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The Turnover Impact on Pension Funds' Performance: Comparison Between Biographical and Systematic Effect

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Comparison Between Biographical and Systematic Effect

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***ABSTRACT**:*

The main purpose of this paper is to study how Executive Directors' Turnover impacts the performance of Pension Funds in the United States. The sample comprehends 104 US Funds, considering the two largest for each country, in a time frame that goes from 2005 to 2017. As dependent variable was used operating performance, chosen to consider both Pension Fund returns on investments and its size. The analysis examines two different biographical characteristics: level of Education and Prior Job Experiences. Subsequently, it compares and expands the models adding Different Reporting Months and Yearly Benchmark as a systematic variable. While nothing was found about Turnover Year, the paper finds that both Year Before and Year After Turnover impact the returns in a negative way suggesting that changing the management is not performance enhancing. In addition, it seems that reporting in June could have a positive impact on returns, suggesting in this way that Pension Funds that report in that month are biased. Finally, controlling for Public Role as Previous Job Experience could help to reduce the systematic effect of the crisis on Pension returns.

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1. Introduction

In the year 2016, the asset under management of the world's largest pension funds were 15.7$US trillion. In that year, all the major asset classes were marked by positive market returns helping in this way to improve the general position of Pension Funds. Despite a general period composed by diverging monetary policy, market volatility and confused political situations, a widespread pensions improvement was counted.

While the sample counted the 300 most capitalized Pension Funds in the world (Pension & Investments[1], Willis Towers Watson[2]), we are interested in analysing the situation of the American Pension Funds. The evidence shows that North American remains the region with the highest amount of fund in the ranking, counting 134 over 300 funds. Apart from this, the latter seems to account for both highest amount of asset under management (44.1%) and the most remarkable growth (6.7%) over the sample.

In this way, the aim of the paper is to find and investigate if the specific characteristics of managers have a general impact on the generation of returns. Of course, the management of Pension Funds is an extremely complex job that generally need a mix of education and years of experience. Before talking about these two intrinsic characteristics, that are part of the investigation of the paper, we should account for other factors that influence returns and decision making of Executive Directors.

As mentioned before, events like market volatility, political situation, crisis, etc. can influence market returns or change the asset allocation of pension funds. Indeed, Pension Funds are struggling to survive to the underfunding, facing obstacles to guarantee certainty to the young generation. Factors like longevity risk due to the increase in life expectation, birth rate and mortality in different countries and inflation are exogenously affecting the pay-out ratio. These situations leave Pension funds to solve these problems and find alternatives ways to raise money. Consequences and researches about the new scenario are already in places. Andonov, Bauer and Cremers (May 2012) found that in the past two decades, American retirement system applied riskier strategies[3] in investment allocation when the number of retired members increased.

Besides the exogenous variables that could impact the Fund's strategies in asset allocation, we find that different policies and governance models should lead to different outcomes in investments and decision making.

[1] Pension & Investments refers to www.pionlie.com

[2] Willis Towers Watson refers to www.willistowerswatson.com

[3] US Pension Funds are authorized to discount their obligations by their rate of returns form their investments. In this way riskier asset classes lead to potential understate of liabilities.

Concerning the link between asset allocation policies and plan performance, Brinson, Hood and Beebower (1986) found that over 90% of variability of Pension plan performance is due to asset allocation policy. Regarding policy, as already mentioned by Clark and Urwin (2009), a lot of Plans have followed the codes of best practice[3] rather than set up their own governance. Instead of being independent with their own codes or simply following other models for the pursuing of the best performance, they relied to the most commons worsening the quality and stability of the funds

Although, different kind of governance can influence decision making of subjects within the Pension Fund, the most important figure in generating returns is the CEO[5]. It is possible to describe this figure as the highest position in the fund. In the CEO are concentrated leadership responsibility for the activities that concern the fund as entity. His main tasks concern: running the Pension plan in the most strategic way, acting in order to improve the conformity to policies of the fun, the team building of executive with which he will manage the business of the fund and the management of the stake holders for their needs (OMERS Administration corporation 2017[6]).

In this way, it seems that CEO has a delicate role that is poised among both several roles and parts. So, how can trustees learn to trust Pension fund CEO? It is a basic question already investigated by Fundon and Miller (2014). The main answer was to: hire the best, give them the authority and control and warn them that they are reliable for performance and get an assurance that he is doing his job in the best interest of the fund.

One of the topic of interest of this paper is the turnover of the CEO associated with the life of the fund. Huson, Malatesta and Parrino (2003) inquired into that subject examining CEO turnover associated to the financial performance for several time frames. Their conclusion was that significantly positive abnormal returns coincide with turnover announcement and the same applied to year after while deterioration prior to CEO turnover.

In doing this, Huson, Malatesta and Parrino, reviewed the work done by Denis and Denis (1995). As pioneers, they investigate the same area checking instead event characteristics like: if the resignation was forced or normal, composition of the board and if there were takeovers attempts.

[4] Best Practices described by Clark and Urwin (2009) as agendas, meetings, board committees, tenure and compensation.

[5] The sample carefully consider as CEO the person in charge and above of the Management team.

[6] OMERS refers to Ontario Municipal Employees Retirement System

Mainly they discover that forced resignation of top management are preceded by large and significant declines in operating performance and followed by large improvement in performance. The conclusions of the previous two papers will be partially confirmed by the paper, having obtained the same result for year before but the opposite for the year after. Concerning turnover year, nothing will be found.

Denis and Denis' innovation to the previous literature was the operating performance as a measure of returns, idea that we consider also in this paper. As a first attempt to analyse a new scenario, the aim is to bring something new as a contribution. As mentioned, in the research was used the accounting measure[7] instead financial performance. The main difference is that while the first use the daily stock returns, the latter considers the annual return of the fund. This measure is an optimal to take into account both the returns generated during the fiscal year and the dimension of the Pension fund.

For what concerns the CEO characteristics, I decided to use different kinds of both instruction ad prior job categories as the main determinants so that every CEO is a unique combination of these two.

Golec (1996) did the same research wondering about the CEO characteristics (among which MBA and tenure) on the performance, risk and fees of mutual funds. Basically, his finding discloses that the CEO characteristics have an impact on performance and most of all, investors may expect a higher risk adjusted performance from managers with an MBA. More specific, Shukla and Singh (1994) discovered that CFA-chartered managers outperform their peers in the other funds. Instead, Chaudhuri, Ivkovic, Pollet, Trzcinka discovered that Phd holders are superior in performance, investments flows, strategies and lower fees. This paper enriches the previous researches widening the range of study titles, checking different degrees and fields of education. This includes observation like: Bachelor, Master, MBA, Master in Public Administration (MPA), Ph.D, Juris Doctor (J.D.), Chartered Financial Analyst (CFA) and Certified Public Accountant (CPA). Widening the range had the ambition to detect if a specific qualification had a superior explanatory power over the remaining. Although this depth diversifications a mixing evidence is provided in the analysis saying that Bachelor has a negative impact on returns and Master a positive one, leaving the other not-significant.

Another important question is: if the CEO's turnover impact the returns of the funds, do they have a prior work experiences in their curriculum? It seems that no previous literature exists for this topic linked to the turnover and/or pension funds.

[7] Accounting returns were computed as the ratio of net investment income and net asset position at the end of the year.

Songnan Huang, Jing Shi, Lu Zheng, Qiaoqiao Zhu (2015) investigate their peer mutual funds focusing in China. They fund that in investments, prior working experiences affect manager's investment style and performance. Moreover, further analyses suggest that they possess information advantage through prior work experience. In contrast, managers with experience in other investments generate high raw returns largely by holding more systematic risk and chase momentum.

The research wants to see if there is a correlation between returns and experiences gained by managers in the previous job roles. This involves a first division in most common job categories: Asset Managements, Public Role, Previous Pension Fund Experience, Consultancy and Insurance. Surprisingly the conclusion from the analysis supports fully the conclusion of Songnan Huang, Jing Shi, Lu Zheng, Qiaoqiao Zhu (2015). As it will be seen controlling for Public Role leads to the systematic effects of the crisis in 2008-2009,2011-2012 and 2015-2016 to disappeared. Moreover, this move the systematic effect to be shifted to other years that apparently do not count any important systematic events.

As last step of contribution, different Reporting Month[8] and Yearly Benchmark[9] will be added as a control variable to improve the explanatory power of the model. To my knowledge no other papers investigate so thoroughly this impact specific for the pension funds field. The main question posted before the addition of control variables was: is there any common trend that pension funds follow, or returns are generated by the abilities of CEO? As it will be seen, it will be consolidated from analysis that reporting in June has a positive impact on return generate. Additionally, a systematic component explains the returns generated by them leaving the other variables not so explanatory

The paper proceeds as follow, in section 2 I will describe the literature review existing for the main topics of the paper: Turnover, CEO characteristic in two dimensions: Education and Prior Work Experiences. Section 4 present the research design which provides variables description and the methodology used to for the analysis. Section 5 explains states the results of the analysis while Section 6 provides an overall conclusion of the paper.

[8] It seems that Pension Funds have degrees of freedom in decide when to report. Reporting Months considered: March, June, August, September, December.

[9] Yearly Benchmark is statistically considered as year fixed effect.

2. LITERATURE REVIEW

It seems that a higher majority of the literature is focused in investigating the role of Turnover, Executive's education and Executive's previous jobs in a separate way. Instead of trying to combine the Executive characteristics in an aggregate way, the previous literature is more prone to check the single-feature-effect. While the purpose remains the same, that is discovering a correlation between returns and the characteristic, the approach is completely different. Indeed, the paper has the aim to aggregate several biographical features together in order to see a pattern or a basic demonstration that impact returns. Considering the leakage of previous researches in this macro area, the literature review struggles to get ideas from other released papers. The researches of this paper include three main topics: Turnover Event as a way to improve returns, Executive's Education as a background to choose the best manager for the fund and Executive's Previous Jobs as a patter to choose the best manager of the fund. Additionally, they were added also Different Reporting Month and Yearly Benchmark even if no literatures were considered.

One direction of this research is the basic question if the manager's Turnover has an impact on the returns generated in pension funds. In the past a lot of authors investigated the Turnover-topic, linking it to several subjects, for example: ownership structure and turnover[10], takeovers and turnover[11], compensation and turnover[12] and so on. However, in doing this they focused almost always on two precise dimensions: publicly listed companies and financial performance. This paper instead gives a new contribution to the research relying at the opposite on: non-publicly listed company and accounting performance.

Denis and Denis (1995) put the basis on what this paper want to investigate. Basically, they documented that forced resignation of Directors is preceded by significant decrease in operating performance but followed by a wide improvement. This lead to say that following the management changes the fund can have positive feedback. Of course, the paper represents a starting point to the new researches. In fact, Denis and Denis considered the nature of resignation dividing it in normal and forced considering the difference in returns generated by them. At the opposite, this one is more prone to generalize the Turnover without detecting the main causes. A precious inspiration taken from Denis and Denis is the use of the accounting performance in order to control for the firm returns.

[10] Referred to Denis, Denis, Sarin (August 1997)

[11] Referred to Huson, Malatesta and Parrino (2003)

[12] Referred to Bryant, Allen (2013)

While the two authors applied the accounting performance using the operating income to total asset ratio, this paper refers to the investment income to total asset ratio. The main reason for that is to put each fund on the same level given the difference in firm's size.

