firms wishing to sell their stakes.

As has also been mentioned, in the model the effect on the results of the introduction of other variables previously considered in the literature has been controlled. Since this is an analysis from the individual viewpoint, it is necessary to include references as to diligence in developing different aspects of the cycle of investment-value-added-divestment, in the sense recorded by Balboa and Martí (2005). As well as confirming the findings, the positive value of the coefficient attributable to investments has implications for economic authorities, since it is indicating that ability to raise new funds depends on the existence of enough investment opportunities. This implies the need to analyze what are the determining factors of investment, so that an increase in venture capital activity can be favored if demand is reinforced by firms and entrepreneurs. In similar fashion, the findings obtained for divestments by placement on the stock exchange, trade sales to industrial buyers or sales to other PEI must be looked at. The difficulty involved in the exit of a temporary investor, such as the PEI, implies a lower capacity for new fundraising, as in Gompers and Lerner (1998).

In previous works, references to the state of the economy and capital markets were considered. Unlike what has been noticed in the US, the steady progress of stock markets has a negative effect on private equity fundraising. This finding provides evidence on the alternative explanation of the relationship between the stock markets and the private equity markets. From the point of view of the institutional investor, who has to assign his resources among different assets classes, the healthy state of a market means that it is more attractive in relative terms, compared to the market or markets with which he compares it. This leads to greater weight on the part of the former in the resulting portfolio. This effect has greater weight than the consideration of the stock market as an exit route for his stockholdings, in the case of Spain due to the minor importance of initial public offerings as a natural divestment route.

The evidence provided by this work centers on the Spanish private equity market. However, the conclusions could be extended to other countries where the problem of the double taxation of final investment returns has not been satisfactorily solved. Similarly, the effect that investment has on new fundraising can be extrapolated, since fundraising is justified if there are enough investment opportunities. Finally, regarding the special link between the stock market and the private equity market, it would be interesting to verify

whether the negative effect identified in Spain is also shown in other countries of our area.

Appendix

Table A1

Description of variables

Independent Variables	Description	Source
$Nfund_{it}$	New funds raised by a given private equity institution in year "t", in thousand 2005 euros.	5
IMP_t	Marginal tax rate applied to capital gains in the Personal Income Tax.	1
$FlatRate_t$	Dummy: 1 from 1997 onwards, when the capital gains tax switched from variable taxation to a flat rate.	1
$LAW99_t$	Dummy: 1 from 1999 onwards, when the new specific legislation on private equity was approved.	2
$INVi_t$	Amount invested by a given private equity institution in year "t", in thousand 2005 euros.	5
$RATIO_{it}$	Ratio between the number of portfolio companies and the number of investment managers in the same year.	5
ITS_{it}	Amount divested through initial public offering, trade sale or secondary buyout, valued at cost, by a given private equity institution in year "t", in thousand 2005 euros.	5
$CAPDISP_{it}$	Capital pending allocation in funds managed by a given private equity institution in year "t", in thousand 2005 euros.	5
EXP_{it}	Number of years of experience of managers from the private equity firm.	5
$ASCRI_{it}$	Dummy: 1 if the private equity institution belongs to the Spanish Private Equity Association (ASCRI).	5
$GDPG_t$	Real GDP growth from "t-1" to "t".	3
$MarkCap_t$	Spanish stock market capitalization in year "t", in thousand 2005 euros.	4
SR_t	Stock market return of the Madrid Stock Exchange General Index (IGBM)	3
INT_t	Long term interest rates in year "t".	3

(1) Personal Income Tax Laws.

(2) Own elaboration.

