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# Remuneration of Dutch pension fund board members: effective use of pay incentives?

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**MSc thesis**

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## Abstract

This thesis research focusses on the remuneration of the board members of Dutch pension funds. Academic literature describes the existence of a principal-agent relationship between the stakeholders and/or shareholders of an organisation and its executive board members. According to the agency theory, conflicts of interests cause the agents (board members) not to act in the best interest of the principals (stakeholders and/or shareholders). Literature dictates that the most effective way to align the interests of the agents with the interests of the principal, and thereby improving the performance of the agent, is a combination of governance mechanisms that prevent the agent from acting in their own interests and pay incentives that stimulate the agent to act in the best interest of the principal. With the public debate on executive remuneration still going on, this thesis research aims to find out to what extent pay incentives are being used for the remuneration of Dutch pension fund board members and if this use is effective according to the literature on executive remuneration. The research concludes that plenty of governance mechanisms are used for managing the behaviour of the board members, but it appears that pay incentives are not being used. These findings are in contrast to what literature suggests and hence lead to the recommendation for pension funds and their stakeholders to investigate the possibilities for introducing incentive plans for the remuneration of pension fund board members, in order to maintain (or improve) the decision making performance of pension fund boards.

## Preface

I wrote this thesis as a final research project to complete my MSc study in Economics & Business Economics on the Erasmus University in Rotterdam, the Netherlands. Because of my great interest in the dynamics of pension funds and pension markets I decided to pick a subject related to pensions: the remuneration of pension fund board members. During the research process I have had great support from prof. dr. S.G. van der Lecq (Erasmus University Rotterdam) and ir. S.R. Schotanus (Hay Group). I would like to thank them both very much for all the efforts they made to support me with this research.

Lody Geerst,

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# 1. Introduction

Subject of this research is the role of executive compensation in optimizing the performance of Dutch pension funds. In advance of the precise definition of the research question in the last part of this introductory chapter, the motivation for this research will be explained.

## 1.1 Motivation for this research

In recent years a lot of debate is going on about the subject of executive pay and especially pay-for-performance principles<sup>1</sup>. On the one hand there are academics - and the greater part of the remuneration committees of large companies - who believe that pay-for-performance can be a powerful instrument for managing incentives of executives in their principal-agent relationship with the owners and other stakeholders of a company. On the other hand there are academic studies on executive pay arrangements in practice that found little or no significant results in favour of using pay-for-performance components (Murphy, 1999). These studies give an indication that companies should be careful and considerate in using pay-for-performance components in their remuneration policies, because pay-for-performance components can also create the wrong incentives. Nonetheless, worldwide developments in remuneration policies during the first eight years of this century were in favour of the pay-for-performance doctrine. In 2007, just before the global financial crisis, a survey was conducted on CEO pay in the United States, showing that 88% of the median CEO salary of \$8,85 million existed of short- and long-term incentives/bonuses<sup>2</sup>. Many believe that short-term focus and excessive risk-taking, partly driven by the design of executive pay packages, were the main cause for the scandals and collapse of the multinationals Enron, Barings Bank and Lehman Brothers in the United States (Dunning, 2012) and the collapses of HIH and One.Tel in Australia (Hill and Yablon, 2010). Moreover, excessive remuneration and the poor structure of executive pay arrangements are being seen as two important catalysts for the global financial crisis in 2008 (Walker, 2009).

In an attempt to provide a better alignment of the incentives created by executive pay arrangements and the interests of stakeholders, companies launched a lot of self-regulation initiatives during the past decade. Those initiatives were often stimulated by upcoming corporate governance regulation and codes of conduct implemented by governments. Examples of this kind of regulation in the Netherlands are the Dutch corporate governance code<sup>3</sup> and the principles for modest remuneration<sup>4</sup>.

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<sup>1</sup> See e.g. Bebchuk and Spamann (2010), Rost and Osterloh (2009).

<sup>2</sup> This compensation survey was conducted by Hay Group and the Wallstreet Journal, see Gerhard et. al. (2009).

<sup>3</sup> See Hooghiemstra and Van Ees (2011).

The principles for modest remuneration provide guidelines for remuneration policies for executives and employees of banks and insurance companies. An example of one of these guidelines is the proportion of variable salary in total remuneration, with a maximum of fifty per cent. The main goals of the remuneration guidelines are to reduce the excessive risk-taking and to lower the chance of negative events for all the stakeholders of the companies.