After that, the work done by Denis and Denis was extended by Huson, Malatesta and Parrino (2003)[13]. The authors considered a sample using Director in Forbes List, counting 1334 Turnovers from 1971 to 1995. More precisely, they looked to the Director's Turnover related to firm financial performance linked to the composition of the Board of Directors. One of the main conclusions was that financial performance seems to deteriorate prior to Director's turnover, this indicating that the Board of Directors is used to "punish" poor performance by replacing the Directors. Secondly, it was seen that significantly positive abnormal returns coincide with turnover announcement. Thirdly, they showed that turnover announcement is positively related in changes in operating performance calculated using accounting numbers. This represents a great contribution and the closest research to this paper. Indeed, both the first and the third point in the conclusion of Huson, Malatesta and Parrino are results that this paper try to pursue and conclude at the end. Furthermore, the main contribution is the employment of this analysis and conclusion to a non-publicly-listed category of firm, pension funds.

While Huson, Malatesta and Parrino represent the leading paper to consider, also Khorana (1991) depicts a great reference point. Basically, the author examined the mutual fund manager replacement and subsequent fund performance. The paper documented post replacement performance relative to the previous one. Moreover, he discovered a significant risk shifting difference comparing after and before replacement and a reduction in net inflows precedent to poor performers. I decided to consider also this literature due to the similar nature of mutual fund and pension fund, trying to get ideas and to check a possible similar behaviour between them.

One dimension that Huson, Malatesta and Parrino (2003) considered was the presence of Board of Directors. Although the structure of this one could change from industry to industry and while this dimension is not investigated in this paper, it is useful to cite previous researches spent in the pension fund field. Moreover, it is useful to introduce this topic because it presents almost a criticism to ability to generate returns by Managers in the funds.

[13] Huson, Malatesta and Parrino (2003) considered also previous turnover studies on financial performance from Warner et all (1998), Fee and Hadlock (2003), Kim (1996) compared to operating performance from Hotchkiss (1995)

Brinson, Hood and Beebower (1995) in their paper wondered about which investments decisions is most important in generating returns and their variability. In doing that, they investigated several dimensions like: investment policies, market timing and securities selection. The main evidence was that investment policy return explained 90% of returns and their variations. This conclusion posts a serial doubt on the incidence of the new Manager after the turnover removing every possible incidence between returns and educational-job experience. The main conclusion of the previous paper was confirmed in a similar way by Adams, Hermalin, Weisbach (2010). Having considered several previous discoveries in that field, they conclude saying that understanding the role of Boards is crucial with respect to setting policies to regulate corporate activities.

To give support to these two latter papers, a more recent confirmation was provided by Clark and Urwin (2009). The empirical research applied most of all to UK pension funds in the crisis scenario confirmed the previous statement: governance is problematic. This assertion was due to the situation in which plans simply adapted to Codes of Practice instead of formulating their own governance, creating in this way a suitable operating standard. The main result in fact was the worsening the stability of funds.

The main conclusion that we could draw is that governance plays an important role in the life of the fund. The main implication is that at this point generating returns could be hardly explained by the Manager skills gained in their previous advanced education or jobs categories. Nevertheless, the underlying literatures is wide but not so stable in generate a straightforward conclusion. In this way the aim of the paper is to check a possible correlation between skills and returns, considering Directors as the figure in generating and leading the Pension Fund.

Another direction taken by the paper is the biographical investigation of managers of the funds trying to find an explanation on performance. To this extent, they were considered the two most important dimensions for selectin a new Director: instruction and previous job experiences.

A growing literature is providing support to correlation of instruction and abilities to generate returns. Golec (1996) was one of the first in investigating this type of correlation, providing at the end a great contribution to this paper. His sample comprehends 530 of 979 mutual funds listed on Morningstar Inc., in a period from 1988 to 1990. In studying manager's characteristics to explain fund performance, he found that it is significantly impacted. More precisely, it can be expected a higher performance form manager with an MBA and a longer tenure in the same fund. Moreover, he pointed out that managers with an MBA charged less management fees respect to the other.

Chevalier and Ellison (1996) confirmed the results achieved by Golec[14] in his paper. It seems that over MBA, also Manager youth and university SAT[15] score have an impact on returns and risk-taking behaviour.

This represents an important starting point to consider for further investigations. While the previous paper considers just the MBA and the tenure variables, this paper does not consider the tenure preferring instead to extend the level of education. Indeed, the Master category consider further observation over MBA like: common Master and MPA. Furthermore, due to the lack of a basic literature underlying pension funds I decided to consider mutual funds as a good match do to their nature.

Another important contribution was covered by Shukla and Singh (1994), which they shed light on certification level, Chartered Financial Analysis (CFA). In the equity mutual funds considered form July 1988 to December 1992, the fund managed by CFA managers increased riskier (both systematic and total risk) strategies but were more diversified than the others. Moreover, the CFA-Managers outperformed the other funds. Considering the main find of the paper, I decided to deepen the research adding also the Certified Public Accountant (CPA) as certification. The comparison has the intent to consider the different nature of the two certifications.

The last consideration goes to the recent research done by Chaudhuri, Ivkovic, Pollet, Trzcinka (2014). Their work was centred in discovering the main effect oh holding a Phd by managers. In doing that, they tested a sample started in 1993 to 2007 that considered 531 Phd-holder over 21,313 managers in money management companies. The main conclusion of the research was that Phd-holders outperformed the others in several levels. Indeed, superior investment performance, lower products fees, higher investment flows and pursuit of quantitative strategies are achieved by Phd-holders compared to remaining not qualified managers. While this result is one of the main purpose of the paper, trying to investigate a correlation between higher education and performance, another dimension is added. Considering Phd as a qualification linked to the economic field, I decide to ad Juris Doctor as a counterpart for law field. This decision considers the nature of Director 'activities that often rely on both economics and law knowledge.

Additionally, a last purpose and contribution of this paper is to examine the relationship between previous jobs done by managers and returns generated. As applied to the other previous topics, it can be found a wide literature concerning this correlation but unfortunately, an inexistent one for pension fund Managers case.

[14] Golec (1996) demonstrated also the managers with an MBAs delivered large beta without any increase in residual risk.

[15] Required tests for US college.

Kaplan, Kleblanov and Sorensen (2012) investigated a similar topic, focusing on the relationship between individual CEO characteristic and firm performance for companies involved in buyout and venture capital transaction. The dataset considers 316 CEO in 224 companies and considered as personal characteristic these dimensions: efficiency, network, analytical skills, strategic vision, attention to details, teamwork, etc. Although the authors criticize their own paper arguing that the measures could be subjective and limitative, they fund that performance is positively related to general ability and execution skills. Kaplan, Kleblanov and Sorensen were an inspiration rather than a reference point for the paper, this due to the different directions taken in the variable investigated. Indeed, while the first investigated personal characteristics already cited, this one considers previous job experiences of managers.

The scenario investigates managers' Previous Jobs Experiences dividing them in: Asset Management, Public Role, Previous Pension Fund Experience, Consultancy and Insurance. As "Public Role" treats a previous experience in State departments, Government offices and City services I decided to consider as a reference point papers that consider the political nature of this job. Indeed Andonov, Hochberg and Rauh (2016) analysed the correlation between political representatives in public pension board and the consecutive investment performance. The main finding was that the pension fund performance was negatively related to the presence of this politicians. Although this conclusion, other authors fund a different result. Over than Faccio (2016), Fishman (2001), Wu, Wu and Rui (2010) and Cooper, Gulen and Ovtchinnikov (2010) a significative impact was given by Songnan Huang, Jing Shi, Lu Zheng, Qiaoqiao Zhu (2015). Basically, they tested that previous work experience of managers is a key factor during hiring decision process. Investigating mutual funds managers comparative advantage, they found that different career background has an impact on performance. Most of all, managers with a government background are able to take less risk and provide higher returns. The two most important findings are that managers backgrounds are important in providing information advantages in the current job. Secondly, having an experience in investments generate high returns but taking more risk. As the purpose of this paper is to find a correlation between previous background and performance generated, the conclusions discussed by Songnan Huang, Jing Shi, Lu Zheng, Qiaoqiao Zhu (2015) provide a baseline to consider. Although the sample consider Chinese mutual funds, we try to find a similar pattern for their peers, pension funds.

In summary, this paper will provide new insights and evidences to the pension fund topic. Due to lack of previous literatures in most of the topics treated, the literature review is used often to get tips for investigation and new approaches. In doing that, the paper firstly starts analysing a possible correlation between Manager turnovers and returns generated in both year before and after. Secondly, it considers biographical personal data of managers in order to check a correlation between their features and returns.

In analysing it, I decided also to monitor possible cumulative degree levels and previous experiences together. Consequently, I will do the same checking a possible correlation between previous experiences and single-asset class-return.

3. RESEARCH DESIGN

3.1 Data end Variable Introduction

Basically, the paper obtains the data about the pension funds and the associated characteristics of managers from the annual reports and the information founded online. While the data regarding the performance are provided every year from the annual report of the fund, the descriptive characteristics associated to managers are often separate and disperse. Indeed, the manager biography is rarely included in the annual report or in the fund site leading in consequence to rely on specific site like Pension & Investment (P&I) or social network profile like LinkedIn.

The dataset consists of a matched information about the fund performance and the manager characteristics in a determinate time frame that range from 2005 to 2017. Therefore, we consider just the managers that are in the office in that time period and not the whole set of managers that ran the fund since the beginning. Due to the prior specifications, we should introduce the Turnover variable as "any changes in the identity of the of the president or the chairperson that result in a change in the composition of the top management team as a whole" (Denis and Denis, 1995).

I will focus on a list of 104 pension funds (table 1) within the United State (with at least one fund observation for each country) accounting for a total of 229 Executive Directors[16] and 146 Turnovers, looking to 2005-2017 timeframe.

For the analysis, I considered Executives that were in charge from 2005 until 2017. In doing that I checked Comprehensive Annual Financial Report (CAFR) that is a financial statement that disclose information to investors, public and other parts about how the public finance is managed. The CAFR is published every year to promote the transparency of the health and performance of the fund.

Every manager is associated with a determined amount of years spent in the pension fund. Every time that that a manager leaves a new one replaces him, considering that event as a Turnover. Furthermore, the new replacement could be considered as an Interim Director (defined as a position filled by an employee on a temporary basis to cover the replacement of the director) or "Definitive" Director (considered the new director of the fund).

Usually, Interim Director is put to cover some months or one year at most after the retirement of the Executive. However, it is quite common to see the new Director starting as an Interim and, after the one year, becoming the new Definitive Director. Interim Directors are included both in the dataset and analysis but due to the leakage of information about the tenure, they are considered one year lasting.

[16] The number of Executive Directors consider both the Managers with biographical information and without. Descriptive statistics in the appendix clarify the division.

Concerning the biographical information of Executive Directors, they are collected manually from different sources, from databases to social networks and from Funds homepage to basic websites. Listing from the most to the less detailed:

- As Social Network, it was used LinkedIn. This one was the most detailed source of information about the characteristics that was needed. Indeed, thinking about the social network concept, Directors introduce their selves to the world making networking and leaving the "door open" to new jobs. Given that is a personal profile, Directors have a lot of incentives in providing specific information about bot their current role, education and achievements. This was an excellent source for what pertains to the previous experiences before getting the funds.
- As Funds Homepage, it was used the web page that collect general info of the funds. This one provided a medium level of information about the timeline of the managers and their biographies. Moreover, these ones highlining the main goals accomplished during their tenure and the future of the Directors after that he left the fund.
- As Basic Websites, it was used mainly Pension & investments. This one provides a medium level of information about the main events and news within the Pension Funds. Indeed, this page was concretely important in providing specific details about the starting and cessation date of the Executive and the main reasons.
- As Database, it was used Bloomberg Investor Service. This one provided poor level of information about the most famous or latter Directors of the fund, showing synthetically the education and previous experiences gained.

Based on biographical data, the research has found the following variables:

3.1.1 Describing top Management changes – Turnovers

As mentioned above, we can describe Turnover relying on the definition provided by Denis & Denis (1995) as "Any changes in the identity of the president or chairperson that results in a change in the composition of the top management team as a whole ". Given that the main purpose of the paper is to investigate how the changes in the Management impact the return of the fund, it is important to divide the "history" of the fund in different periods governed by different Executives. This kind of information is provided yearly by the CAFR of the fund in the Introductory section which shows the executives in charge and their respective mansions.