(3) OECD: Main Economic Indicators

(4) EUROSTAT: Monetary and Financial Indicators

(5) ASCRI

Table A2

Correlation coefficients

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.00												
2	-0.73[a]	1.00											
3	0.70[a]	-0.93[a]	1.00										
4	0.17[a]	-0.16[a]	0.15[a]	1.00									
5	-0.05[c]	0.06[c]	-0.07[b]	-0.10a	1.00								
6	0.06[C]	-0.07[b]	0.07[b]	0.14a	-0.07[b]	1.00							
7	0.09[a]	-0.09[a]	0.10[a]	0.34a	-0.20[a]	0.27[a]	1.00						
8	0.08[a]	-0.17[a]	0.17[a]	0.09a	0.38[a]	0.05	0.09[a]	1.00					
9	0.08[a]	-0.10[a]	0.11[a]	0.05	0.14[a]	0.08[a]	0.13[a]	0.28[a]	1.00				
10	0.19[a]	-0.42[a]	0.53[a]	0.09a	0.01	0.06[c]	0.04	0.19[a]	0.07[b]	1.00			
11	-0.31[a]	-0.12[a]	0.13[a]	0.02	0.00	0.07[b]	-0.01	0.07[b]	-0.02	0.34[a]	1.00		
12	0.85[a]	-0.86[a]	0.85[a]	0.21a	-0.06[c]	0.11[a]	0.09[a]	0.14[a]	0.08[a]	0.46[a]	0.07[b]	1.00	
13	-0.74[a]	0.95[a]	-0.95[a]	-0.17a	0.07[b]	-0.08[a]	-0.09[a]	-0.17[a]	-0.10[a]	-0.48	-0.18[a]	-0.92[a]	1.00

(1) $LAW99_t$ = Dummy: 1 from 1999 onwards, when the new specific legislation on private equity was approved. (2) IMP_t = Marginal tax rate applied to capital gains in the Personal Income Tax. (3) $FlatRate_t$ = Dummy: 1 from 1997 onwards, when the capital gains tax switched from variable taxation to a flat rate. (4) $INVi_t$ = Amount invested by a given private equity institution in year "t", in thousand 2005 euros. (5) $RATIO_{it}$ = Ratio between the number of portfolio companies and the number of investments managers in the same year. (6) ITS_{it} = Amount divested through initial public offering, trade sale or secondary buyout, valued at cost, by a given private equity institution in year "t", in thousand 2005 euros. (7) $CAPDISP_{it}$ = Capital pending allocation in funds managed by a given private equity institution in year "t", in thousand 2005 euros. (8) EXP_{it} = Number of years of experience of managers from the private equity firm. (9) $ASCRI_{it}$ = Dummy: 1 if the private equity institution belongs to the Spanish Private Equity Association (ASCRI). (10) $GDPG_t$ = Real GDP growth from "t-1" to "t". (11) SR_t = Stock market return of the Madrid Stock Exchange General Index (IGBM). (12) $MarkCap_t$ = Spanish stock market capitalization in year "t", in thousand 2005 euros. (13) INT_t = Long term interest rates in year "t".

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Table 1. Data related to private equity fundraising in Spain

Panel A. – Private equity institutions (PEIs) and their fundraising efforts

Year	PEIs	PEIs that raised funds	% that raised	Mean	Median	Std. Dev.	Max	Min
1991	45	22	48,9%	9.743	3.053	17.300	59.708	29
1992	46	17	37,0%	11.325	2.918	17.628	66.213	18
1993	54	26	48,1%	13.482	3.085	29.627	133.490	18
1994	54	12	22,2%	10.489	7.533	10.485	41.781	1.046
1995	54	15	27,8%	8.980	3.199	19.338	79.965	160
1996	53	17	32,1%	5.762	1.058	9.047	26.779	1
1997	51	19	37,3%	24.640	2.204	51.942	189.689	29
1998	56	19	33,9%	40.622	22.308	43.885	141.284	228
1999	56	25	44,6%	18.571	7.377	28.791	147.178	15
2000	67	38	56,7%	67.259	17.533	138.357	736.399	14
2001	78	32	41,0%	27.262	4.247	50.753	242.660	339
2002	85	35	41,2%	17.291	6.570	23.140	109.506	211
2003	93	40	43,0%	25.320	5.316	48.342	213.076	53
2004	99	34	34,3%	39.517	5.686	87.675	465.229	310
2005	109	40	36,7%	30.371	12.663	49.648	250.000	72
1991-2005			**39,1%**	**26.662**	**6.203**	**62.780**	**736.399**	**1**
Observations	**1000**	**391**						

Amounts raised in thousand of constant euros (base 2005).