Unlike the broad attention from both academics and politics that is given to remuneration policies of banks and insurance companies, the pension funds and their service providers are given less attention<sup>5</sup> in a search for more efficient remuneration policies. This is at least remarkable, given the fact that Dutch pension funds manage a total asset pool of over EUR 844 billion<sup>6</sup>, the largest source of retirement income for the major part of the population. Moreover, the pension funds are responsible for matching the total pension liabilities with the pension assets, by conducting not only suitable asset management policies, but also indexation policies, premium policies and interest overlay policies. Last but not least pension funds are responsible for accurate administration of the pension rights and thorough communication with the plan participants.

Considering the importance of pension funds in the Netherlands for its population, their performance is also of great importance. That performance is, according to many recent studies, positively correlated to good governance (Stewart and Yermo, 2008). A suitable remuneration policy for the board members is expected to be part of good governance and hence to improve fund performance. For this reason this study will leap into a void in literature by trying to map the remuneration policies for Dutch pension fund board members. If evidence is found that Dutch pension funds are using pay-for-performance principles, their effectiveness will be discussed. If it appears that pension funds do not use any pay-for-performance components in their remuneration policies, this thesis will discuss whether the current remuneration policies are effective or should be subject of change. The outcome of this study will hopefully provide useful suggestions for guidelines on (more) effective remuneration policies for pension fund board members.

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<sup>4</sup> The principles for modest remuneration were established in May 2009 by the Dutch financial markets supervisors De Nederlandsche Bank (DNB) and the Financial Markets Authorities (AFM).

<sup>5</sup> The Dutch central bank and financial markets supervisor DNB concluded in 2011 that compensation policies of Dutch pension funds were prudent and that there was no need for further restraints than those of the principles for modest remuneration.

<sup>6</sup> Total assets under management by Dutch pension funds at 31 March 2012 according to DNB.

## **1.2 Definition of the research question**

The goal of this research is to start a discussion on (the effectiveness of) the current design of remuneration policies for board members of Dutch pension funds. The first step will be a literature review, which should result in hypotheses as to how an effective remuneration policy for Dutch pension funds should look like and especially which role should be reserved for pay-for-performance principles. The second step will be to find out whether the height and structure (fixed/variable) of the remuneration package for board members of Dutch pension funds is in line with what should be expected from literature on effective remuneration. Based on the outcome of this second step the effectiveness of the current design of remuneration packages can be discussed. In short, this research will try and find an answer to the following research questions:

**Which parameters determine the salary of the governing board members of Dutch pension funds and is this an effective way of executive pay according to the literature on executive remuneration?**

In these research questions ‘parameters’ can be either performance based or non-performance based explanatory variables for the height of the salary of board members . An ‘effective way of executive pay’ should be interpreted as a remuneration package design which enhances the performance of the pension fund.

## **1.3 Structure of this thesis**

In order to draw conclusions on the questions at hand, this paper will be structured as follows. The second chapter will give an overview of the relevant literature on executive pay and incentives, with special attention for the agency theory and the pay-for-performance discussion. As an integral part of this pay-for-performance discussion the way to measure pension fund performance is taken into consideration. Also some light is shed on the pay regulations for financial institutions, and pension funds in special, as introduced by the Dutch financial markets supervisors DNB and AFM during the past few years. The third chapter then will bridge the gap between literature and practice, by outlining the position and responsibilities of executive board members in the governance structure of pension funds and by defining a way to measure the performance of pension funds in practice. The thesis will continue with the empirical part of the research in chapter four, regressing the observed height of the salaries of pension fund board members against several possible explanatory variables, both performance related and non-performance related. Chapter five will conclude this thesis with a discussion about the (possible) difference between the observed remuneration of pension fund board members and the suggestions derived from literature.

## 2. Literature review: executive pay, incentives and performance

The previous chapter captured the problem definition: *‘Which parameters determine the salary of the governing board members of Dutch pension funds and is this an effective way of executive pay according to the literature on executive remuneration?’*.

This chapter will cover the literature relating to the topic, in order to narrow down the focus for the empirical research and to phrase hypotheses relating to the research question at hand. In the first section some light will be shed on executive pay arrangements in general: what does academic literature on executive remuneration say about effective pay arrangements and what are the elements of a common remuneration package? The second section then will give some extra attention to pay for performance: remuneration packages often contain short term incentive plans (STIPs) and long term incentive plans (LTIPs), but do those plans meet their goals? The third section will elaborate on what literature teaches about performance measurement, thereby giving instruments to make the performance of pension funds measurable. The fourth section will sum up the restrictions on executive pay that are given by the Dutch financial markets supervisors (DNB and AFM) and this chapter will wrap up in the fifth section with conclusions on the literature and hypotheses for the empirical part of this research.