Basically, the Turnover variable is built comparing the reports year by year and looking if the Director remains the same or not going further. Additionally, I started counting after that the first Manager left.

As can be seen in figure 1, I divided the 103 funds sample for number of turnovers inside that ranged from a minimum of 0 to a maximum of 5 turnovers in the period 2005-2017. The 0 variable describes a situation in which the fund does not experience any change in the Director position, having the same one for the timeframe considered. Ultimately, we can say that the number of turnovers correspond to the number of managers that governed the fund minus one, that correspond to the first Director.

The figure says that the just 22 funds (21.4%) experience zero turnovers remaining with the same manager for the whole period. One turnover affects the largest percentage of the funds (37%) while two turnovers reach the second position in the ranking. As the number of turnovers increase, the amount of funds that experience this event decreases, proving a negative relationship between the two variables. It is quite understandable for the situation that the turnover event has considerable consequences on the fund, leading to say that the purpose of the latter is to gain a stable situation. In this paper I will examine how the turnover of the Managers will impact the returns of the fund so understanding the best scenario that the fund what to achieve.

3.1.2 Describing top Management Education – Bachelor, Master, MBA, MPA, Phd, J.D., CFA, CPA

Checking the biographies, I was able to identify and collect the level of manager's education obtained in their university career. The most observed variables are: Bachelor, Master, MBA, MPA, Phd, J.D., CFA, CPA.

The table 2 caters a descriptive statistic about what kind of title is most common in our sample composed by 239 Managers, 176 education-known and 53 education-unknown Managers. As we can see the most popular degree among director is the Master in Business Administration (MBA) that accounts for 46 observations (26.1%), followed by general Master that represent 41 observations (23.3%) and Juris Doctorate that is slightly smaller with 39 observations (22.2%). Looking to the remaining variables, they are widely smaller than the previous ones, respectively: 6.3% for Master in Public Administration, 2.8% for Phd, 2.8% and 3.4% for CFA and CPA. Table 2.1 provides an accurate description about the level of overlapping among these variables in a single manager. While every director obtained a bachelor's degree (we could say that the nature of Executive Director role imposes to have at least a basic university education), it could be possible that Directors have also an additional degree title or certification.

Looking to the Figure 2 we can derive a basic conclusion, deducing that Board of Directors has dominant preference for Directors that have obtained a Master in the past. The grouping shown, split the levels of education in Master, Doctorate and Certifications containing the main degrees observed in the sample. As mentioned before, the basic conclusion is that Master pillar dominates the graph with a cumulative observation of almost a hundred of Managers. Subsequently we find Doctorate and Certification pillars, with respectively 44 and 11 observations.

Overall, the figure depicts the main specialization once and after the bachelor's degree is obtained. In this way bachelor's degree is removed from the figure but considered in the analysis.

Another possible division and explanation of Education sample is the one shown in the figure 2.1. Fundamentally, here is depicted a macro split between area of studying: Economic and Law education. The main decision for the division was due to the nature of the degree, noticing that no other Director hold other kind of education. Looking at the figure we observe a remarkable difference between the two pillars. Economics education counts 92 observations against almost the half of Law education. I have voluntarily removed the bachelor's degree and its nature considering just the advanced level of education, not the basic. Despite this, the latter was considered during the analysis.

The following variables are used in the model to investigate an impact on returns:

1. *Master's Degree*

   A master's degree is considered an academic degree achieved upon the completion of 1 or more years program (depending on the nature) in a specific study field. In order to be eligible to take part to a Master, the candidate must already hold a bachelor's degree, related or not to the Master field. Master's degree is considered an advanced degree of specialization for both theoretical and applied knowledge. Looking to the data, 41 Managers out of 176 hold a master's degree, representing the 23.3% of the sample. The evidence demonstrates that the most common specializations of the Master are: finance, accounting, mathematics and economics.

2. Master in Business Administration (MBA)

   An MBA is a degree originated in USA that could be achieved upon the completion of 1 or more years. To be eligible for the admission, the candidate must already hold a bachelor's degree, related or not to the MBA field, interviews and letters of recommendation. Another important criterion is the previous and significative work experiences and the years spent on these. Due to these requirements we could hypothesize that Manager with MBA have a strong applied knowledge due to the work experience and theoretical knowledge due to the master specialization. Looking to the data, 46 managers out of 176 hold an MBA, representing the highest percentage in education (26.1%). We could argue that, given the complexity of Executive Director role and the higher specialization of the MBA, the higher percentage of MBA compared to other education degree was expected.

3. *Master in Public Administration (MPA)*

   An MPA is a degree similar to the Master in Business Administration (MBA) but with particular relief on the governance issuances and public policy management. MPA Program is designated as a degree for public sector that prepare the candidates to perform duties that concern legal and management aspect of: local, state, provincial arms and federal and national governments. The main duties of this kind of master are: public management, economic development, community and cultural policy. Looking to the data, 11 managers out of 176 hold an MPA, representing a medium percentage (6.3%) compared to the other degree variables. Despite the specificity and suitability of this type of degree for the Executive Director role, the percentage says that other degrees are preferred.

4. *Juris Doctor (J.D)*

   A Juris Doctor is the highest level of education available in order to exercise the legal profession in US, Australia, Canada. Also, in the case of J.D. candidates with different backgrounds can get it. While the already mentioned degree range form from 1 to at most 2 years, J.D. has a fixed length of 3 years. Looking to the data, 39 Managers out of 176 hold a J.D., representing the third most common level of education (22.2%). Preceded just by MBA and standard Master by just a slight difference in amount, it seems that Board of Directors keeps in consideration lawyers figure for Executive Director role.

5. *Doctor of Philosophy – Phd*

   A Phd represents the highest academic degree achievement by university in most of the countries. To be considered for the admission to this program, the person need to be obtained outstanding results during the bachelor or master and present a project demonstrating the ability to give a determinant contribution to the specific field. The length of a Phd can range from a minimum of three years to a maximum of eight years. The Phd title gives access for employment as university professor or researcher. The main difference between J.D. and Phd is that while the first one is specific for the law discipline, the second is open to more disciplines (in this case to different economics disciplines). Looking to the data, just 5 Managers over 176 hold a Phd, representing a small percentage of the sample (2.8%).

6. *Chartered Financial Analyst – CFA*

   The CFA is a three-level certification offered to financial and investment professionals. The certification tests the professionals on several topics of financial area like: financial analysis, investments, stocks, bonds, derivatives. The requirements to take part and become certified is to

have a mixed amount of years between education or relative work experiences. Looking to the data, just 5 Managers out of 176 hold the complete CFA certification, representing 2.8% of the sample.

7. *Certified Public Accountant – CPA*

   The CPA is a certification and title for a public accountant, giving you the license to provide public accountant in the US. As the CFA certification, CPA tests professionals in several financial areas like: regulations, auditing, corporate finance, planning and reporting. As the latter certification, also this one has requirements due to previous education and work experience. Looking to the data, just 6 managers out hold 176 hold the CPA certification, representing 3.4% of the sample.

3.1.3 Describing top Management work experiences – Asset Management, Public Role, Previous Pension Fund, Consultancy, Insurance.

As mentioned before, once that I had to find information about previous work experiences, LinkedIn was the most useful source of data concerning the timeline of the Directors' jobs.

I found a common pattern of previous Manager's work experiences that are synthetized in Table 3. As you can see the macro division is the following, ranging from the higher amount to the lower: Public Role, Asset Management, Previous Pension Funds, Consultancy and insurance.

The main evidence from the Table is that Public Role experience dominates the sample with 105 managers out of 178 Managers, representing almost 60% of the sample. As I will describe successively, this variable groups together managers which gained experience in government or public entities like State departments, Government offices and City services. Asset Management and Previous Pension Funds are largely smaller than the first variable but have almost the same number of executive with this experience, covering 32% and 31,5% respectively. Consultancy and Insurance experience seem to account for the smaller portion of the sample having just 28 and 12 over 176 managers. The sample is composed by 229 Directors of which I have no info about 50.

The following variables are used in the model to investigate an impact on returns:

1. *Asset Management*

   This variable indicates if the Manager had an experience in investing cash flow or managed a security portfolio. As mention before LinkedIn and Bloomberg Investor Services gave the most detailed information, providing the job position in addition to the company where they worked.

   In deciding to count the variable "Asset Management" experience associated to a manager I have filtered for several main keywords in the job position like: asset, investing, wealth, portfolio.

Sometimes happened that different keywords were encountered, specifically the ones related to the specific function within the asset management experience. In this way I decide to widen the range of keywords including also the specific asset class[17], for instance: *Equity, Fixed Income, Private Equity, Real Asset, Hedge Funds.*

2. *Public Role*

In the beginning, I used the term Public Role to define a variable as "everything public except previous experience in pension funds". I did this in order to check if there was any significant correlation prior to join the pension fund, so to find a kind of pattern that Board of Directors follow to hire an Executive Director. A basic patter was found, observing that the Directors that had an experience in the Public Sector experienced this in: State departments[18], Government offices[19] and City services[20]. It seems that prior to become executive director, there is a substantial involvement in the state or city politics life. Indeed, looking to the Tables, we are able to see that the majority of Directors have a prior experience in that field, joining 105 Directors over a sample of 178. Given the large amount of role covered and the departments variety within the category, the Public Role is taken as a whole. Therefore, checking in conclusion if a previous involvement in Public Role has an impact on returns.

3. *Previous Pension Funds*

As the name suggests, this variable counts every Directors which experienced a work experience in a pension funds prior to become the Executive director of the pension fund. Specifically, the variable takes into account both if the Director had a previous experience in another pension fund as a Director and as a "simple employee"[21]. The sample shows that 56 directors out of 178 were directors of a pension fund in the past, prior to become the current Director of the new one. The variable should be very helpful to explain the depend variable (returns) supposing that the prior experience may have adequately enriched the Director with skill about how manage a pension fund.

[17] Specific keywords decision linked to the main asset classes in the pension fund's portfolio.

[18] For Instance Treasury and Court of Appeals.

[19] For instance Cabinet and State Assembly

[20] For instance Department of Commerce, Department of Criminal Justice, Department of Tourism.

[21] Decision due to avoid small sub-group and to avoid multicollinearity.

4. *Consultancy*

   The consultancy variable was included to counts every time that a Manager had an experience mainly in financial and the accessory services. The common experience of the Directors covers the multinational companies of professional services: KPMG, PriceWaterhourseCoopers, Deloitte, Ernst & Young and Arthur Andersen. It is shown that 28 Directors out of 178 had this kind of experience, representing 15,7% of the sample. Due to the variety of mansions covered by that kind of company, the Consultancy variable just explains that Managers had several exposures to different kind of industries, firms and sectors. Due to the Consultancy nature the new Director had the chance to see different scenarios, useful from an eclectic investments knowledge.

5. *Insurance*

   The insurance variable is the one in which directors had less experience. Based on the sample this one appears just o 12 Managers out of 178, figuring as the lowest percentage (6,7%). I decide to gather the data and to insert this variable due to similar role of the pension fund and an insurance company. While the first one accumulates and plans the wealth in a time frame depending on the amount of fund's retired, an insurance company accumulate wealth depending on the time frame that the insured stay with them. Directors in both case must accurate e put a lot of weight on the time frame.

3.1.4 Describing Different Reporting Month Variables

Comprehensive Annual Financial Report (CAFR) is considered an informative statement that explicate the financial situation of the pension fund. This one follows the format promulgated by the Governmental Accounting Standard Board (GASB) which provide basic standards for its contents. The information available within the CAFR are directed to individuals that are part of the plan, prospective members, investors and other funds/companies.