Panel B. Number of fundraising efforts and time elapsed

	Mean	Std. Dev.	Max	Min
Number of new funds or increases in existing funds	3,0	2,4	11	0
Time elapsed between fundraising efforts	3,1	2,2	15	1

Source: Calculations made on data from ASCRI.

Table 2. Data on variables related to the legal, economic and institutional environment

Year	Marginal tax rate on capital gains	Real GDP growth	Stock market return	Market Capita-lization*	Long term interest rates	Number of new funds	New funds raised*
1991	56,00%	2,54%	0,38%	183.686	12,36%	22	214
1992	35,34%	0,93%	-11,83%	143.047	11,70%	17	193
1993	37,34%	-1,03%	14,72%	152.864	10,20%	26	351
1994	37,34%	2,38%	18,11%	177.140	10,00%	12	126
1995	37,34%	2,76%	-6,07%	197.609	11,30%	15	135
1996	37,34%	2,44%	22,11%	249.836	8,70%	17	98
1997	20,00%	4,03%	52,65%	333.201	6,40%	19	468
1998	20,00%	4,35%	46,68%	423.946	4,80%	19	772
1999	20,00%	4,20%	10,45%	521.445	4,70%	25	464
2000	20,00%	4,18%	12,61%	628.337	5,50%	38	2.556
2001	18,00%	2,67%	-15,20%	598.301	5,10%	32	872
2002	18,00%	2,01%	-14,74%	486.695	5,00%	35	605
2003	15,00%	3,05%	-3,18%	613.414	4,13%	40	1.013
2004	15,00%	3,24%	22,00%	715.471	4,10%	34	1.344
2005	15,00%	3,53%	23,30%	813.810	3,40%	40	1.215
Average	**26,78%**	**2,75%**	**11,47%**	**415.920**	**7,16%**	**26**	**695**
Median	**20,00%**	**2,76%**	**12,61%**	**423.946**	**5,50%**	**25**	**468**
Std. Dev.	**12,33%**	**1,41%**	**20,60%**	**226.517**	**3,17%**	**10**	**655**
Max	**56,00%**	**4,35%**	**52,65%**	**813.810**	**12,36%**	**40**	**2.556**
Min	**15,00%**	**-1,03%**	**-15,20%**	**143.047**	**3,40%**	**12**	**98**

*In Million constant euros (Base 2005)

Source: Marginal tax rate on capital gains: Personal Income Tax laws; Real GDP growth: OECD Main Economic Indicators; Stock market return: OECD Main Economic Indicators; Market capitalization: EUROSTAT: Monetary and Financial Indicators; Long term interest rates: OECD Main Economic Indicators; New funds raised: ASCRI.

Table 3. Data related to private equity investment activity in Spain

Panel A. - Private equity institutions (PEIs) and their investment activity

Year	PEIs	PEIs that invested	% that invested	Mean	Median	Std. Dev.	Max	Min
1991	45	44	97,8%	4.720	1.470	11.397	74.699	4
1992	46	41	89,1%	4.060	1.806	8.243	51.151	110
1993	54	45	83,3%	2.787	1.194	5.268	28.979	57
1994	54	44	81,5%	3.157	1.451	3.915	13.945	8
1995	54	43	79,6%	4.618	1.810	7.856	44.332	81
1996	53	39	73,6%	6.088	1.275	12.904	66.406	15
1997	51	40	78,4%	7.330	1.535	14.426	72.082	2
1998	56	38	67,9%	6.000	2.574	9.175	48.922	4
1999	56	43	76,8%	12.866	6.433	19.837	104.937	89
2000	67	59	88,1%	16.392	4.479	29.648	162.415	15
2001	78	69	88,5%	14.943	3.243	30.863	175.066	47
2002	85	70	82,4%	11.674	4.231	23.957	156.102	119
2003	93	78	83,9%	16.039	2.983	32.778	206.684	43
2004	99	84	84,8%	15.244	3.226	54.402	485.139	55
2005	109	90	82,6%	13.084	4.345	26.738	166.561	35
1991-2005			**82,7%**	**10.488**	**2.535**	**27.442**	**485.139**	**2**
Observations	**1000**	**827**						

Amounts committed to portfolio firms in thousand of constant euros (base 2005).

