JEL classification: G12, G14, G23
Keywords: abnormal return, event-study methodology, manager characteristics, manager replacement, pension funds, performance

Manager Characteristics and Manager-Replacement: How Is Pension Fund Performance Affected?

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Abstract

Pension funds are professionally managed investment products designed to cover replacement mechanism in pension funds. We first examine possible determinants (raw return, excess return, risk and manager and fund characteristics) of manager replacement in a sample of Spanish pension funds. We also analyze the impact of manager replacement on funds' returns (raw and excess returns) and risk via an analysis of manager characteristics. Finally, we employ an event-study methodology to examine the capacity of new managers to generate positive abnormal returns. Our empirical results show that manager replacement is not motivated only by poor excess returns, but is also linked to manager characteristics. Pension funds with good performance in the pre-replacement period suffer deterioration after replacement, and new managers need about one year to achieve good results. In funds without replacement, managers with longer tenure underperform and female managers are market-risk averse.

1. Introduction

In recent decades, an ageing population and increasing doubts concerning pay-as-you-go public pension systems have enhanced investment in pension funds, bringing the total global investment to more than USD 36 trillion in 2014 (Towers Watson, 2015). Pension funds are professionally managed, generally in accordance with accepted risk-return portfolio management principles (Markowitz, 1952; Sharpe, 1964; Lintner, 1965; Black, 1972), though the actions of managers also have a substantial impact on performance. Consequently, the pension fund industry has established control mechanisms, such as manager replacement, in order to minimize poor results.

In this paper, we analyze the manager-replacement mechanism in a sample of Spanish pension funds, examining its determinants with a multivariate logit approach, its consequences for raw returns, excess returns (performance) and risk, and its effectiveness, measuring the existence of significant abnormal returns through an event-study methodology.

The manager-replacement determinants and effectiveness are not clear in prior works. There exists a body of financial literature that deals with the relation between manager replacement and performance in mutual funds. A number of studies find improvements after replacement of poorly performing managers and performance deterioration after replacement of outperforming managers in mutual funds (Denis and Denis, 1995; Khorana, 1996; Khorana, 2001; Clare *et al.*, 2014; Andreu *et al.*, 2015).

Several mutual fund studies find that manager replacement is performance-sensitive to manager characteristics, such as tenure, age, gender and management structures. Chevalier and Ellison (1999a, 1999b) find that younger managers achieve better performance, but these managers are more likely to be replaced when the fund risk deviates from the industry norm. Ding and Wermers (2012) find that managers with longer tenure outperform in large funds, but underperform in small funds. On the other hand, Porter and Trifts (1998) suggest that experienced managers become complacent, leading to a negative effect on performance. Kempf *et al.* (2014) point out that managers with longer tenure may have a different standing within the organization, influencing both investment behavior and performance. Therefore, we expect that manager tenure will influence manager replacement, depending on a given manager's excess returns.

Although the influence of the manager's gender has not been studied in manager-replacement processes, it is another factor that influences investment behavior and, as a consequence, is a possible cause of manager replacement. Hinz *et al.* (1997), Dwyer *et al.* (2002) and Watson and Robinson (2003) find gender differences in investing attitudes and in risk behavior, suggesting a lower propensity for risk-taking among females. Studying the Australian superannuation fund, Watson and McNaughton (2007) indicate that women choose more conservative investment strategies. Powell and Ansic (1997) find that males and females adopt different strategies, but gender has no significant impact on the ability to perform. Niessen-Ruenzi and Ruenzi (2015) find no gender differentials in performance, but mutual funds managed by females receive lower inflows.

Another manager-replacement decision consists in changing the management structure (team versus individual manager). Teams present greater comprehension of information and more effective feedback in decision-making (Bikhchandani *et al.*, 1998; Kaufman, 1999). Conversely, Prather and Middleton (2002) find no perceptible difference between the outcomes of team-managed and individually managed funds. Prather and Middleton (2006) also find no differences between teams and individuals in market-timing and security-selection decisions. Additionally, Massa *et al.* (2010) find that mutual funds with named managers have greater inflows and suffer less return diversion; however, the departure of these named managers reduces net flows. Bär *et al.* (2011) find, in US equity mutual funds, that teams take less extreme decisions and are less likely to achieve extreme performance. In the case of pension funds, we expect that a specific structure will lead to manager replacement if it is thought to generate higher excess returns.

Empirical evidence on pension funds is scarce, but the existing management differences between mutual funds and pension funds (Del Guercio and Tkac, 2002; Sialm *et al.*, 2015) suggests that this mechanism can cause different manager-replacement behavior. Goyal and Wahal (2008) find that US plan sponsors hire fund-management firms after large positive excess returns, but these firms do not deliver positive excess returns thereafter. Moreover, the results also indicate that managers are terminated for a number of reasons not necessarily limited to underperformance. Unlike Goyal and Wahal (2008), in our work we study pension funds that are managed internally, which is a common characteristic of Spanish pension funds.

The limited evidence on this topic for pension funds and the lack of studies outside the US market lend support for our analysis of the Spanish pension fund

industry. The Spanish pension fund industry offers interesting opportunities to study this particular issue. Despite the late appearance of pension funds, in 1988, the industry has experienced outstanding growth in recent decades, amounting to more than EUR 100 billion in assets under management by September 2015.[1] Moreover, our sample covers a period of fund mergers resulting from the recent reorganization of the Spanish financial sector, which provides us with useful data on changes in fund management.

We first study the determinants of pension fund manager replacement. We consider as determinants the raw return, excess return, risk, manager characteristics and fund characteristics. Raw returns can be a reason for replacement, since investors observe it directly, but replacement decisions do not primarily lie with individual investors, so we also include excess returns, which reflects real manager performance and may be the primary reason for manager replacement. Our main finding is that manager replacement in Spanish pension funds is not motivated solely by poor excess returns. Manager characteristics and risk positions are also causes of manager replacement.

The second contribution of this paper is an analysis of the role of manager characteristics in raw returns, excess returns and risk in pension funds, with and without manager replacement. Our results show that managers with longer tenure underperform when funds do not replace those managers, managerial structure and manager gender do not influence the excess return, and female managers are systematically risk-averse and support more idiosyncratic risk.

Finally, we analyze the capacity of new managers to improve fund performance by measuring abnormal returns with an event-study methodology. We find that outperformers in the pre-replacement period suffer deterioration and new managers need one year to adapt and obtain positive abnormal returns.