The CAFR consist of three main sections: Introductory, Financial and Statistical. The Introductory Section contains subjective information provided by the management of the company. The main purpose is to include highlight the accomplishments and provide the information about the profile of the company. Here is listed the table of contents, list of officials and organizational chart. Financial Section contains detailed financial information supported by graphs and tables. Finally, Statistical Section allows for historical and operational data to be included.

The Board of Trustee, after the GASB approval, have the duty to publish the CAFR once every year. The GASB requires the CAFR to be completed within six months before the end of fiscal year in order to have enough time to certificate it. While this compelling requirement, nothing is proposed for the publication moment

giving freedom to pension funds to decide when to publish the CAFR. Considering the sample investigated we are able to see that the most common publication dates are: March, June, August, September and December. Looking to the figure 3 we are able to see that the majority of considered funds report in June (69,2%), followed by December (17,3%), September (5,8%), August (4,8%) and March (2,9%).

Linking the percentage to the funds considered it is possible to see a basic pattern of reporting that depend on the nature of the fund. In fact, it seems that December and August are the reporting method associated to Local Pension Funds. While June is used by State Pension Funds, March and its low frequency is justified by just New York Pension Funds as users. Finally, September seems mostly used by Investment Boards or Department of Treasury. It could be argued that if a specific month will impact the model in a positive or negative way, reporting in that month could bias the performance of the fund.

3.1.5 Describing Benchmark variables

Benchmark variable represents a fixed effect associated to the years investigated in the regression, from 2005 to 2017. Basically, it represents a dummy that captures the impact that years have on returns. In this way we want to investigate if years considered are statistically significant in our model. In our specific case, the main purpose is to set up a yearly benchmark to check for common trends in returns. For instance, it could be possible that in a specific year a pension fund could experience negative return. Setting up the fixed effect for the year we investigate if the event is shared between the other funds, discovering in this way a kind of common pattern.

Considering figure 4 we are able to see that given the wavy trend in the years, this will impact the returns. In fact, we could expect a significant and negative impact from 2008,2009, 2012, 2015 and 2016 while a positive impact form 2007 and 2011. This finding is in line with the recent crisis happened from 2007 to 2009 (Subprime Mortgage Crisis), 2011/2012 (Stock Market Falls), 2015/2016 (Russian Oil Crisis). Possible explanations to these linkages are due the investments done in different asset classes by pension funds, locally and internationally. In fact, the first is due to an exposition to the local real estate market, the second one mainly to local equities and the last one probably to international commodities.

3.2 Hypothesis & Assumptions

The suggested assumptions consider the conclusions proposed by previous researches done in the same topics. Despite the different nature of the funds investigated (usually hedge funds and mutual funds) we try to find a similar pattern of conclusions in this new research.

- *Turnover, Year After, Year Before*

    - Huson, Malatesta and Parrino (2003) considered a sample composed by 500 largest publicly traded companies. They considered the CEO in Forbes list counting 1334 turnovers from 1971 to 1995. One of the main conclusions was that financial performance seems to deteriorate prior to Director's turnover. On the other hand, it was seen that significantly positive abnormal returns coincide with turnover announcement and the year after.

    - Denis and Denis (1995): considered a sample of 1,689 firms covered by Value Line Investment survey. They investigate the same area of Huson, Malatesta and Parrino, providing them a starting point for their researches. Despite the different nature of resignation investigated, we can use their conclusion due to the metric used to measure performance. They document that forced resignation of top management are preceded by large and significant declines in operating performance and followed by large improvement in performance.

    Assumption 1: Given that pension funds try to generate the best returns to match their asset with liabilities, we suppose that series of negative returns lead to bad consequences to Managers. In consequence we suppose that resignation is preceded by a pattern of negative returns. In consequences, we suppose that in the year preceding the turnover returns will be negative.

    Assumption 2: One could wonder that manager need to settle in with the new way to invest, governance and new asset classes so negative returns could be expected. On the other hand, one could argue firstly that given the bad returns generated the year before it would be easy to improve the situation. Secondly, due to the accuracy of the manager selection, the new managers should have the necessary skills to improve the situation. In consequences, we assume positive returns in turnover years

Assumption 3: Concerning the year after the turnover, we suppose that manager will be able to generate positive returns. This due to the year spent in the fund to get settled with the principles of the fund and leaned the best strategies that suit most the specific pension fund. In this way we suppose positive returns in the year after turnover.

- *Educations*

  - Golec (1996): His sample comprehends 530 of 979 mutual funds listed on Morningstar Inc., in a period from 1988 to 1990. The purpose of his study was to test whether mutual fund managers' characteristics help to explain fund performance, risk and fees. Results show that a fund's performance, risk and fees are significantly impacted by its manager's characteristics. All else equal, investors can expect better risk-adjusted performance from younger managers with MBA degrees

  - Shukla and Singh (1994): In his study of mutual funds for the period of July 1988 to December 1992, the funds managed by at least one CFA-designated manager were riskier but better diversified than the other funds. The funds with CFA-chartered managers also outperformed the other funds as a group.

  - Chaudhuri, Ivković, Pollet, Trzcinka (2014): they tested a sample started in 1993 to 2007 that considered 531 Phd-holder over 21,313 managers in money management companies they tested a sample started in 1993 to 2007 that considered 531 Phd-holder over 21,313 managers in money management companies. Testing them, they found gross performance of investment products managed by Ph.D.s is superior to the performance of non-Ph.D. products matched by objective, size, and past performance for several performance measures.

    Assumption 4: Given that the management of Pension Funds is an extremely complex job that generally need a mix of education and years of experience, we could assume that the effect of the turnover on the returns can be highly variable due to the manager's education. We suppose that titles like MBA, CFA and Phd will have a great impact and significance both in the turnover and in the year after, trying to find a similar conclusion to previous papers.

- *Previous Job Experiences*

    - Huang, Shi, Zheng, Zhu (2016): Examined a sample of Chinese mutual funds. In investment, prior working experiences affect managers comparative advantage (accumulate along their career paths) and therefore their investment style and performance. Notably, government backgrounds show higher risk adjusted returns while taking on less systematic risk. Further analyses on holdings characteristics suggest that they possess information advantage through prior work experience. In contrast, managers with experience in other investments generate high raw returns largely by holding more systematic risk and chase momentum.

      Assumption 5: We suppose that previous experiences like Asset Management and Public Role could impact the returns in a significative way due to the similar nature of the previous job. Concerning the Public Role variable and considering the conclusion of paper we suppose that this variable could help to mitigate the systematic risk of Benchmark variable.

3.3 Methodology

Referring to the cross-sectional nature of the variables described above, different dimensions of CEO were investigated from 2005 to 2017. As the main purpose of the paper is firstly to investigate the relation between the CEO Turnovers and Performance of the considered Pension Funds, a linear regression analysis was done.

As the dependent variable, Fund performance was measured by returns generated. This variable was accurately calculated by considering both returns form investments and the size of the Pension Fund. In doing that, Comprehensive Annual Financial Report (CAFR) was used to report the variables: "Net Investment Income" and "Net Asset Position". The dependent variable considered in the regression was built as follow:

$$Pension\ Fund\ Returns = R = \frac{Net\ Investments\ Income}{Net\ Asset\ Poisition}$$

Furthermore, due to the very small nature of returns it was considered, as a good approximation, the transformation of returns:

$$R = Log\ (1+R)$$

Considering approximate raw-log equality, this approximation ensures that returns are close in value to raw returns.

As the paper considers the Main question: does the turnover impact the returns generated by the pension fund? The following regression try to answer with the following basic regressions:

$$Y_{Returns} = \beta_0 + \beta_{Turnover} + \beta_{OneYearAfterTurnover} + \beta_{OneYearBeforeTurnover} + \beta_{MarchReport} + \beta_{JuneReport} + \beta_{AugustReport} + \beta_{SeptemberReport} + \beta_{YearlyBenchmark} + \varepsilon \quad (1)$$

The aim of the previous regression is to investigate the impact that turnover and closest years, different reporting months and yearly benchmarks have on returns of the American funds. This idea was supported by figure 5 that describes a wavy trend of returns. It seems that the year before the Turnover provides on average 8.2% of returns, followed by an increase in the turnover year of 12% and a subsequent decrease to 7,6% in year after. In this way we can try to estimate a basic patter to explain how Turnover event impact performances.

For what concerns Reporting Months, looking to figure 3 we can see most funds reporting in June, followed by September and so on. I decided to include this variable to check if reporting in a specific month could has a specific effect. Basically, we may expect that reporting in December may capture the whole performance of the year while doing that in March could be bias.

Including Yearly Benchmark, we suppose that the good or bad performance of a specific fund could be an isolate or shared event. Doing this we control if exogenous variables, like crisis, impact the model in some way.

As a next step the following regression is investigates:

$$Y_{Returns} = \beta_0 + \beta_{Turnover} + \beta_{OneYearAfterTurnover} + \beta_{OneYearBeforeTurnover} + \beta_{MarchReport} + \beta_{JuneReport} + \beta_{AugustReport} + \beta_{SeptemberReport} + \beta_{YearlyBenchmark} + \beta_{Bsc} + \beta_{Msc} + \beta_{MBA} + \beta_{Mpa} + \beta_{J.D.} + \beta_{P.h.d.} + \beta_{CFA} + \beta_{CPA} + \beta_{AssetManagement} + \beta_{Insurance} + \beta_{Consultancy} + \beta_{OtherPensionFund} + \beta_{PublicRole} + \varepsilon \quad (2)$$

Including variables for Education and Previous Experience we try to explain the returns based on characteristics of the managers. Referring to table 5 we are able to see that kinds of education have differ impacts depending on the year considered. Apart from bachelor, the other educations are considered on the same level of importance considered as advanced level of education. The same happen for previous job experiences (table 6), saying that different experiences impact years in different way. As education, Previous jobs are considered on the same level due to nature of experience

Referring to levels topic mentioned in the previous paragraph, I decided to pursue a model based on aggregate levels of Educations and Previous Job Experiences. in this way the following regression was built:

$$Y_{Returns} = \beta_0 + \beta_{Turnover} + \beta_{OneYearAfterTurnover} + \beta_{OneYearBeforeTurnover} + \beta_{MarchReport} + \beta_{JuneReport} + \beta_{AugustReport} + \beta_{SeptemberReport} + \beta_{YearlyBenchmark} + \beta_{OneStudyTitle} + \beta_{TwoStudyTitles} + \beta_{ThreeStudyTitles} + \beta_{OnePreviousExperience} + \beta_{TwoPreviousExperiences} + \beta_{ThreePreviousExperiences} + \beta_{FourPreviousExperiences} + \varepsilon \quad (3)$$

The purpose of this new model is to answer to the question: are additional Qualification and/or Previous Job Experiences useful to explain the returns generated by the managers? Of course, we should expect that a

higher return is associate to a higher level of education and more previous jobs. Looking at table 7, the previous conclusion is confirmed in turnover year for education, but a maxing evidence appears in table 8 for Jobs.

4. Empirical Results

4.1 Turnover Effects

I started my empirical analysis by considering regression (1), checking the main effect of Turnovers on Returns answering to the main research question. As depicted by table 9 in the appendix, two different models are investigated. While the first one considers just the main effect of Turnover and years close to this event (Year Before and After), the second model adds Reporting Months and Benchmarks as controls variable. The reason for this comparison was due to the volatile nature of returns and the systematic effect that diverse events could have on them. In fact, the purpose of the fist model was to check the previous wavy trend of returns in the years close to the Turnover. At the opposite, the second model was built considering the common patter of returns shared by funds (fig. 4) and the impact that reporting method has (fig. 3).