Panel B. – Number of investment managers and ratio of portfolio firms per investment manager

	Investment managers per private equity institution				Ratio of portfolio firms per investment manager			
Year	Mean	Std. Dev.	Max	Min	Mean	Std. Dev.	Max	Min
1991	6,1	4,7	25	1	3,0	2,4	10,4	0,2
1992	5,2	3,2	16	1	3,4	2,3	10,0	0,6
1993	5,3	3,3	16	1	3,3	2,6	13,0	0,1
1994	5,2	3,5	17	1	3,2	2,2	12,5	0,7
1995	5,3	3,4	16	1	3,4	2,4	14,0	0,7
1996	5,6	3,2	16	1	3,4	2,1	12,0	0,2
1997	6,3	4,0	21	1	3,3	2,0	11,0	0,6
1998	6,4	4,2	21	1	2,9	1,6	8,0	0,4
1999	6,9	5,1	30	1	3,1	2,6	15,0	0,3
2000	6,0	3,4	18	1	2,8	2,0	8,4	0,1
2001	5,5	3,3	18	1	3,0	2,4	9,5	0,2
2002	5,4	3,4	17	1	3,0	2,3	9,5	0,2
2003	5,4	3,5	17	1	3,3	3,0	15,0	0,3
2004	5,5	3,5	17	1	3,5	3,6	20,0	0,2
2005	5,3	3,3	15	1	3,4	3,7	19,0	0,1
1991-2005	**5,6**	**3,7**	**30**	**1**	**3,2**	**2,7**	**20,0**	**0,1**

Source: Calculations made on data from ASCRI.

Table 4. Data related to divestments through initial public offering, trade sale or secondary buyout in Spain

Year	PEIs that divested	ITS	% ITS	Mean	Median	Std. Dev.	Max	Min
1991	22	10	45,5%	7.734	1.900	13.150	40.417	250
1992	27	7	25,9%	15.993	779	35.894	103.810	37
1993	31	16	51,6%	1.588	494	2.120	6.898	8
1994	33	11	33,3%	1.692	586	2.137	6.890	42
1995	33	12	36,4%	3.326	2.105	3.818	14.514	192
1996	35	17	48,6%	4.262	1.876	5.466	17.734	23
1997	34	21	61,8%	9.637	2.858	21.181	86.613	50
1998	40	15	37,5%	6.880	2.157	13.817	55.770	2
1999	38	17	44,7%	6.781	1.962	11.425	48.144	25
2000	39	24	61,5%	7.180	1.320	12.964	49.393	84
2001	43	18	41,9%	5.314	1.540	7.058	26.344	8
2002	44	15	34,1%	5.720	724	9.710	33.723	59
2003	53	17	32,1%	2.919	1.162	3.818	15.383	77
2004	54	25	46,3%	6.482	1.539	10.199	43.015	11
2005	68	34	50,0%	21.464	3.409	52.953	290.472	24
1991-2005			**43,6%**	**7.960**	**1.755**	**23.217**	**290.472**	**2**
Observations	**594**	**259**						

Amounts divested in thousand of 2005 constant euros.

ITS: Divested through initial public offering, trade sale or secondary buyout.

Source: Calculations made on data from ASCRI.

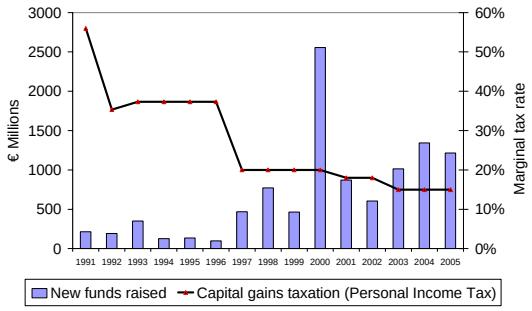
Table 5. Estimation of coefficients in two stages (Heckman, 1979)