The rest of the paper is structured as follows: In Section 2, we describe the data used. Section 3 presents our methodology. Section 4 contains our empirical results, and Section 5 concludes the paper.

2. Data and Sample Description

We analyze the Spanish pension fund industry because it has experienced considerable development since its inception in 1988 and now is the eighth largest pension fund industry in the EU25 (OECD, 2014), with more than EUR 100 billion in assets under management.[2] Our particular focus is on pension funds investing in European equities, because those comprise the main equity category (over 58% of equity pension funds) and represent an active segment in the European pension fund industry. Additionally, their management is especially affected by stock market fluctuations, which makes the managers more prone to experiencing replacement. Finally, Spanish pension funds are typically internally managed, which facilitates a study of manager replacement, as sponsors select their own managers. Specifically, pension funds are promoted by three types of entities: credit institutions (mainly banks), insurance companies and companies specializing in management and financial ad-

[1] Data obtained from the *Spanish Association of Investment and Pension Funds* (INVERCO), www.inverco.es.

[2] Data obtained from INVERCO, September 2015: www.inverco.es

vice, so the pension funds of these entities are managed by their own management groups.

Our database was obtained from Morningstar and comprises all monthly returns and total net assets (TNA) of Spanish pension funds investing in European equities from January 1999 to August 2014.[3] Additional data fields are fund name, fund family, fund inception date and certain manager information (manager name or team name, start and end dates of each manger's tenure). We require at least 24 months of data for each pension fund to ensure the consistency of the analysis, so the sample is restricted to 98 pension funds in all. The total net assets of these 98 funds are more than EUR 3.3 billion, comprising 57% of Spanish equity pension funds.

We use the manager data to create three manager-characteristic variables. First, we compile a manager tenure variable (in years), considering the start and end dates of each manager's tenure. We also construct a team dummy variable, taking into account manager changes over time and the fact that some funds are intermittently managed by teams. The team dummy takes the value of 1 for the period in which a pension fund is managed by a team and 0 when managed by an individual. Finally, we build a gender dummy variable (*Gender*) that takes the value of 1 if the manager is female or 0 otherwise. All these variables take management replacement into account, which is to say that the dummy variables are time-variant.

To compute the risk-adjusted excess returns, and given the location of the pension funds studied, the risk-free asset, market, size, book-to-market and momentum factors are the European factors developed by Fama and French,[4] who build homogenous factors for different countries and regions, according to the Fama and French (1993) and Carhart (1997) models.

Table 1 reports certain descriptive statistics of the data. Panel A shows statistics for all pension funds (raw return, TNA, flows, manager tenure, CAPM and four-factor alphas) and risk factors (market excess return, size, book-to-market and momentum) from January 1999 to August 2014. The average raw return is positive (0.002), but the excess returns (alphas) are negative (-0.0035 and -0.0017). Moreover, managers stay, on average, more than five years with a fund.

Panel B shows the number of funds with manager replacement by year. We observe that replacements are not evenly distributed over the years, beginning in 2006 (ten replacements). The lack of replacements before 2006 may due to the fact that the average inception date of these pension funds is October 2001 and more than 17% of the funds first appear in 2004 and 2005, so this seems to indicate that younger funds usually have fewer resources to replace managers during the initial years of their existence. On the other hand, the largest number of manager replacements is found in 2012 (31), which could be related to the climax of the restructuring process of many financial groups in Spain since 2010–2011. During this process, the structure of many financial institutions has changed due to mergers, acquisitions

[3] We should clarify that Spanish equity pension funds must invest at least 75% of their assets in stocks (according to INVERCO). The pension funds studied present 80% to 100% of the investment in European equity securities (given the European investment location of the pension funds studied), and our study is focused on the equity part.

[4] Data available on the website of Fama and French:
http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#Developed

Table 1 Summary Statistics

Table 1 is divided into four panels. Panel A shows descriptive statistics (mean, standard deviation, minimum and maximum) of the 98 pension funds analyzed: monthly raw return, monthly total net assets (*TNA*) in EUR million, monthly fund flows (defined as $F_{it} = [TNA_{it} - TNA_{it-1}*(1+R_{it})]/TNA_{it-1}$), which are winsorized by fund at the bottom and top 1% level of the distribution, manager tenure in years, CAPM alpha, four-factor alpha, and risk factors (market excess return [r_m], size [*SMB*], book-to-market [*HML*], and momentum [*MOM*]) from January 1999 to August 2014. Panel B lists the number of pension funds that experienced manager replacement annually from 1999 to 2014. Panel C shows the number of funds, the average fund raw return [*TNA*], manager tenure, flows, CAPM alpha and four-factor alpha of the funds that did not experience manager replacement and the funds that did. Panel D shows the number and percentage of funds managed by a team or a single manager, a female or a male, an all-female/all-male team, or a team with some female members. Panels E and F show the raw return and excess returns (CAPM and four-factor alphas) of the funds with manager replacement (before and after), taking into account the funds' management structure before and after manager replacement.

Panel A Descriptive statistics of pension funds and risk factors

	Mean	*Std. Dev.*	*Min*	*Max*
Fund return	0.002	0.047	-0.234	0.236
TNA	$2.34*10^7$	$4.61*10^7$	29.0	$5.78*10^8$
Flows	0.053	1.509	-0.949	100.422
Manager tenure	5.298	4.145	0	16.881
CAPM alpha	-0.0035	0.0019	-0.0092	0.0034
4-factor alpha	-0.0017	0.0016	-0.0088	0.0046
r_m	0.005	0.055	-0.221	0.138
SMB	0.002	0.023	-0.069	0.093
HML	0.005	0.028	-0.096	0.11
MOM	0.009	0.048	-0.26	0.138

Panel B Number of funds with manager-replacement per year

1999	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
0	0	0	0	0	0	0	10	2	3	2	1	5	31	7	2

Panel C Statistics of pension funds without and with manager-replacement

	No-manager-replacement funds	*Manager-replacement(s) funds*
Number of funds	50	48(15)
Fund return	0.001	0.002
TNA	$1.93*10^7$	$2.36*10^7$
Manager tenure		
Flows	0.063	0.056
CAPM alpha	-0.0037	-0.0030
4-factor alpha	-0.0016	-0.0016