For what concerns the first model we are able to see that although Turnover year does not display any significance, the year After in significantly negative. This result is in line with the descriptive statistic already seen concluding that year After Turnover impacts returns in a negative way. Furthermore, this demonstration denies the assumption that year After Turnover is associated to positive returns*. On the other hand, we should doubt about this conclusion due to the poor explanatory power of the model considered (0.2%). The results are in contrast to what considered in the assumptions and discovered by Huson, Malatesta and Parrino (2003).

Regarding the second model, we can immediately see that there is an outstanding improvement of the model passing from 0.2% to 26,1% of the variance of the returns explained. Moreover, adding the new control variable for Reporting Months and Benchmarks we notice new significances. In fact, year Before the Turnover shows a slight negative significance saying that its presence decrease returns by 0.022. In line with previous descriptive statistics, June is the only reporting month that show significance and a positive relation. Given that most of funds report in that month we may argue that June could be a biased month used just to show positive returns. In this way, it is possible to deduce that pension funds used to report in that month to avoid events that may influence negatively the performance from July onward. The most important result is provided by the benchmarks added for each year. The results clearly say that the Pension Funds Returns follow both negatively and significantly the crisis years: 2008/2009 (Subprime Mortgage Crisis), 2011/2012 (Stock Market Falls), 2015/2016 (Russian Oil Crisis). This conclusion is mainly due to the investment done by Pension Funds in Different Asset Classes, Respectively: Real Estate, Equity and Fixed Income and Commodities. Moreover, the results obtained in this case support what stated in the assumption and already discovered by Denis and Denis (1995) about performance previous the turnover.

Comparing the two tables we could conclude that the second model with additional control variables explain better the impact on returns. Additionally, we can see that after adding the new variables, year After Turnover loose its significance leaving Before Turnover with just a low impact. Different variables magnitude impacts the model directly. Overall, we can conclude that Pension Funds' performance is demonstrated mainly by the effect of the crisis, removing in this way the previous effect of the Turnover.

4.2 Educations and Previous Job Experiences Effect

The next step of the analysis employs regression (2) trying to answer to the sub-question of the research: is there any kind of education or experience that explain the variance of returns? Referring to table 10 in the Appendix I tested the impact that biographical data have on the returns. Analysing Previous Job Experiences and Educational background several models were investigated. Using the same approach seen before, I firstly tested the model with just Turnover, Different Reporting Month, Education and Previous Job Experiences and subsequently adding the Benchmarks for each year.

Considering the first model, I considered biographical characteristics of the managers adding also Reporting Months and Turnover to see if the previous findings are present also in the new model. Looking to the outcomes we are able to see that the negative relationship between return and year After Turnover is confirmed after controlling for Education and Previous Jobs. Consequently, the assumption of positive returns in the year After Turnover is denied again. Additionally, it appears that Bachelor is negatively related to returns. Although the level of significance is quite low, the outcome poses a mixing evidence to the overall sample because every manager considered hold a bachelor as a basic qualification. Although the year After Turnover patter confirmed and the new evidence on Bachelor, the overall explanatory power of the model remains low reaching 1,2%.

Looking to the second model, I decide to add the Yearly Benchmark as done previously. Here a new approach was investigated, adding a Previous Job variable at a time creating five sub-groups while leaving the remaining variables fixed. This approach was used to avoid any misspecifications arising from multicollinearity of Previous Job Experience variables and to improve the Adj. R-Squared of the model. As before, adding the new variables improve the model in an evident way, passing from 1,2% to almost 26% of the model explained. Starting from the first model and going forward we are able to see that some variables become significant while others lose their significance. In fact, we see that while an almost same pattern of

significance is common from Asset Management experience to Other Pension Fund experience, checking for Public Role change the basic scenario. In this way it is shown that while year Before Turnover, Benchmark 2007, 2011, 2015 lose their significance, June Report and Benchmark 2008 significance decreases substantially. On the other hand, the addition of Public Role leads to a new slight significance in August Report, Master education, Benchmark 2013 and a great significance in Benchmark 2010 and 2017.

The main conclusion of these five models state that considering different Previous Experiences in the model impact the other variable in a significative way. In fact, Asset Management experience impact the model as regression (1) with returns impacted negatively in the year After Turnover, positively if they are reported in June and following the crisis years. Insurance and Consultancy follows the same patter adding little significance to the 2011, saying that these two experiences helped to prevent the 2011-2012 crisis. Other Pension Funds behaved in the same way but with a reduction in importance in 2011 that brought to experiencing the crisis in 2012. As described above, Public Role behaves in a complete different manner depicting a model in which reporting both June and August have a positive effect on returns and Master has the same impact. Moreover, it says that the crisis of 2008 is weak in comparison to the one experienced in 2009 and that had a positive impact on returns. The same out of phase pattern is applied to 2016-2017 instead of 2015-2016. This is in line with Songnan Huang, Jing Sh,i Lu Zheng, Qiaoqiao Zhu (2016) which stated the a government backgrounds show higher risk adjusted returns while taking on less systematic risk.

Comparing the two-different model we could argue that again the systematic effect of the variables added cancel the year After Turnover consequence as seen in the analysis for regression (1). Moreover, considering the Adj. R-Squared the model improves and remain stable around 25,8% due probably to the magnitude of the variables added. Moreover, the results contradict the assumptions which stated that advanced qualifications like MBA, Ph.D. and CFA are able to provide higher returns. Additionally, this contradicts also the previous researches done respectively by Golec (1996), Chaudhuri, Ivković, Pollet, Trzcinka (2014) and Ravi Shukla and Sandeep Singh (1994).

4.3 Levels of Qualifications and Previous Jobs Experiences Effect

As last step of my analysis I will use regression (3) controlling for different levels of both Educations and Previous Job. The two variables were created counting how many Qualifications and Jobs Experiences managers hold. As in the previous regressions, two models were investigated and compared to both improve the explanatory power and consider a systematic variable (Benchmark) in the model. This model tries to answer to the previous assumption: higher returns are associated to a higher number of Qualifications and/or higher number of Previous Job Experiences.

Looking to the first column of table 11 we are able to see that although the levels of both Qualifications and Previous Jobs are not significant, Year After and Year Before display significance. The Year After shows a basic and negative significance and the same happens, with a higher significance, to Year Before. Thus, in line with the result of previous Regression (1) and (2) describe a scenario in contrast to both Huson, Malatesta and Parrino (2003) and partially Danis & Danis (1995). The model and its main findings are again downgraded by the poor explanatory power of the model with just an overall power of 0.6% in explaining the returns' variance.

Considering the second column, we add Yearly Benchmark and Different Reporting Months. Adding the new variables, we are able to see that the negative and significant impact of year Before Turnover remains nevertheless its decrease in significance intensity. The table shares almost the same results seen in table 9 depicting significance in the years of the crisis following in this way systematic trends. As seen before, 2007 is significantly positive while the next two years highly significant and negative, confirming in this way what happened in Subprime Mortgage Crisis. Concerning 2011-2012 crisis (Stock Market Falls), the situation is now different from the one in table 9. Although with low significance, in the previous model the impact of the crisis was confirmed while in this case the full effect of the crisis in 2012 disappears. On the other hand, the Russian Oil Crisis in 2015-2016 is fully represented here. Overall, we can say that apart the higher and systematic of Yearly Benchmark on turnover, year Before Turnover impacts the returns in a negative way. The results obtained have a great soundness due to the high explanatory power of the model, figured in almost 26% in Adj. R-Squared.

The overall conclusion of this section is that the systematic effect of Yearly Benchmark used to have a great impact during the analysis, decreasing the effects that other variables had previously on the model. In fact, it seems that the returns are greatly influenced the crisis happened in the past, respectively in: 2008/2009 (Subprime Mortgage Crisis), 2011/2012 (Stock Market Falls), 2015/2016 (Russian Oil Crisis). Concerning the other variables, it was demonstrated in all of three models that both year After and Before Turnover impacted returns negatively. First and second model demonstrate that reporting in June improve the performance and that controlling for Public Role change the performance of the funds for different years, completely in line with Songnan Huang, Jing Sh,i Lu Zheng, Qiaoqiao Zhu (2016) which stated the a government backgrounds show higher risk adjusted returns while taking on less systematic risk.

5.Implications

5.1 Political

As discussed right above, it seems that although funds' performance does not differ across various work experiences, adding these variables could have different impact on the remaining ones. In fact, while adding from "Asset Management" to "Other Pension Funds" made a significative impact on Reporting Months and Education, the most important effect is provided by the addition of "Public Role".

Public Role variable represent CEOs which had a previous experience in State departments, Government offices and City services, having in this way a political exposure. Adding this variable has a great impact on the systematic effect of the crisis, shifting their influence in different years with different effects. In fact, as argued by Songnan Huang, Jing Shi Lu Zheng, Qiaoqiao Zhu (2016): Government backgrounds show higher risk adjusted returns while taking on less systematic risk.

It is not yet clear how CEOs are able to accumulate these information advantages during their careers, saying that it is hard to understand how bureaucracy translates into better stock-picking attitudes. However, we could speculate that this pattern depends mainly on still active political connections of the CEOs. Based on previously based informational networks, the connected CEOs are able to learn about coming government policy and understand which firms will profit. This pattern is confirmed by Songnan Huang, Jing Shi Lu Zheng, Qiaoqiao Zhu's conclusions having demonstrated that investment background lead to higher diversification.

Coupling the previous literature and the conclusions from the analysis, it can be concluded that higher diversification due to investment background lead the CEOs to invest in asset involved in the crisis. On the other hand, having a government background and maintaining informational network leads to be less diversified investing in suggest and well performing kinds of assets.

5.2 Report Timing

As verified in each CAFR, it seems that pension funds usually report in different months. As explained before, the most common reporting months are: March, June, August, September and December. Moreover, I discovered a basic correlation between reporting month and the nature of the specific pension fund grouping them into: State, Local, Investment Board and Department of Treasury.

Checking results obtained it is confirmed that, although a basic significance, reporting in June has a positive effect on returns. Moreover, going forward with the analysis appeared that also August displays an elementary significance after that "Public Role" was added. While these variables were added to control and improve the explanatory power of the model together with Benchmark, their significances say something

more. In fact, one could speculate that closing the report in a specific period of the year instead of another one could create bias in the performance of the fund. Generally, it may happen that returns for assets classes are gained before the end of the fiscal year or that liabilities must be pay at the beginning of the fiscal year. Given that report timing has no constrains we can conclude that pension funds reporting in that month could take advantages from this lack of policy.

To my knowledge this is the first paper that investigate this kind of variable, finding also a debatable result. Future researches may widen this basic input trying to find correlations between different reporting month and when certain asset classes provide their returns.

6. Conclusions

The paper investigates in a detailed way the effect of Managers' Turnover on Returns of 104 American Pension Funds from 2005 to 2017. Associating Turnover to biographical characteristics of the Managers we try to find basic patterns which explain if a specific Qualification or Previous Jobs have a significative impact on accounting performance. Moreover, a new approach was followed comparing the model with the interested variables with Different Reporting Months and a systematic variable, Yearly Benchmark. As mention before, the systematic nature of this variable impact with its magnitude the models considered providing new arguable results. Considering the regression (1), (2) and (3), and the associated analysis, the major findings are as follow.

Firstly, as confirmed by all the three models, the year After Turnover is associated to a significative and negative impact on performance of the funds. This evidence contradicts both the assumption done before and the conclusion proposed by Denis and Denis (1995) and Huson, Malatesta and Parrino (2003). This could be explained saying that Managers are not able to pursue good performance in the year after his entrance in the fund. Although this evidence is supported by all the models, further researches need to be done to see if this negative impact performance is carried forward and for how many years.