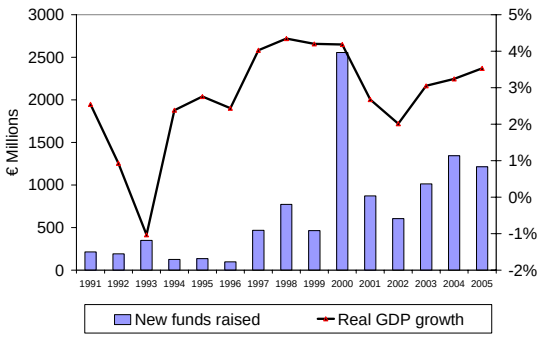
	Dependent Variable			
	Probability of raising a new fund *First stage (Probit)*		Amount of funds raised *Second stage (GLS)*	
Independent variables	*Specification 1*	*Specification 2*	*Specification 1*	*Specification 2*
IMP_{t-1}	0.2624	-	-19662.5300	-
	(0.8366)		(57748.8100)	
$FlatRate_{t-1}$	-	0.0060	-	19293.1300
		(0.2328)		(15497.3300)
$LAW99_{t-1}$	0.2570	0.2639	47113.6100[a]	48323.9400[a]
	(0.2550)	(0.2540)	(16986.3100)	(17028.2600)
INV_{it-1}	7.11E-7	7.39E-7	0.5565[a]	0.5727[a]
	(2.13E-6)	(2.13E-6)	(0.2107)	(0.2107)
$RATIO_{it-1}$	-0.0244	-0.0239	-4613.3430[a]	-4375.4220[b]
	(0.0241)	(0.0241)	(1776.1240)	(1779.5580)
ITS_{it-1}	-4.08E-7	-4.99E-7	2.8811[a]	2.7968[a]
	(7.67E-6)	(7.67E-6)	(0.7393)	(0.7420)
$CAPDISP_{it-1}$	-4.38E-6[a]	-4.39E-6[a]	-	-
	(1.61E-6)	(1.61E-6)		
EXP_{it}	0.0014	0.0008	252.2306	151.9674
	(0.0116)	(0.0116)	(784.8788)	(782.4395)
$ASCRI_{it}$	0.5753[a]	0.5737[a]	42843.9700[b]	44273.1800[b]
	(0.1427)	(0.1426)	(18240.9300)	(18162.0100)
$CPIB_{t-1}$	7.9513[c]	8.0151	422708.8000[c]	404764.5000[c]
	(4.7127)	(4.9185)	(226509.4000)	(226422.5000)
$MarkCap_{t-1}$	-8.67E-10	-1.02E-9	-1.22E-4[b]	-1.66E-4[a]
	(8.20E-10)	(8.20E-10)	(5.51E-5)	(6.22E-5)
$s1_i$	-	-	5969.1350[c]	6273.4050.[c]
			(3621.0310)	(3611.2790)
$s2_{it}$	-	-	42688.6200[b]	44550.4100[b]
			(19683.8100)	(19664.8400)
CONSTANT	-0.8284[c]	-0.7001[a]	-79442.1700	-87833.4400[c]
	(0.4465)	(0.2074)	(62254.5400)	(52129.6600)
Observation / PEIs	855 / 123	855 / 123	282 / 90	282 / 90
Log MV	-509.4900	-509.5389		
Prob > chi2			0.0000	0.0000

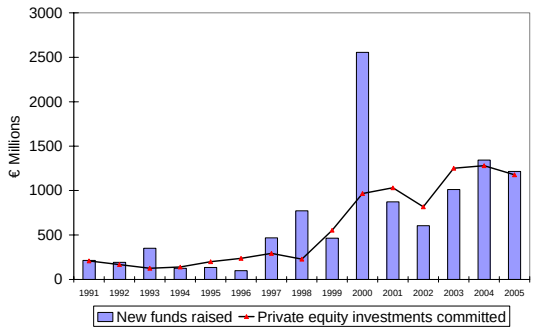
(a) = Significant at 1%, (b) = Significant at 5%, (c) = Significant at 10%. Standard errors in brakets.