### 2.1 Executive pay arrangements

The way to pay executives is a much debated subject. Literature on executive pay could be divided into two kinds of studies. On the one hand there are studies on the search for a legitimate way to pay executives (see, for example, Ogden and Watson, 2008). These studies are about the social side of the executive pay issue, relating to the “fairness” of executive pay as experienced by the public (Walsh, 2008)<sup>7</sup>. On the other hand there are studies on the optimal structure for executive pay arrangements, in order to maximize the performance of the organisation. The latter studies will form the focus of this literature review, for the goal of this research is to find a relationship between executive pay and the performance of pension funds and not about the “fairness” discussion.

#### *Components of remuneration packages for executives*

Remuneration packages for executives have been subject of many changes throughout history . Until the beginning of the previous century, executives commonly earned a fixed salary. According to Wells (2011) this changed around the 1920’s, when firms were growing larger and the owner and

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<sup>7</sup> More recently this debate about the “fairness” of executive pay is stirred up again by the “Occupy” movements, protesting during 2011 and the first half of 2012 at financial area’s around the world against the height of executive pay.



executive director were no longer necessarily the same person. This change demanded a different approach to executive remuneration. Next to the fixed salary, a variable component was added, depending on the performance of the executive director. This variable component should create the incentive for the executive director to act in the best interest of the owner and optimize firm performance. Nowadays this approach is still the general model for remuneration packages for executives. In general three components<sup>8</sup> can be distinguished when looking at executive remuneration packages: a fixed base salary, a variable salary based on an incentive plan (often divided in a short term plan and a long term plan), and other benefits like pension contributions, a business car, etc.

The height of the fixed base salary depends for the greater part on the size of the firm (Chhaochharia and Grinstein, 2009) and thus also on the complexity of the job, which is commonly positively correlated to the size of the firm. Other input variables for the height of the fixed base salary are the kind of industry a firm operates in and the scarcity of people with the right skills and competencies that are required for the job. The base salary is used to attract the right people for the job. If the base salary does not match the complexity of the job and the responsibilities it will be hard for an organisation to attract and retain the people with the right competences to establish a good operational performance for the organisation.

The base salary, however, is not much debated in literature, since it has been the smaller part of the total remuneration package for executives for the last decade (Gerhard et. al. 2009). Also pension contributions and other benefits have not often been subjects of study, because they form a marginal part of total remuneration. In contrary, incentive plans have been subject of many studies. Reasons for this are that they form the greater part of remuneration packages and that the effectiveness of incentive plans is being questioned. Therefore, the next section of this chapter will focus on the rationale behind incentive plans and the role pay-for-performance should play according to academic literature on executive remuneration.

## **2.2 Executive remuneration and the agency theory**

The rationale behind incentive plans is that they should improve the alignment of interests of executives (the agents) and shareholders and/or stakeholders (the principals) and hence improve the performance of an organisation, i.e. the value it adds for its shareholders and/or stakeholders. This rationalisation finds its origin in the agency theory. In 1973 Stephan Ross was the first to write down

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<sup>8</sup> See e.g. Lee (2009), Ambachtsheer (2011).

what is now known as the agency theory<sup>9</sup>. He formulated the principal-agent relationship in an organisational setting: the owner of the organisation (or someone representing the owner), called the principal, contracts someone else, the agent, to perform one or more tasks for the principal. The agent has certain (sometimes conflicting) preferences on how to perform the tasks and so has the principal. With relation to performing those tasks, agency theory suggests that agents are self-interested, effort-averse and relatively risk-averse (Gerhart et. al. 2009) and therefore need a stimulus to act more in the interest of the stakeholders (in this case the employer(s) and employees). Ross already pointed out in 1973 that the design of the compensation arrangement is a useful tool for this alignment of interests: the compensation the agent receives for performing the task(s) should be arranged in such a way that it creates incentives for the agent to act in the best interest of the principal. Over the years the agent theory developed (and became also known as the principal-agent theory) and a second way for securing that the agent acts in the best interest of the principal was acknowledged. As Shapiro (2005) summarizes, next to the use of financial incentives (such as bonuses, equity stakes, stock options and salary that is dependent on the profit of the organisation) also governance mechanisms could be used to obtain the desired behaviour from the agent. Governing mechanisms are for example the presence of a supervisory board, auditors, and other means by which the principal can monitor and control the behaviour of the agent. Before elaborating further on the use of the two mechanisms for interest alignment, the next paragraph will zoom in further on the agency problem for Dutch pension funds and define the position of the pension fund board members.