Panel D Manager characteristics: Team and gender

	No. of funds	*Percentage of funds (calculated on 98 funds)*
Team / single managers	33 / 65	33.67% / 66.33%
Female / male managers	11 / 87	11.22% / 88.78%
Team of women / men	1 / 32	1.02% / 32.65%
Woman in a team	7	7.14%

Panel E Raw return considering fund structure (team or single manager) before and after manager-replacement

Structure	*Before*	*After*	*Percentage of funds (on 98 funds)*
Change of a team by a single manager	0.0002	0.0096	2.04%
Change of a single manager by a team	-0.0016	0.0073	7.14%
Change of a team by another team	0.0016	0.0057	8.16%
Change of a single manager by another manager	0.0013	0.0069	52.04%

Panel F CAPM and four-factor alphas considering fund structure before and after manager-replacement

	CAPM alpha		*Four-factor alpha*	
Structure	*Before*	*After*	*Before*	*After*
Change of a team by a single manager	-0.0014	-0.0036	-0.0008	-0.0016
Change of a single manager by a team	-0.0034	-0.0037	-0.0018	-0.0019
Change of a team by another team	-0.0039	-0.0016	-0.0020	-0.0011
Change of a single manager by another manager	-0.0035	-0.0035	-0.0020	-0.0015

and the transformation of savings banks into commercial banks. As a result, financial institutions have been forced to implement changes in the organization and management of their pension funds. Specifically, in our sample, 48% and 15% of the manager replacements in 2012 correspond to pension funds managed by La Caixa and Caser, respectively. La Caixa was a Spanish savings bank that underwent a privatization process starting in 2011, thus becoming a banking foundation. On the other hand, Caser is an insurance company that has lost some agreements with commercial banks and savings banks due to the restructuring process (many entities prefer to offer their own pension funds). These figures show that Caser is making management changes in an attempt to attract more contracts. Furthermore, we observe that manager replacement in Spanish pension funds is related to financial restructuring; indeed, replacements in our sample begin to increase in 2011 (five) and continue in 2013 (seven), though at a lower frequency.

Panel C shows statistics of pension funds with and without manager replacement. Our sample contains 50 pension funds that did not change managers over the period studied and 48 pension funds that replaced managers. Among the latter, fifteen funds replaced their managers twice. The average return[5] and size of the funds that experienced manager replacement are higher than the average return and size of the funds without manager replacement, though the tenures of their manager are shorter and their flows are lower. The excess return (CAPM and four-factor alphas) is negative before and after replacement, though less negative in funds with manager replacement.

Panel D shows that 33 (65) funds are managed by a team (single manager), 11 (87) by a female (male) and, among the team-managed funds (33), only one is managed by a team of women, while seven team-managed funds have at least one female member.

[5] We consider the average fund return during the period studied (or existence of the fund) for the funds with and without manager replacement.

Panels E and F display a preliminary analysis aimed at studying the relation between returns (raw and excess returns) and the fund management structure (team or single manager) in the funds with manager replacement.Panel E shows that the raw return improves after replacement, independently of the given fund's management structure (teams replaced by single managers, single managers replaced by teams, one team replaced by another, or a single manager replaced by another). Pension funds tend to adopt the same structure after a change (8.16% and 52.04% are funds managed by a team and single manager for the whole period analyzed, respectively), and management by a team is the structure selected to replace single managers when the prior raw return is negative; however, the replacement of a team by a single manager is not clearly linked to the raw return. Additionally, the average raw return of the funds without replacement (not reported) is 0.166% in funds with a single manager and 0.134% in team-managed funds. This evidence shows that having a single manager is the most common structure, presenting a higher raw return, but management changes are also more frequent in funds with a single manager. With regard to the excess return, panel F shows general a negative excess return, which decreases when the fund management structure changes (from a team to a single manager or vice versa) and improves when the fund management structure is the same after the manager-replacement.

Additional summary statistics of the return and risk measures for all funds and funds with and without manager replacement are available upon request. The raw return is positive (0.15%) on average, but this sample is characterized by negative values, since the median is higher (0.69%). The raw return of funds with manager replacement is higher than the raw return of those without manager replacement (0.16% versus 0.14%); however, this difference is not significant. All funds present a negative excess return (CAPM and four-factor alphas), which is lower in funds without manager replacement, indicating negative performance. On the other hand, funds with manager replacement take less risk (market, idiosyncratic and total risk), though the market risk and four-factor idiosyncratic risk differences between funds, with and without manager replacement, are not significant.

3. Method

3.1 Determinants of Manager Replacement

The related literature on manager behavior demonstrates that manager characteristics and fund characteristics can produce differential excess returns. In order to study whether certain fund features and manager characteristics are determinants of manager-replacement decisions, in this section we present a multivariate approach with logit estimation, regressing a binary manager-replacement variable on several explanatory variables and controls. Additionally, the proposed model tests the hypothesis that manager tenure and management structure are causes of manager replacement only if they generate lower excess return. Model (1) specifies a multinomial logistic regression considering different fund features and manager characteristics and whether the excess return obtained by teams and managers with different degrees of experience are determinants of manager replacement.

$$D_{it} = f\begin{pmatrix} R_{it};\ \alpha_{it};\ Risk_{it};\ \alpha_{it} * Team_{it};\ Gender_{it};\ \alpha_{it} * Tenureq1_{it};\ \alpha_{it} * Tenureq2_{it};\\ \alpha_{it} * Tenureq3_{it};\ \alpha_{it} * Tenureq4_{it};\ \alpha_{it} * Tenureq5_{it};\ TNA_{it};\ Flows_{it} \end{pmatrix} \quad (1)$$

where D_{it} is a dummy variable that takes the value of 1 when a fund experiences manager replacement or 0 otherwise. The explanatory variables are pension fund raw return (R_{it}), excess return (α_{it}), which is measured as the alpha of Jensen (1968) or the four-factor model alpha (Carhart, 1997), and fund risk ($Risk_{it}$), measured as the total risk or the market and idiosyncratic fund risk. *Team* and *Gender*[6] are dummy variables that take the value of 1 when the fund is managed by a team or a female, or 0 otherwise. *Tenureq*1, *Tenureq*2, *Tenureq*3, *Tenureq*4 and *Tenureq*5 are dummy variables that equal 1 when manager tenure is in the first (lowest experience), second, third, fourth or fifth quintile (highest experience), respectively. The sensitivity of manager replacement to excess return for team-managed funds is based on the combination of α_{it} and α_{it} * *Team variables*. The sensitivity of manager replacement to the excess return of managers with different levels of experience is determined by α_{it} and α_{it} * *Tenurequintile* variables. As control variables, we include fund size and flows. Fund size is expressed as the logarithm of the total net assets. Flows[7] are the percentage money flows and are defined as the monthly change in TNA net of fund returns during month t: $F_{it} = \left(TNA_{it} - TNA_{it-1} * (1+R_{it})\right) / TNA_{it-1}$. We hypothesize that size and flows could be important determinants of manager replacement, since larger funds have more resources to replace managers when they need to do so and flow decreases may be a justification for manager replacement.