Secondly, also the year Before Turnover displays this negative impact on funds' performance. Although this result appears purely in the third model, it was fully confirmed by the models that control for Reporting Month and Benchmarks. This provides support to what stated in the conclusion of Denis and Denis (1995) and Huson, Malatesta and Parrino (2003) and most of all to the assumption previously proposed. Given that pension funds try to generate the best returns to match their asset with liabilities, we suppose that series of negative returns lead to bad consequences to Managers, leading to resignation. Although this shared results, it could be useful to investigate if the negative performance is encounter for instance two years before Turnover to see if the resignation is due to series of negative performances or just isolated event.

Thirdly, it seems that reporting in June could have a positive impact on the performance of the funds. This conclusion is supported by both first and second model but not the last one. Although there are no other research papers that investigate this topic, we could argue that this new finding could open the doors to future interests. In fact, if reporting in June has a positive impact on performance it could be associate to a reporting bias saying that ending the report in the half of the year could avoid certain events and meet others. For instance, it could be speculated that returns from certain kinds of asset provide their returns just before the end of the fiscal year increasing the overall returns. At the opposite, liabilities could be encounter just after the closing date of the fiscal year, providing enough time to the funds to cover them.

Fourthly, it seems that biographical data collected for Managers do not have a great impact on the models considered. In fact, while Previous Jobs do not display any significance in any models, Education provides just

a slight impact. Thus, it is possible to say that Bachelor impacts the performance softly and in a negative way while adding control variable this significance disappears making Master positive and significant. This conclusion provides mixing evidence to the underlying assumptions and literature provided by Golec (1996), Shukla and Singh (1994), Chaudhuri, Ivković, Pollet, Trzcinka (2014). In fact, it was expected that at least one among MBA, CFA and Ph.D. was able to impact and provide great returns. A possible explanation could be that it is given a lot of emphasis to certain type of qualifications while not to others. While MBA, CFA and Ph.D. have more admission's requirements and require many years for the completions, Master could easily match the knowledge provided by these qualifications.

Fifthly, it seems that controlling for Public Role, the effect of Yearly Benchmark is confused. Describing Public Role as a previous experience in State departments, Government offices and City services, it seems that significance of the crisis' years disappears making some others significant. While the Public Role variable does not count for significance, its addition changes the scenario completely. If fact, it seems that the 2008 and 2012 crisis have just a small incidence on returns even though negative and the one in 2005 completely disappears. Doing that, it shows that other years have different impacts on the returns. These evidences are completely in line with Songnan Huang, Jing Shi Lu Zheng, Qiaoqiao Zhu (2016) which stated a Government backgrounds show higher risk adjusted returns while taking on less systematic risk.

In summary, the paper is the first in analysing these variables linked to the specific field of Pension Funds, controlling for Education, Previous Jobs and Benchmarks as a systematic variable. It could be said that biographical data provide little support in explaining the performance of Pension Funds, this perhaps due to omitted variables like ages, health, fund's governance or underlying management team. On the other hand, the systematic effect of the market is able to explain the model in a more concrete way.

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8. Appendix

Table 1.

Pension Funds name and the associate country ID code. The table represents the name and the country ID code of the 104 funds investigated in 13 years, from 2005 to 2017.

No.	State	Pension Fund Name	No.	State	Pension Fund Name
1	AK	Alaska Public Employees Retirement System	53	NE	Nebraska Public Employees Retirement System
2	AZ	Arizona Public Safety Personnel Retirement System	54	NH	New Hampshire Retirement System
3	AZ	Arizona State Retirement System	55	NJ	New Jersey State Investment Council
4	AR	Arkansas Public Employees' Retirement System	56	NM	New Mexico Educational Retirement Board
5	AR	Arkansas Teacher Retirement System	57	NM	New Mexico Public Employees' Retirement Association
6	TX	Austin Police Retirement System	58	NY	New York City Employees' Retirement System
7	MD	Baltimore City Employees' Retirement System	59	NY	New York State Common Retirement Fund
8	MA	Boston City Retirement System	60	NY	New York State Teachers' Retirement System
9	CA	California Public Employees' Retirement System (CalPERS)	61	NC	North Carolina Department of State Treasurer
10	CA	California State Teachers' Retirement System (CalSTRS)	62	ND	North Dakota State Investment Board
11	IL	Chicago Transit Authority Employees Retirement Plan	63	OH	Ohio Police & Fire Pension Fund
12	MI	City of Detroit General Retirement System	64	OH	Ohio State Highway Patrol Retirement System
13	FL	City of Miami Fire Fighters' & Police Officers' Retirement Trust	65	OK	Oklahoma Police Pension and Retirement System
14	CO	Colorado Public Employees Retirement Association	66	OK	Oklahoma Teachers Retirement System
15	CT	Connecticut Combined Investment Fund	67	CA	Orange County Employees' Retirement System
16	TX	Dallas Employees' Retirement Fund	68	OR	Oregon State Treasury
17	DE	Delaware Public Employees' Retirement System	69	PA	Pennsylvania Public School Employees' Retirement System
18	CO	Denver Employees' Retirement Plan	70	PA	Pennsylvania State Employees' Retirement System
19	DC	District of Columbia Retirement Board	71	PA	Philadelphia Board of Pensions & Retirement
20	GA	Employees' Retirement System of Georgia	72	ID	Public Employees' Retirement System of Idaho
21	RI	Employees' Retirement System of Rhode Island	73	MS	Public Employees' Retirement System of Mississippi
22	TX	Employees' Retirement System of Texas	74	NV	Public Employees' Retirement System of Nevada
23	HI	Employees' Retirement System of the State of Hawaii	75	MO	Public School Retirement System of Missouri
24	CO	Fire & Police Pension Association of Colorado	76	CA	Regents of the University of California
25	FL	Florida State Board of Administration	77	AL	Retirement System of Alabama
26	TX	Houston Municipal Employees' Pension System	78	VA	Richmond Retirement System
27	IL	Illinois Municipal Retirement Fund	79	TX	San Antonio Fire and Police Pension Fund
28	IL	Illinois State Board of Investment	80	CA	San Bernardino County Employees' Retirement Association
29	IN	Indiana Public Employees' Retirement Fund	81	CA	San Diego County Employees Retirement Association
30	IL	Indiana State Teachers' Retirement Fund	82	CA	San Francisco Employees' Retirement System
31	IA	Iowa Public Employees' Retirement System	83	CA	Santa Barbara County Employees' Retirement System
32	KS	Kansas Public Employees' Retirement System	84	WA	Seattle City Employees' Retirement System
33	KY	Kentucky Retirement Systems	85	SC	South Carolina Retirement Systems
34	KY	Kentucky Teachers' Retirement System	86	SD	South Dakota Retirement System
35	IL	Laborers' & Retirement Board Employees' Annuity & Benefit Fund of Chicago	87	MN	St. Paul Teachers' Retirement Fund Association
36	CA	Los Angeles City Employees' Retirement System	88	CT	State of Connecticut Retirement Plans and Trust Funds
37	CA	Los Angeles County Employees' Retirement Association	89	WI	State of Wisconsin Investment Board
38	CA	Los Angeles Fire and Police Pension System	90	OH	State Teachers' Retirement System of Ohio
39	CA	Los Angeles Water & Power Employees' Retirement Plan	91	IL	State Universities Retirement System of Illinois
40	LA	Louisiana State Employees' Retirement System	92	TX	Teacher Retirement System of Texas
41	ME	Maine Public Employees' Retirement System	93	GA	Teachers Retirement System of Georgia
42	NH	Manchester Employees Contributory Retirement System	94	LA	Teachers' Retirement System of Louisiana
43	MD	Maryland State Retirement and Pension System	95	IL	Teachers' Retirement System of the State of Illinois
44	MA	Massachusetts Housing Finance Agency Retirement Board	96	TN	Tennessee Consolidated Retirement System
45	MA	Massachusetts Pension Reserves Investment Management Board	97	TX	Texas County & District Retirement System
46	MI	Michigan Department of Treasury	98	TX	Texas Municipal Retirement System
47	MN	Minnesota State Board of Investment	99	UT	Utah State Retirement Systems
48	MO	Missouri Department of Transportation & Patrol Employees' Retirement System	100	VT	Vermont Pension Investment Committee
49	MO	Missouri State Employees' Retirement System	101	VA	Virginia Retirement System
50	MT	Montana Board of Investments	102	WA	Washington State Investment Board
51	MD	Municipal Employees' Retirement System of Michigan	103	WV	West Virginia Investment Management Board
52	IA	Municipal Fire and Police Retirement System of Iowa	104	WY	Wyoming Retirement System

Table 2.

Explains a basic statistic about the kind and number of qualifications in the sample investigated. The first column identifies the type of qualification. The second column describe the number and the associated percentage of qualifications in the sample. The third column is composed by the total amount of Directors and for comparison. Even if the sample is composed by 229 Directors, the Table relies on 176 (everyone has a bachelor) due to the lack of information on 53.

	Applicable		Total	
	No.	%	No.	%
Bachelor	176	100%	176	100%
Master	41	23,3%	176	100%
MBA	46	26,1%	176	100%
MPA	11	6,3%	176	100%
J.D.	40	22,7%	176	100%
Phd	5	2,8%	176	100%
CFA	5	2,8%	176	100%
CPA	7	4,0%	176	100%

Table 2.1

Provides an explanation about the qualifications and the level of overlapping between them in a single Director. Given that Directors do not have more the 3 qualifications, associating columns and rows explain how many Directors have that combination of education in addition to the Bachelor.

Degree Type	Bachelor	Master	MBA	MPA	J.D.	Phd	CFA	CPA
Bachelor	176	29	35	6	29	2	1	4
Master	29	41	5	1	1	2	2	3
MBA	35	5	46	2	4	1	3	2
MPA	6	1	2	11	2	0	0	0
J.D.	29	1	4	2	40	0	1	2
Phd	2	2	1	0	0	5	0	0
CFA	1	2	3	0	1	0	5	0
CPA	4	3	2	0	2	0	0	7

Table 3.

Describes how much the previous work experiences are common in the sample. The first column explains the number and the percentage for each category. The second column, instead represents the whole Directors sample. The latter is composed by 229 Directors even though we do not have any information about Work Experiences of 51 of them. Indeed, 178 is used as a total number of Director investigated.

	No.	%	No.	%
Public Role	106	59,6%	178	100%
Asset management	57	32,0%	178	100%
Previous Pension Fund	56	31,5%	178	100%
Consultancy	28	15,7%	178	100%
Insurance	12	6,7%	178	100%

Table 4.

Provides information about sub-categories of Asset Management class. Ranking from the most to less common we find: Equity, Real Asset, Fixed Income and Hedge Funds, Private Equity. Even if the sample is composed by 57 Directors with Asset Management Experience, the chart relies on 35 due to lack of data about specific experience of 22 Directors.

	Applicable		Not Applicable		Total	
	No.	%	No.	%	No.	%
Equity	13	37,1%	22	62,9%	35	100,0%
Fixed income	7	20,0%	28	80,0%	35	100,0%
Private equity	4	11,4%	31	88,6%	35	100,0%
Real assets	12	34,3%	23	65,7%	35	100,0%
Hedge Funds	7	20,0%	28	80,0%	35	100,0%

Table 5.

The tables provide Comparison of Returns from Education for Turnover-Year and dividing Non-Turnover in: Year-Before and Year-After Turnover. Comparing returns for different levels of education in different years we could argue that the year before-turnover provide the highest returns for the majority of title: Bsc, MA, MBA and Phd. Concerning the remaining titles, we see that MPA, J.D and CFA generate highest returns after the turnover and just holding CPA delivers highest returns in turnover year.