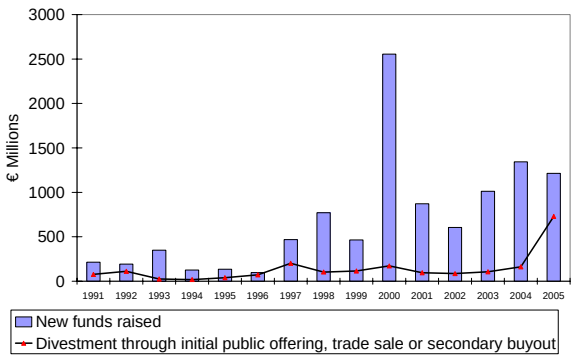
Endogenous variable: 1st stage: dummy (1: if a PEI raised funds in year "t"); 2nd stage: New funds raised by a given PEI in year "t" in thousand 2005 euros. Independent variables: IMP_t = Marginal tax rate applied to capital gains in the Personal Income Tax. $FlatRate_t$ = Dummy: 1 from 1997 onwards, when the capital gains tax switched from variable taxation to a flat rate. $LAW99_t$ = Dummy: 1 from 1999 onwards, when the new specific legislation on private equity was approved. $INVi_t$ = Amount invested by a given PEI in year "t", in thousand 2005 euros. $RATIO_{it}$ = Ratio between the number of portfolio companies and the number of investment managers in the same year. ITS_{it} = Amount divested through initial public offering, trade sale or secondary buyout, valued at cost, by a given PEI in year "t", in thousand 2005 euros. $CAPDISP_{it}$ = Capital pending allocation in funds managed by a given PEI in year "t", in thousand 2005 euros. EXP_{it} = Number of years of experience of managers from the private equity firm. $ASCRI_{it}$ = Dummy: 1 if the private equity institution belongs to the Spanish Private Equity Association (ASCRI). $GDPG_t$ = Real GDP growth from "t-1" to "t". $MarkCap_t$ = Spanish stock market capitalization in year "t", in thousand 2005 euros. $s1_i$, $s2_{it}$ = Additional regressors included in the second stage to correct the selection bias.

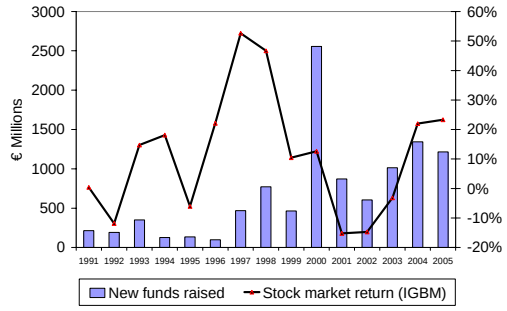
Chart 1. Evolution of new funds raised and other variables included in the model

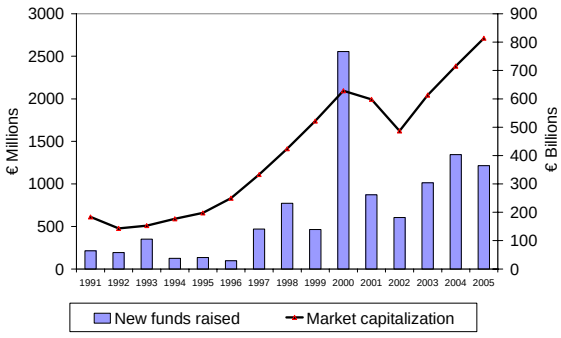


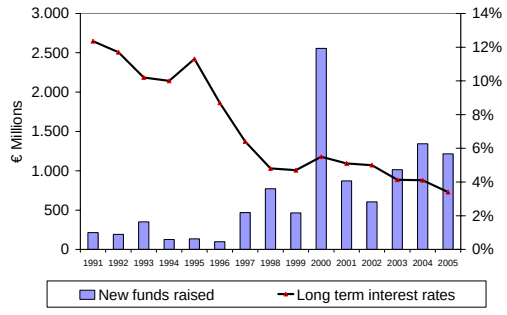












Notes:

- These figures do not include investment and divestment activity developed in Spain by pan-European funds.

- All amounts are in constant 2005 euros.

Source: i) Growth of Gross Domestic Product: OECD World Economic Outlook Database; ii) Tax rate on Capital Gains: own elaboration based on the Laws on Personal Income Tax and its modifications; iii) Stock market return: Annual Variation on the General Index of the Madrid Stock Exchange, iv) Stock market capitalization: EUROSTAT Monetary and Financial Indicators; v) Long-term interest rates: 10-year Public Debt, taken from the OECD Economic Outlook.