3.2 Raw Return, Excess Return and Manager Characteristics

We analyze the role of certain manager characteristics (tenure, managerial structure and gender) on raw return and excess return, taking into account whether or not a fund has experienced manager replacement. The model applied is as follows:

$$D_{it} = f\left(Tenure_{it}; Team_{it}; Gender_{it}; TNA_{it}; Flows_{it}\right) \quad (2)$$

where D_{it} is the dependent variable, i.e. the raw return (R_{it}) or excess return (α_{it}) measured as the Jensen's alpha or the four-factor model. *Tenure* is the logarithm of the years that a manager/team has worked with a fund. *Team* and *Gender* are dummy variables that take the value of 1 when the fund is managed by a team or a female, or 0 otherwise. The fund size (logarithm of TNA) and flows

$$\left[F_{it} = \left(TNA_{it} - TNA_{it-1} * (1+R_{it})\right) / TNA_{it-1}\right]$$

are control variables. In this case, we would expect that larger funds and funds experiencing inflows could achieve higher returns because more resources can generate scale economies.

3.3 Risk and Manager Characteristics

In this section, we examine whether the relation between manager characteristics and risk varies, taking into account manager replacement. Prior works, such as Chevalier and Ellison (1999a), explain that managers with different characteristics take different risk positions; specifically, managers with longer tenure choose lower

[6] We also thought to include a female team dummy variable in order to distinguish funds managed by an all-female team; however, our sample only contains one fund with this characteristic.

[7] To ensure that extreme values do not drive our results, flows are winsorized by fund at the bottom and top 1% level of the distribution.

systematic risk positions. Similarly, Hinz *et al.* (1997), Watson and Robinson (2003) and Watson and McNaughton (2007) show that women choose more conservative investment strategies.

We measure risk through analysis of the total, systematic and idiosyncratic risks. The total risk is measured as the standard deviation of fund returns (R_{it}); the systematic risk is obtained from the one-factor model (CAPM) and the four-factor Carhart model. The idiosyncratic risk is obtained from the one- and four-factor models as follows:

$$\sigma_{\varepsilon_{it}} = \sigma_{R_{it}} - \beta_{it}\sigma_{m_{it}} \tag{3}$$

Where $\sigma_{\varepsilon_{it}}$ is the idiosyncratic risk, $\sigma_{R_{it}}$ is the pension fund risk, β_{it} is the market beta of the one- or four-factor model, and $\sigma_{m_{it}}$ is the standard deviation of the market return.

The model proposed for analyzing risk and manager characteristics is as follows:

$$Risk_{it} = f\left(Tenure_{it}; Team_{it}; Gender_{it}; TNA_{it}; Flows_{it}\right) \tag{4}$$

where $Risk_{it}$ represents the different risk measures, specifically the total risk (σ_{it}), the systematic risk (β_{it}) and the idiosyncratic risk $\left(\sigma_{\varepsilon_{it}}\right)$. Size and flows are included as control variables because we expect that larger funds have less systematic risk and are able to diversify more efficiently (lower idiosyncratic risk); however, higher flows may lead to a need for more frequent rebalancing, which makes it more difficult to control the risk level.

3.4 An Event Study: The Abnormal Returns of Funds with Manager Replacement

In order to analyze the significance (effectiveness) of manager-replacement with respect to returns, we apply an event-study approach that shows whether the excess return achieved in a window period around the manager-replacement date is significantly positive or negative (Clare *et al.*, 2014).

In our case, the event is a manager replacement and the event date (t) is the manager-replacement date, and we check the abnormal return before, during and after a window period around the event. First, we test the significance of the excess return some time before the event because if managers know that they are going to be replaced, they may act differently (Clare *et al.*, 2014; Andreu *et al.*, 2015). Moreover, we test the immediate effect of manager replacement by analyzing the excess return obtained some time after the replacement. Finally, we evaluate whether the manager-replacement process has repercussions on the excess return during the whole process (some time before and after the manager-replacement date), i.e. during the window period.

4. Results

In this section, we first analyze the determinants of manager replacement. We then study how manager characteristics influence the raw return, excess return and risk, depending on the existence of manager replacement. Finally, we examine

the impact of manager replacement by measuring the abnormal return in different event windows.

4.1 Determinants of Manager Replacement

First, we examined the likelihood of the occurrence of manager replacement depending on several fund features and manager characteristics (expression 1).

Table 2 shows that the raw return is not a determinant of manager replacement. Models (1) and (2) show that funds with lower excess returns have a higher probability of manager replacement, but the excess return is not significant in models (3) and (4). Market-risk coefficients show that managers with lower market risk are more likely to be replaced, suggesting that tenure and fund structure can also be related to market risk. The idiosyncratic and total risk coefficients are not significant. Male managers have a greater probability of being replaced. With regard to the variables linked to the excess return, teams are less likely to be replaced when the excess return is higher. Managers with short (first quintile) tenures are more likely to be replaced when they obtain higher returns. This may be due to voluntary departure, since good managers tend to look for better positions in other funds, usually hedge funds (Kostovetsky, 2010). On the other hand, managers with more experience (second, third, fourth and fifth quintiles) are more likely to be replaced when the excess return decreases. Additionally, larger funds tend to replace their managers more frequently and fund flow is not a significant variable. These results confirm our hypothesis, proving that the team and experience variables are linked to the excess return.

4.2 Raw Return, Excess Return and Manager Characteristics

In this section, we evaluate the influence of manager characteristics on the raw and excess returns (CAPM and Carhart alphas). *Table 3* shows these results, taking into account all pension funds, those funds that do not experience manager replacement and, among those funds that do, the influence before and after the change.

With regard to raw returns, *Table 3* shows that tenure is positively related to raw returns. Raw returns increase when managers are more experienced, despite the existence (or not) of manager replacement. Managerial structure and gender[8] do not affect returns. The fund size coefficient is not significant and returns increase when funds receive more flows.