Year-Before				Turnover-Year				Year-After			
	Mean	Median	St. Dev		Mean	Median	St. Dev		Mean	Median	St. Dev
BSc	0,093	0,103	0,267	BSc	0,084	0,102	0,157	BSc	0,075	0,113	0,113
MA	0,106	0,130	0,102	MA	0,100	0,097	0,084	MA	0,086	0,112	0,097
MBA	0,186	0,075	0,437	MBA	0,093	0,117	0,251	MBA	0,073	0,116	0,120
MPA	-0,025	0,012	0,133	MPA	0,072	0,094	0,078	MPA	0,073	0,103	0,120
J.D.	0,076	0,095	0,100	J.D.	0,07	0,102	0,106	J.D.	0,077	0,094	0,099
Phd	0,154	0,177	0,050	Phd	0,033	0,08	0,177	Phd	-0,046	-0,046	0,165
CFA	0,099	0,097	0,099	CFA	0,102	0,109	0,062	CFA	0,140	0,159	0,075
CPA	0,047	-0,005	0,102	CPA	0,085	0,102	0,069	CPA	0,085	0,080	0,058

Table 6

The tables provide Comparison of Returns from Previous Job Experiences for Turnover-Year and dividing Non-Turnover in: Year-Before and Year-After Turnover. Comparing returns for different job experiences in different years we could argue that the year before-turnover provide the highest returns for jobs like Pension funds. Concerning the remaining jobs, we see that Asset Management and Consultancy generate highest returns after the turnover and Public Role and Insurance delivers highest returns in turnover year

Year-Before			Turnover-Year			Year-After		
	Mean	Median		Mean	Median		Mean	Median
Asset management	0,04	0,09	Asset Management	0,07	0,10	Asset management	0,09	0,11
Public Role	0,11	0,10	Public Role	0,14	0,11	Public Role	0,09	0,12
Pension Fund	0,09	0,10	Pension Fund	0,07	0,09	Pension Fund	0,06	0,11
Consultancy	0,01	0,03	Consultancy	0,04	0,08	Consultancy	0,07	0,11
Insurance	0,07	0,06	Insurance	0,11	0,14	Insurance	0,07	0,06

Table 7.

The Table represents a descriptive statistic considering the returns in the Turnover and Non-Turnover Years linked to the amount of degrees hold by managers. The first column provides information about levels of degrees, divided in: No Information, One Degree, Two Degrees, Three Degrees.

Turnover

	Mean	Median
No Info	0,219	0,117
1 Degree	0,068	0,100
2 Degrees	0,087	0,102
3 Degrees	0,088	0,099

Non-Turnover

	Mean	Median
No Info	0,064	0,103
1 Degree	0,070	0,102
2 Degrees	0,065	0,086
3 Degrees	0,079	0,080

Table 8.

The Table represents a descriptive statistic considering the returns in the Turnover and Non-Turnover Year linked to the amount of previous jobs done by managers. The first column provides information about levels of previous jobs, divided in: No Information, One Previous Job, Two P. Jobs, Three P. Jobs, Four P. Jobs.

Turnover

	Mean	Median
No Info	0,154	0,109
1 P. Job	0,144	0,109
2 P. Jobs	0,040	0,094
3 P. Jobs	0,076	0,094
4 P. Jobs	0,132	0,156

Non-Turnover

	Mean	Median
No Info	0,063	0,093
1 P. Job	0,065	0,091
2 P. Jobs	0,073	0,100
3 P. Jobs	0,079	0,108
4 P. Jobs	0,052	0,017

Table 9. Regressions comparison: Turnover, Reporting Months, Benchmarks.

This table represents regressions in which the dependent is the accounting performance of the funds, measured in terms of returns. Al the other independent variables are binary. Model (1) consider just the Turnover variable while (2) count the control variable for Reporting Months and Benchmarks. Turnover, Year After and Year Before represent respectively the time frame in which the managers leave the company. March, June, August and September consider the different month in which the CAFR is Published. Benchmark Variables from 2006 to 2017 are the yearly fixed effect which account for overall performance of the funds considered. Stars close to the coefficients represent the significance levels 0.1,0.05, 0.01, 0.001 (respectively: . , *, **, ***)

	Returns			
	(1)		(2)	
Turnover	0,01		0,016	
Year After Turnover	-0,03	*	-0,013	
Year Before Turnover	-0,015		-0,022	.
March Report			0,017	
June Report			0,021	*
August Report			0,012	
September Report			0,012	
Benchmark 2006			0,022	
Benchmark 2007			0,053	*
Benchmark 2008			-0,190	***
Benchmark 2009			-0,212	***
Benchmark 2010			0,020	
Benchmark 2011			0,043	.
Benchmark 2012			-0,038	.
Benchmark 2013			0,015	
Benchmark 2014			0,032	
Benchmark 2015			-0,098	***
Benchmark 2016			-0,069	**
Benchmark 2017			0,008	
Fixed Year Effect	No		Yes	
Adjusted R-Squared	0.002		0,261	

Table 10. Regressions comparison: Turnover, Education, Previous Jobs, Reporting Months, Benchmarks.

This table represents regressions in which the dependent is the accounting performance of the funds, measured in terms of returns. Al the other independent variables are binary. Model (1) considers just the biographical data with reporting months while (2) count the control variable for Benchmarks. Turnover, Year After and Year Before are respectively the time frame in which the managers leave the company. March, June, August and September consider the different month in which the CAFR is Published. Benchmark Variables from 2006 to 2017 are the yearly fixed effect which account for overall performance of the funds considered. Asset Management experience describes an experience in investments. Consultancy refers to experience in consultancy companies for management and financial services. Insurance describes a role in that field. Other Pension Funds refers to previous experience in a

peer fund in a role that range from Director to upper Manager. Public Role is a variable that describe a manager with experience within State departments, Government offices and City services. Bachelor describes the basic qualification hold by each manager. Master, MBA, Mpa represent advanced education in the Master Field. Ph.D ad J.D. are advance education in the Doctorate field. CFA and CPA are advanced Education in the Certificate field. Stars close to the coefficients represent the significance levels 0.1, 0.05, 0.01, 0.001 (respectively: . , *, **, ***).

	Returns					
	(1)	(2)	(3)	(4)	(5)	(6)
Asset Management	−0,004	−0,010				
Insurance	0,003		0,002			
Consultancy	0,000			−0,002		
Other Pension Funds	0,009				0,005	
Public Role	0,007					0,007
Turnover	0,009	0,015	0,015	0,015	0,015	0,015
Year After Turnover	−0,032 *	−0,014	−0,014	−0,014	−0,014	−0,014
Year Before Turnover	−0,017	−0,023 .	−0,023 .	−0,023 .	−0,023 .	−0,023
March Report	0,009	0,017	0,016	0,016	0,015	0,015
June Report	0,010	0,022 *	0,021 *	0,022 *	0,022 *	0,021 .
August Report	−0,004	0,005	0,007	0,008	0,008	0,008 .
September Report	−0,016	0,010	0,011	0,011	0,011	0,010
Bachelor	−0,028 .	−0,017	−0,019	−0,019	−0,019	−0,021
Master	0,014	0,012	0,011	0,011	0,011	0,010 .
MBA	0,014	0,009	0,010	0,009	0,009	0,009
MPA	0,010	0,009	0,008	0,009	0,009	0,010
P.h.D	0,010	0,007	0,010	0,009	0,011	0,008
Juris Doctor	0,009	0,006	0,007	0,007	0,006	0,007
CFA	0,000	−0,002	−0,007	−0,006	−0,006	−0,005
CPA	0,029	0,025	0,025	0,025	0,023	0,025
Benchmark 2006		0,023	0,022	0,022	0,022	0,022
Benchmark 2007		0,053 *	0,053 *	0,053 *	0,053 *	0,053
Benchmark 2008		−0,189 ***	−0,189 ***	−0,189 ***	−0,189 ***	−0,189 *
Benchmark 2009		−0,210 ***	−0,210 ***	−0,210 ***	−0,210 ***	−0,210 ***
Benchmark 2010		0,022	0,022	0,022	0,022	0,022 ***
Benchmark 2011		0,045	0,045 *	0,045 *	0,044 .	0,044
Benchmark 2012		−0,037	−0,037	−0,037	−0,037 .	−0,038 .
Benchmark 2013		0,016	0,016	0,016	0,016	0,015 .
Benchmark 2014		0,033	0,032	0,033	0,032	0,032
Benchmark 2015		−0,097 ***	−0,098 ***	−0,098 ***	−0,098 ***	−0,098
Benchmark 2016		−0,068 **	−0,069 **	−0,069 **	−0,069 **	−0,069 ***
Benchmark 2017		0,010	0,009	0,009	0,009	0,008 **
Fixed Year Effect	No	Yes	Yes	Yes	Yes	Yes
Adjusted R-Squared	0,012	0,259	0,258	0,258	0,258	0,258

Table 11. Regressions comparison: Turnover, Education Levels, Previous Jobs Levels, Reporting Months, Benchmarks.

This table represents regressions in which the dependent is the accounting performance of the funds, measured in terms of returns. Al the other independent variables are binary. Model (1) considers just the biographical data while (2) count the control variable for Reporting Months and Benchmarks. Turnover, Year After and Year Before represent respectively the time frame in which the managers leave the company. March, June, August and September consider the different month in which the CAFR is Published. Benchmark Variables from 2006 to 2017 are the yearly fixed effect which account for overall performance of the funds considered. Qualification is now divided into levels counting how many Qualifications managers have. Previous Jobs Experiences is now divided into levels counting how many Previous Experiences managers have prior to become the Fund's Directors. Stars close to the coefficients represent the significance levels 0.1,0.05, 0.01, 0.001 (respectively: **.** , *, **, ***).

	Returns			
	(1)		(2)	
Turnover	0.008		0,016	
Year After Turnover	-0.031	*	-0,012	
Year Before Turnover	-0,027	**	-0,023	.
1 Qualification	-0.023		0,006	
2 Qualifications	-0.009		0,004	
3 Qualifications	-0.002		0,004	
1 P. Jobs	0.001		-0,011	
2 P. Jobs	0.004		-0,007	
3 P. Jobs	0.013		-0,007	
4 P. Jobs	0.028		-0,01	
March Report			-0,024	
June Report			0,002	
August Report			-0,01	
September Report			-0,018	
Benchmark 2006			0.023	
Benchmark 2007			0,053	*
Benchmark 2008			-0,189	***
Benchmark 2009			-0,209	***
Benchmark 2010			0,021	
Benchmark 2011			0,044	*
Benchmark 2012			-0,036	
Benchmark 2013			0,016	
Benchmark 2014			0,033	
Benchmark 2015			-0,096	***
Benchmark 2016			-0,067	**
Benchmark 2017			0,009	
Fixed Year Effect	No		Yes	
Adjusted R-Squared	0.006		0,258	

Figure 1.

The graph depicts the Turnover trend in a sample of 103 US Pension Funds in 13 years, from 2005 to 2017. The x-axe is the number of funds of the sample while on the y-axe is the number of turnover.