The relation between the excess return (CAPM and Carhart alphas) and manager characteristics shows different results with the existence of manager replacement. Analyzing all funds, we find significant results only when using the CAPM alpha (column 3). Tenure and excess return present an inverse relation, despite the fact that more experienced managers achieve higher raw returns (column 2), so the execution of these managers is worse and generates lower excess returns. Funds managed by a female display lower performance and inflows affect the excess return positively. The team variable and fund size do not affect the excess return.

[8] We include the gender variable in this model because we believe that female managers may present a different level of risk aversion; however, the absence of significance may be due to the limited number of observations with this characteristic. We repeat this analysis with the gender variable removed and the results remain the same (these results are available upon request; they are not reported here due to space constraints).

Table 2 The Importance of the Excess Returns of Teams and Managers with Different Experience Levels in Determining Manager Replacement

Table 2 shows the results of a multinomial logit specification to examine the fund characteristics and manager characteristics that induce manager replacement (expression 1). The manager replacement indicator variable equals 1 if a fund experiences manager replacement. R_i is the fund's raw return, α_{it} is the alpha from the CAPM model in (1) and (2) or from the four-factor model in (3) and (4). $\beta_{m,it}$ and $\sigma_{\varepsilon i}$ are the market beta and idiosyncratic risk from the CAPM model in (1) or from the four-factor model in (3). σ_i is the total risk. Team is a dummy variable that equals 1 if the fund is managed by a team or 0 otherwise. Gender is a dummy that equals 1 if the manager is a female or 0 otherwise. *Tenureq*1, *Tenureq*2, *Tenureq*3, *Tenureq*4 and *Tenureq*5 are dummy variables that equal 1 when the manager's tenure is in the first, second, third, fourth or fifth quintile, respectively. The first quintile shows the shortest tenure and the fifth quintile represents the longest tenure. *TNA* (logarithm of total net assets) and fund flows (winsorized at the 1% level) are control variables.

Standard errors are reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)
R_i	-0.3141 (-0.5)	-0.3375 (-0.54)	0.2398 (0.37)	0.4459 (0.6)
α_{it}	-1.3011*** (8.9)	-1.2851*** (8.83)	-0.1068 (-0.8)	-0.0681 (-0.52)
$\beta_{m,it}$	-4.4415*** (-11.65)		-1.5491*** (-3.83)	
$\sigma_{\varepsilon i}$	0.9511 (0.86)		0.6116 (0.53)	
σ_i		-0.3094 (-0.28)		0.3591 (0.32)
α_{it} *Team	-2.5722*** (-20.78)	-2.2474*** (-19.21)	-3.2651*** (-18.61)	-0.4351 (-0.31)
Gender	-0.7211*** (-7.87)	-0.7601*** (-8.27)	-0.0535 (-0.48)	-0.7704*** (-7.71)
α_{it} *Tenureq1	1.4739*** (7.4)	1.5227*** (7.75)	0.8577*** (3.53)	-0.0565 (-0.29)
α_{it} *Tenureq2	0.2436 (1.39)	0.4926 (1.41)	-0.6094*** (-2.62)	-1.7326*** (-8.54)
α_{it} *Tenureq3	-0.0826 (-0.51)	0.041 (0.26)	-0.4428** (-2.09)	-1.7185*** (-9.42)
α_{it} *Tenureq4	-0.6448*** (-4.09)	-0.6573*** (-4.3)	-2.1077*** (-10.77)	-3.4372*** (-20.14)
α_{it} *Tenureq5	-1.9243*** (-13.89)	-2.0323*** (-14.91)	-4.4603*** (-23.06)	-5.5467*** (-29.98)
TNA	0.0714*** (4.79)	0.0406*** (2.74)	0.1757*** (10.1)	0.238*** (14.7)
Flows	0.0064 (0.24)	0.0069 (0.26)	0.0003 (0.01)	0.0017 (0.07)
Constant	2.6881*** (8.07)	0.1202 (0.48)	0.0355 (0.11)	-1.8942*** (-7.56)
Pseudo R^2	0.2042	0.1874	0.2589	0.2163
Observations	3946	3946	3946	3946

In pension funds without manager replacement, managers with longer tenure obtain lower excess returns (-0.0001), incoming resources improve excess returns

Table 3 Raw Returns, Excess Returns and Manager Characteristics, Taking into Account the Existence of Manager Replacement

Table 3 reports the results obtained from regressing funds' raw returns (R_{it}) and excess returns (CAPM and four-factor alphas) on manager characteristics (expression 2) for all pension funds, funds that do not experience manager replacement and funds that do experience manager replacement, among which we distinguish between the period before and after manager replace-ment. The manager characteristics are manager tenure (logarithm of tenure in years), a team dummy (equals 1 if the fund is managed by a team or 0 otherwise), and a gender dummy (equals 1 if the manager is a female or 0 if male). *TNA* (logarithm of total net assets) and fund flows (winsorized at the 1% level) are control variables. All models are estimated by OLS.

Standard errors are clustered by fund and *t*-statistics are in parentheses. R^2 is the *R*-squared coefficient. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	All pension funds			**No-manager-replacement pension funds**			**Before manager-replacement**			**After manager-replacement**		
	R_i	***CAPM alpha***	***4-factor alpha***	***R_i***	***CAPM alpha***	***4-factor alpha***	***R_i***	***CAPM alpha***	***4-factor alpha***	***R_i***	***CAPM alpha***	***4-factor alpha***
Constant	-0.0024 (-0.58)	-0.0037 (-1.37)	-0.0022 (-0.93)	-0.0022 (-0.39)	-0.001 (-0.43)	0.0012 (0.62)	0.0015 (0.17)	0.0004 (0.06)	-0.0001 (-0.02)	-0.0024 (-0.58)	-0.0032 (-0.99)	-0.0017 (-0.62)
Tenure	0.0003*** (2.69)	-0.0001** (-2.54)	(-1.14)	0.0003** (2.64)	-0.0001** (-2.39)	-0.0001* (-1.96)	0.0005** (2.47)	0.00004 (0.67)	0.0001 (1.18)	0.0003*** (2.69)	-0.0001** (-2.59)	-0.0001 (-1.48)
Team	-0.0009 (-1.12)	0.0006 (0.93)	0.0065 (0.27)	-0.0015 (-1.29)	-0.0004 (-0.68)	-0.0008 (-1.46)	0.0001 (0.04)	0.0019*** (3.65)	0.0013 (1.32)	-0.0009 (-1.12)	0.0003 (0.43)	-0.0005 (-0.66)
Gender	-0.0009 (-0.92)	-0.0011** (-2.18)	-0.0004 (-0.81)	-0.001 (-0.87)	-0.0002 (-0.31)	-0.0003 (-0.54)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	-0.0009 (-0.92)	-0.0009 (-1.54)	-0.0004 (-0.70)
TNA	0.0005 (0.9)	0.0001 (0.3)	0.0001 (0.44)	0.0005 (0.65)	-0.0003 (-0.88)	-0.0003 (-1.06)	-0.0007 (-0.5)	-0.0006 (-0.58)	-0.0004 (-0.43)	0.0005 (0.9)	0.0001 (0.11)	0.0001 (0.33)
Flows	0.0569*** (5.14)	0.0024* (1.96)	0.0018 (1.63)	0.0478*** (3.65)	0.0023* (1.68)	0.0007 (0.67)	0.0938*** (5.23)	0.0007 (0.55)	0.002 (1.51)	0.0569*** (5.14)	0.0025* (1.75)	0.0016* (2.06)
Observations	5767	5767	5767	3764	3764	3764	1306	1306	1306	697	697	697
R^2	0.0057	0.073	0.139	0.0051	0.192	0.161	0.0143	0.232	0.290	0.0057	0.073	0.139

(the flows coefficient is significantly positive in column 6) and the remaining characteristics are not important in predicting excess returns. It is remarkable that the higher raw return achieved by experienced managers does not translate into greater excess returns. This can be produced when managers who have been working too long in a given fund achieve a certain status (lower risk of dismissal) and their efforts are not as prolific as at the beginning of their tenure (Porter and Trifts, 1998; Kemft *et al.*, 2014). Indeed, Kacperczyk *et al.* (2014) find that managers of top funds are younger and less experienced. With regard to managerial structure, we, like Prather and Middleton (2002, 2006), do not find perceptible differences between the excess returns of team-managed funds and those managed by individuals. Similarly, as in Powell and Ansic (1997), we do not find that gender has an impact on excess returns.

Pension funds with manager replacement present different results. Before replacement (column 9), the team variable is the only significant variable, affecting the excess return positively. After replacement, experienced managers obtain lower excess returns and funds receiving more inflows achieve greater excess returns (significantly positive coefficients in columns 12 and 13). The result for the tenure variable suggests that managers starting in a new fund are motivated to maintain their jobs, thus achieving better results, but they become complacent over time.

The general negative tenure-excess return relation found in *Table 3* (except in the pre-replacement period) may be explained by agency issues of managers with longer tenure, new more motivated managers, and by the fact that manager replacement can also be due to voluntary departure. Kostovetsky (2010) indicates that the best managers often leave funds to work for hedge funds, so a negative correlation between experience and skill would exist among the remaining managers (Kemft *et al.*, 2014). On the other hand, the insignificant results in the pre-replacement period may be there because experienced and non-experienced managers have not yet achieved a position of rank, so both types of managers endeavor to obtain positive excess returns.

We also note that team-managed funds only obtain better excess returns before manager replacement. Examining the number of funds managed by teams, we observe more team-managed funds in the post-replacement period, suggesting that funds attempt to improve results by replacing single managers with teams, as the latter structure displays better results in the pre-replacement period. However, new teams do not make a discernible difference, perhaps because of structural problems or because teams are less likely to achieve extreme performance (Bär *et al.*, 2011).

Additionally, pension funds do not consider gender when undertaking manager replacement,[9] though when analyzing all of the funds we find that female manager achieve lower excess returns. Finally, flows present a positive relation with excess returns after manger replacement and the absence of it before replacement, suggesting that manager replacement can be a tool to attract flows and improve excess return.

[9] We include the gender variable, despite the scant observations for this variable, because it reports interesting results supporting the prior evidence of poorer results of female managers. Nonetheless, we repeat this analysis with the gender variable removed and the results remain the same (these results are available upon request; they are not reported here due to space constraints).

Table 4 Risk and Manager Characteristics

Table 4 reports the results obtained from regressing total risk and systematic risk on manager characteristics (expression 4). For systematic risk, we use two measures: the beta from the CAPM model and the market beta from the four-factor model. Results are reported for all pension funds, funds that do not experience manager replacement and funds that do experience manager replacement, among which we distinguish between the period before and after manager replace-ment. The manager characteristics are manager tenure (logarithm of tenure in years), a team dummy (equals 1 if the fund is managed by a team or 0 otherwise), and a gender dummy (equals 1 if the manager is a female or 0 if male). *TNA* (logarithm of total net assets) and fund flows (winsorized at 1% the level) are control variables. All models are estimated by OLS.

Standard errors are clustered by fund. *T*-statistics are in parentheses. R^2 is the *R*-squared coefficient. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	All pension funds			**No-manager-replacement funds**			**Before manager-replacement**			**After manager-replacement**		
	σ_i	***CAPM beta***	***4-factor market beta***	σ_i	***CAPM beta***	***4-factor market beta***	σ_i	***CAPM beta***	***4-factor market beta***	σ_i	***CAPM beta***	***4-factor market beta***
Constant	0.0399*** (10.23)	-0.0017 (-0.97)	-0.0012 (-0.88)	0.04*** (10.23)	-0.0021* (-1.74)	-0.0018* (-1.75)	0.0428*** (3.18)	-0.0111 (-1.29)	-0.0091 (-1.45)	0.0393*** (9.5)	-0.0015 (-1.24)	-0.0009 (-1.01)
Tenure	0.0004*** (2.91)	0.0001** (2.06)	0.00005 (1.27)	0.0001 (0.96)	0.00001 (0.37)	-0.00001 (-0.37)	0.0008** (2.17)	0.0002 (1.08)	0.0001 (0.62)	0.0002* (1.88)	0.0001 (1.32)	0.0005* (1.68)
Team	-0.0012 (-1.2)	-0.0003 (-0.67)	-0.0004 (-1.01)	-0.0004 (-0.29)	0.0003 (0.71)	0.0002 (0.61)	-0.0024 (-1.16)	-0.0015* (-1.83)	-0.0014** (-2.17)	-0.0004 (-0.4)	-0.0002 (-0.52)	-0.0002 (-0.76)
Gender	0.0002 (0.23)	-0.0005 (-1.24)	-0.0004 (-1.22)	-0.0008 (-0.65)	-0.0015*** (-3.25)	-0.0012*** (-3.16)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	-0.0001 (-0.15)	-0.0009** (-2.29)	-0.0008** (-2.1)
TNA	-0.0012** (-2.21)	0.0002 (0.71)	0.0001 (0.76)	-0.0009 (-1.64)	0.0003** (2.2)	0.0003** (2.24)	-0.0019 (-0.98)	0.0013 (1.14)	0.0011 (1.39)	-0.0010* (-1.8)	0.0002 (1.41)	0.0002 (1.28)
Flows	-0.0449*** (-6.48)	-0.0032 (-1.47)	-0.0044* (-1.89)	-0.0407*** (-4.95)	-0.0044* (-1.77)	-0.0045* (-1.85)	-0.0721*** (-5.64)	0.0032 (0.58)	-0.0013 (-0.18)	-0.0377*** (-4.69)	-0.0043* (-1.83)	-0.0047* (-2.00)
Obs.	5767	5767	5767	3764	3764	3764	1306	1306	1306	697	697	697
R^2	0.0157	0.073	0.139	0.0113	0.192	0.161	0.0469	0.232	0.290	0.0103	0.073	0.139