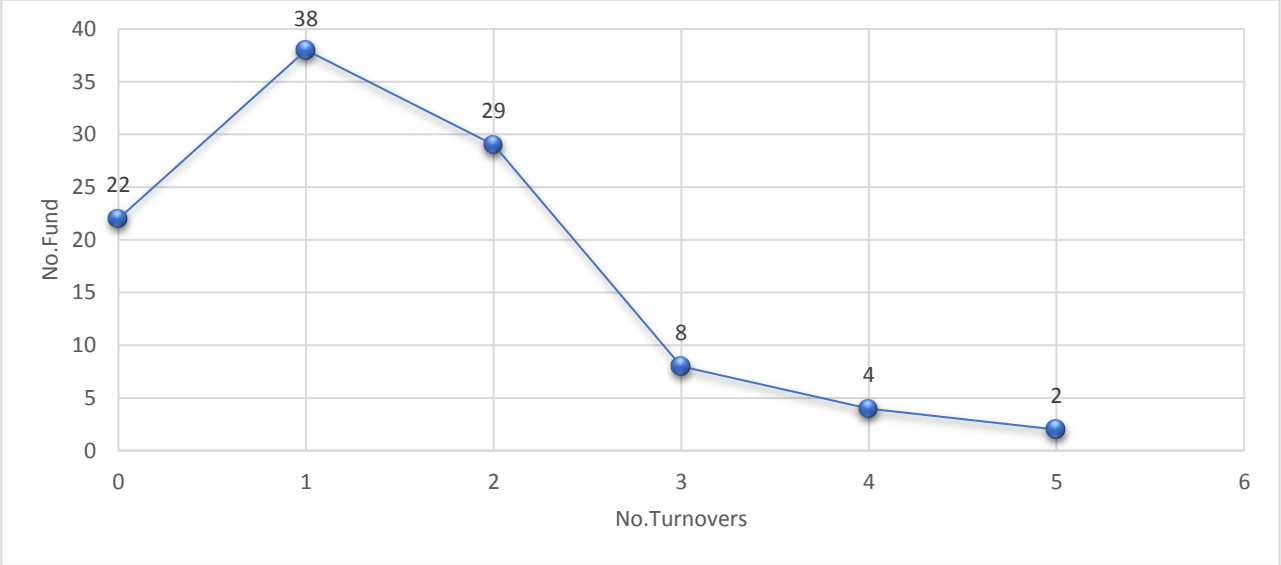

Figure2.

The graph shows the varieties of qualifications found in the sample investigated. A division of qualification among macro-areas Master, Doctorate and Certification is provided to see which one is most common among managers.

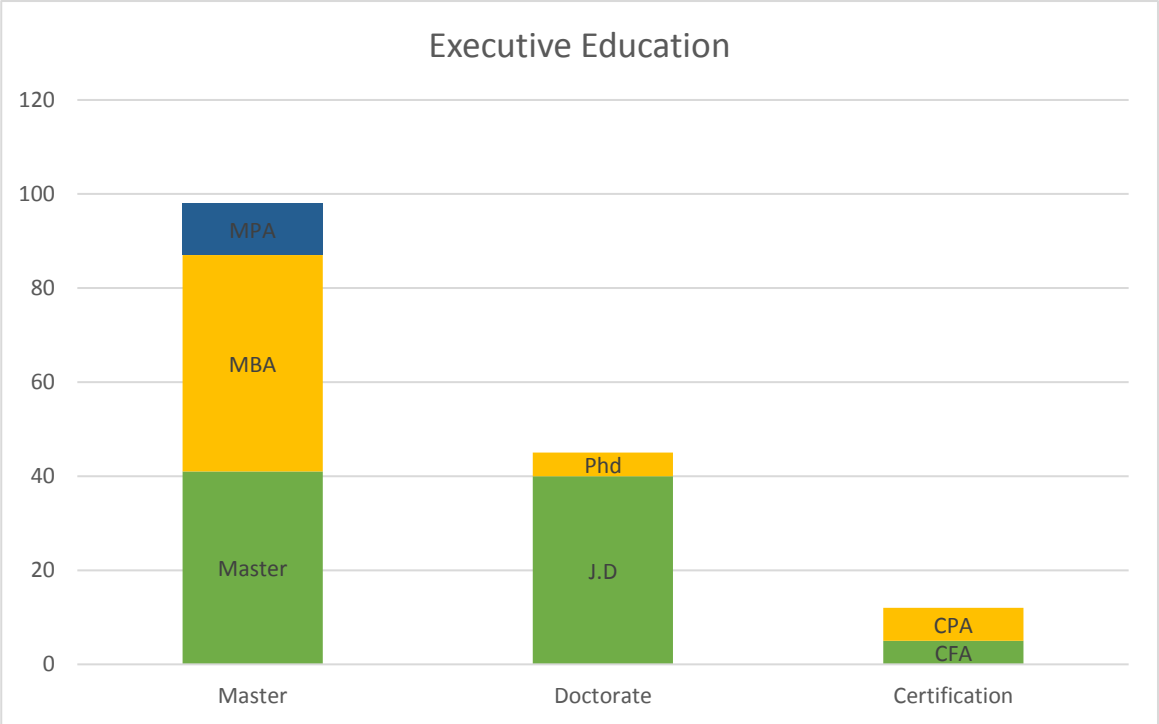

Figure 2.1

The graph shows the varieties of qualifications found in the sample investigated. A division of qualification among macro-areas Economic Education and Law Education is provided to see which one is most common among managers.

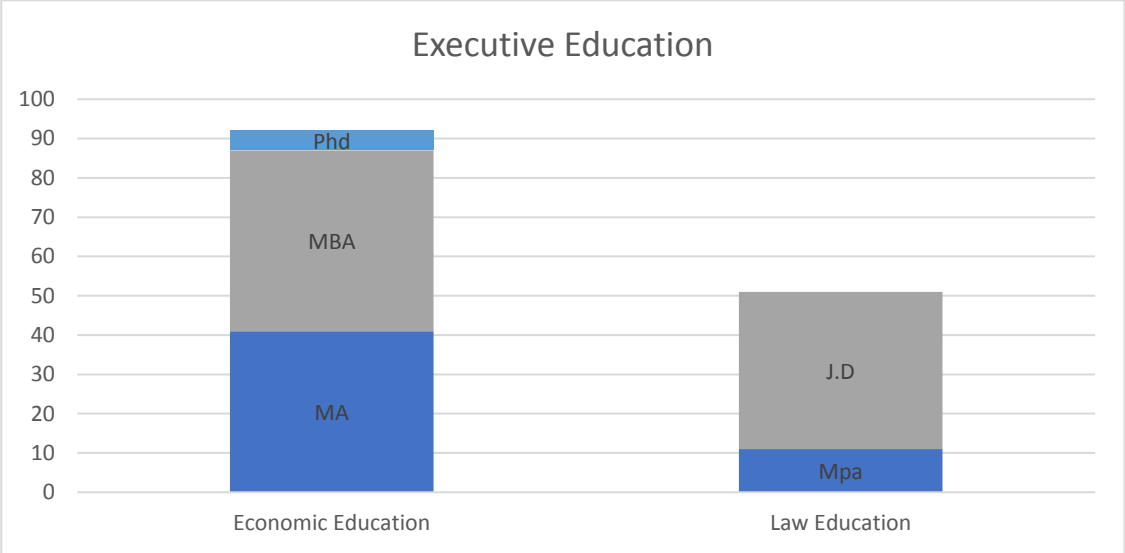

Figure 3.

The pie-chart below provide information about the reporting month encountered in the sample and the percentage associated about how common they are.

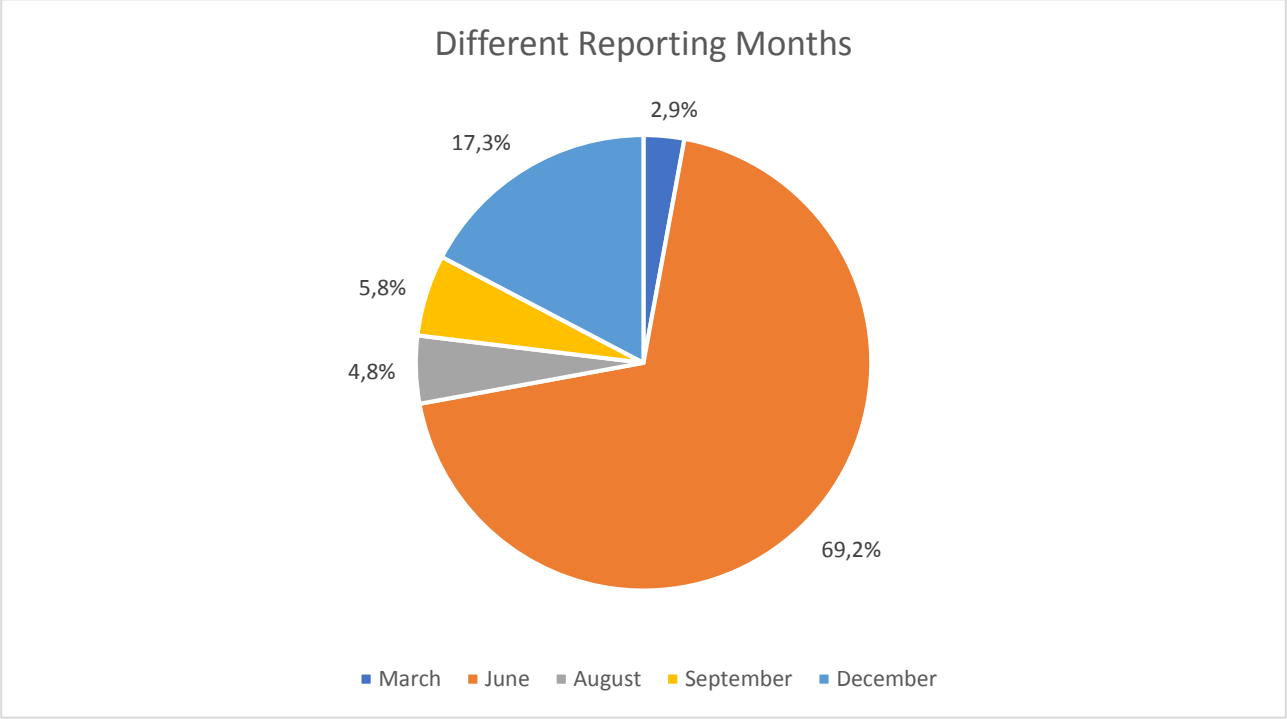

Figure 4.

The graph below provides information about the trend of returns investigated in the sample, from 2005 to 2017. The wavy trend clearly follows systematic factors like crisis happened in 2008/2009, 2011/2012, 2015/2016.

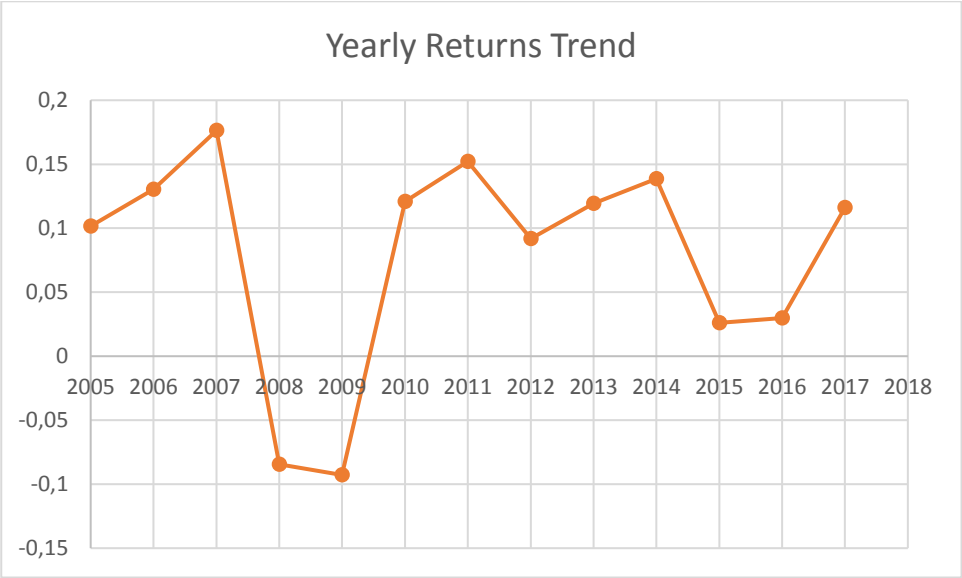

Figure 5.

The table represents a comparison among average-returns for different events: Year-Before, Turnover-Year and Year-After. A wavy trend is depicted showing an increase from Year-Before and Turnover-Year and a subsequently decrease from Turnover-Year and Year-After.