4.3 Risk and Manager Characteristics

Chevalier and Ellison (1999a) explain that different risk-taking positions originate with different manager behavior. In this section, we analyze the relation between manager characteristics and risk (total, systematic and idiosyncratic risk), taking into account the existence of manager replacement.

Table 4 shows the relations between manager characteristics and total risk and systematic. With regard to the total risk results, *Table 4* shows a positive tenure-risk link, i.e. total risk increases with manager tenure, except in funds without manager replacement (column 5). This indicates that more experienced managers are more likely to be replaced when they take greater risks; however, more experienced managers tend to take riskier positions after replacement. On the other hand, managerial structure and gender do not affect risk. When we analyze all funds (column 2), we find that fund size inversely affects risk, which also holds during the post-replacement period (column 11), i.e. new managers tend to apply less risky strategies when they work in larger funds. With regard to flows, risk decreases when funds receive more flows.

The relation between systematic risk and manager characteristics shows that, when all pension funds are taken into consideration (column 3), experienced managers take greater systematic risk, which explains the lower excess returns found in *Table 3*. Incoming flows reduce systematic risk (column 4). Alternatively, in funds without manager replacement (columns 6 and 7), female managers are risk-averse, while smaller funds and those funds receiving more flows take a smaller market risk. This is consistent with the higher excess returns found for the funds receiving more flows (*Table 3*).

The pre-replacement results (columns 9–10) show that team-managed funds take a smaller systematic risk, so the higher excess returns obtained by these teams are related to a lower systematic risk position. After manager replacement, female managers are risk-averse and funds receiving resources take less systematic risk.

Our results further show different relations between the fund and manager characteristics and idiosyncratic risk (these results are available upon request). Specifically, larger funds and funds receiving more flows develop lower idiosyncratic risk. The lower total risk supported by larger pension funds (*Table 4,* column 2) is due to lower idiosyncratic risk (larger funds are more resourceful in eliminating this risk). The total risk of funds without manager replacement (*Table 4,* column 5) is not affected by fund size because longer funds take more systematic risks (*Table 4,* columns 6–7) but smaller idiosyncratic risks. Female managers of the funds without manager replacement develop more idiosyncratic risk, which is offset by lower systematic risk, as we observe in the lack of a relation between females and total risk (*Table 4,* column 5).[10]

4.4 Event-Study Results: Significance of Abnormal Returns

In this section, we apply the event-study methodology to analyze the effectiveness of manager replacement. We examine the significance of the abnormal

[10] The inclusion of the gender variable shows the different risk aversion of female managers. Nonetheless, we repeat this analysis with the gender variable removed (given the few observations with this characteristic) and the results remain the same (these results are not reported here due to space constraints, but are available upon request).

returns (excess returns) obtained by the pension funds with manager replacement over the period surrounding the manager replacement date (t). First, we test the significance of the abnormal returns before the manager-replacement date in order to test whether managers act differently before being replaced. Then we test the immediate manager-replacement effect. Finally, we evaluate whether the abnormal returns are different from zero during the window period (some time before and after the manager-replacement date). The window period analysis captures the funds' performance during the whole manager-replacement process (pre- and post-replacement). The pre-replacement abnormal returns show whether managers adjust their behavior until termination because they are aware of the impending event and the post-replacement abnormal returns show the adaptation period of new managers.

Table 5 reports the average abnormal return measures (AR and CAR) obtained from the CAPM (panels A and B) and four-factor model (panels C and D). In each panel, we distinguish between the first and second manager replacements (provided that there that two manager replacement have in fact been carried out). The AR and CAR measures are obtained individually for each fund and then averaged. All measures are reported for a two-year period surrounding the manager-replacement date (columns 2–8). Specifically, we include the abnormal returns in the event month (t) in column 2 and the abnormal returns obtained three, six and twelve months before (columns 3–5) and after (columns 6-8) the manager-replacement month. Columns 9–11 show the abnormal returns for six-, twelve- and twenty-four-month window periods around the change (columns 9–11), i.e. three months before and three months after the change ($t - 3$ to $t + 3$ months, column 9), six months before and after the change ($t - 6$ to $t + 6$ months, column 10) and twelve months before and after the change ($t - 12$ to $t + 12$ months, column 11). The significance tests are also included, under the null hypothesis of no event effect.

The AR analysis (panels A and C) provides no significant abnormal returns before or after manager replacement (the test results are statistically zero), showing that excess returns are not significantly affected by manager replacement three, six or twelve months before or after the replacement date. However, CAR provides some significant results (panels B and D). Focusing on the first replacement results, the average abnormal return is significantly positive three, six and twelve months before the first (or unique) replacement, indicating that managers who will be replaced endeavor to perform better, even one-year before they are replaced. In the post-replacement period, new managers are not able to develop significant abnormal returns (CAR measures are negative and insignificant). Nonetheless, CAR measures are positive in the six- and twelve-month periods surrounding the event (as well as in the three-month period in panel D), demonstrating that manager replacement has an effect in the medium and long term.

With regard to the second manager replacement, it is noticeable that funds present positive abnormal returns twelve months later, revealing that new managers need one year to adapt to the new fund (organization, structure, objectives, etc.). The one-year window period (panels B and D) and the six-month window period (panel B) display positive excess returns in both panels. Consequently, the second manager replacement is more effective than the first and is motivated by, among other things, the absence of positive excess returns after the first replacement. These results are in line with Khorana (2001), who reports substantial deterioration

Table 5 An Event-Study: Abnormal Returns around Manager Replacement

Table 5 is divided into four panels and presents the average abnormal return measures (AR and CAR) obtained from the CAPM (panels A and B) and the four-factor Carhart model (panels C and D) for the two-year period surrounding the manager-replacement date (*t*) in columns 2–8 (column 2 shows the results at the manager-replacement month *t*) and across several event windows around the manager-replacement date in columns 9–11. Specifically, column 9 (*t* – 3 to *t* + 3 months) shows the abnormal return from three months before the manager-replacement date *t* to three months after the manager-replacement date *t*, column 10 (*t* – 6 to *t* + 6 months) shows the abnormal return from six months before the manager-replacement date to six months after the manager-replacement date, and column 11 (*t* – 12 to *t* + 12 months) shows the abnormal return from 12 months before the manager-replacement date to 12 months after the manager-replacement date. All panels distinguish between the abnormal returns of the first or unique manager replacement in the fund and the second manager replacement.

T-tests of abnormal return measures are in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

	t	*t* – 3	*t* – 6	*t* – 12	*t* + 3	*t* + 6	*t* + 12	*t* – 3 to *t* + 3	*t* – 6 to *t* + 6	*t* – 12 to *t* + 12
Panel A AR (CAPM)										
Replacement 1	-0.0015 (-0.009)	0.0071 (0.056)	0.0068 (0.048)	0.0041 (0.03)	-0.004 (-0.034)	-0.002 (-0.015)	-0.0006 (-0.001)	0.003 (0.024)	0.0047 (0.034)	0.0026 (0.02)
Replacement 2	0.0078 (0.022)	0.0075 (0.098)	0.0037 (0.028)	0.0027 (0.021)	0.0092 (0.123)	0.0102 (0.113)	0.0113 (0.09)	0.0082 (0.099)	0.0057 (0.043)	0.0051 (0.038)
Panel B CAR (CAPM)										
Replacement 1	0.0147 (-0.09)	0.242*** (2.607)	0.4317*** (3.99)	0.6573*** (4.583)	-0.1454 (-1.786)	-0.1624 (-1.835)	-0.1577 (-1.412)	0.0941 (0.942)	0.3859*** (3.384)	0.5704*** (3.942)
Replacement 2	0.0421 (0.535)	0.1918 (1.243)	0.161 (0.889)	0.1918 (0.835)	0.1367 (1.305)	0.2106 (1.596)	0.4421*** (3.177)	0.2895 (1.634)	0.3286* (1.743)	0.5763** (2.027)
Panel C AR (Carhart model)										
Replacement 1	0.0038 (0.061)	0.0073 (0.056)	0.0067 (0.045)	0.0047 (0.034)	0.0005 (-0.002)	-0.0016 (-0.009)	0.0000 (0.003)	0.0046 (0.036)	0.0039 (0.028)	0.0034 (0.025)
Replacement 2	0.0004 (0.468)	0.0035 (0.085)	0.0020 (0.023)	0.0032 (0.029)	0.0066 (0.06)	0.0092 (0.072)	0.0119 (0.086)	0.0043 (0.067)	0.0034 (0.035)	0.0046 (0.043)
Panel D CAR (Carhart model)										
Replacement 1	0.064 (1.242)	0.2642*** (2.937)	0.4938*** (4.395)	0.8522*** (5.764)	0.0256 (0.332)	-0.1113 (-1.466)	-0.0029 (-0.042)	0.2435** (2.378)	0.3935*** (3.316)	0.9548*** (6.067)
Replacement 2	0.0078 (-0.008)	0.1398 (0.9)	0.1432 (0.891)	0.2985 (1.414)	0.0795 (0.505)	0.1832 (1.222)	0.4263*** (2.598)	0.2074 (1.064)	0.303 (1.53)	0.6718** (2.408)

of returns for outperforming funds in the pre-replacement period, and with Andreu *et al.* (2015), who find that new managers need some time to improve their results after a manager replacement in Spanish domestic equity mutual funds.

5. Conclusions

This paper aims to reveal the determinants of manager replacement in pension funds. We also examine the relation between returns, risk and manager characteristics when a pension fund experiences manager replacement. Finally, by apply an event-study methodology, we study the effectiveness of manager replacement, i.e. the capacity of new managers to improve fund performance around the replacement date. Specifically, we analyze 98 Spanish pension funds investing in European equities during the period from January 1999 to August 2014. Our sample contains the management history of each fund, which allows us to observe the manager replacements experienced by each pension fund over time.

Our empirical results initially show that manager replacements are not driven by raw returns, but are related to poor excess returns and certain manager characteristics. Specifically, funds managed by teams, females and more experienced managers have a lower probability of experiencing manager replacement.

We also find that managers with longer tenure achieve higher raw returns, but this does not translate into better excess returns, which turn out to be lower. This is apparent especially in funds that do not experience manager replacement and the finding is related to higher risk positions, career concerns and the voluntary departure of managers to better positions. Moreover, managerial structure (team versus single manager) and gender have no significant effect on returns. Funds receiving more flows achieve greater returns, especially after manager replacement.

Managers also take different risk positions in funds with and without manager replacements. Female managers of funds without replacement take lower systematic risk, although this conservative strategy produces higher specific risk. Additionally, larger pension funds develop less idiosyncratic risk regardless of manager replacement.

The event-study analysis displays significant evidence when aggregating results (CAR measure). In the first (or unique) fund-manager replacement, we find that managers strive to improve results before being replaced and new managers are not able to achieve significant excess returns. The second manager replacement is more effective and motivated by the absence of significantly positive excess returns after the first replacement; however, new managers need one year to adapt and obtain positive results.

In summary, this paper provides useful information for pension fund investors about the underlying causes of manager replacement and the consequences for the returns on and risks to their savings. The results show that manager replacement in Spanish pension funds is not motivated solely by poor excess returns and is also linked to manager characteristics, risk-taking behavior, and the financial restructuring process experienced by financial institutions in Spain since 2010.

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