#### *The agency problem for Dutch pension funds*

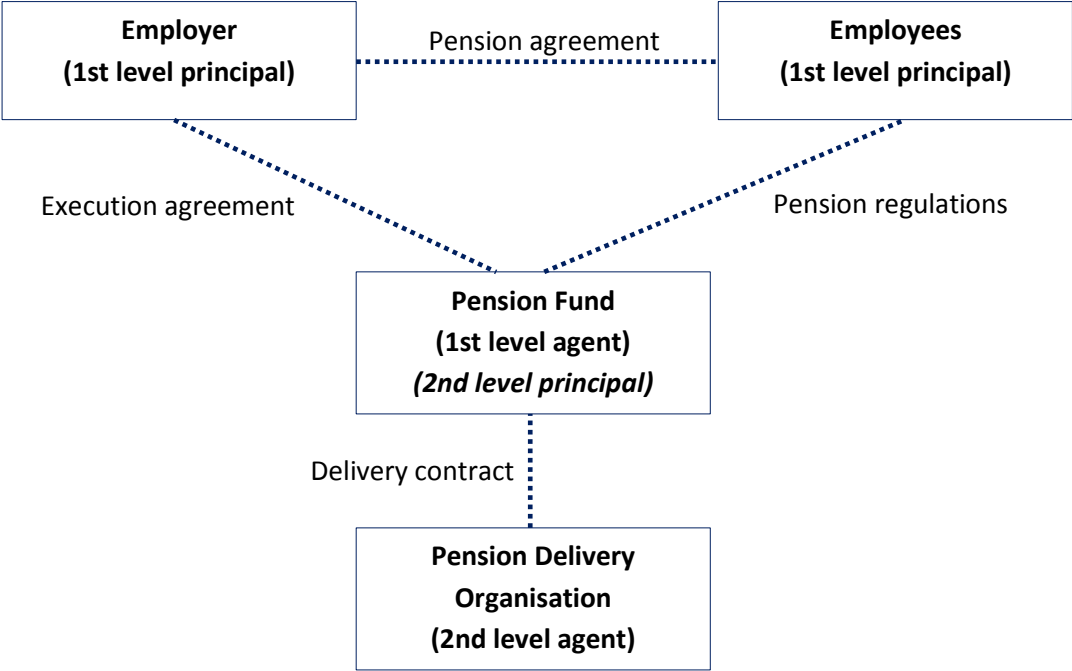
The principal-agent relationships that apply for Dutch pension funds are often described as “the pension triangle” and are illustrated in figure 1 on the next page. The pension agreement, as a part of the collective labour agreement, is an agreement between the employer and his employees. The pension agreement is executed by a pension fund (or pension insurer), represented by the pension fund board members, which is contracted by the employer. Hence, there is a principal-agent relationship between the employer and the pension fund (board). In case of a Defined Benefit (DB) contract, which still is the most common kind of pension agreement in the Netherlands (Kemna et al., 2011), the employer has certain obligations that depend on the performance of the pension fund. Often the employer, or sponsor, has the obligation to make additional payments and/or pay an increased contribution rate in case of the pension fund being underfunded. This makes it a number one priority for the employer that the pension fund realises a good investment performance and

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<sup>9</sup> See Mitnick (2012).

does not spend too much of its reserves for the indexation of the pension rights of its participants. On the other hand, there also is a principal-agent relationship between the (former) employees (and retirees) and the pension fund. The interest of this group of stakeholders is much less implicit. The former employees, employees and retirees, from now on referred to as *employees*, have as a number one priority the indexation of their pension rights, compensating for value loss (inflation) and/or wealth loss (average wage increase). It is not in the interest of employees how this indexation is realised: whether it is granted due to positive investment performance or to additional payments by the employer. Besides the indexation employees might also be interested in accurate administration of their pension rights, understandable and sufficient communication about (changes in) their pension entitlements and an acceptable service level regarding for instance the helpdesk and internet services of the contracted pension fund.

**Figure 1: The principal-agent relationships for Dutch pension funds**



This short enumeration of interests of employers and employees makes it clear that the principal-agent relationships between employer(s) and employees on the one hand and pension funds on the other hand are complicated and demand for proper measures that align the interests of the contracted pension fund and its board members with the interests of the employer(s) and employees. Besides the earlier mentioned (in some ways) contrary interests of both employer(s) and employees, there is also the issue that employer(s) and employees are facing information asymmetries: they cannot monitor most of the actions of the pension fund board members (Clark and Urwin, 2008). Moreover, there is a second level of principal-agent relationships between the

pension fund and the contracted delivery organisations for (most commonly) the execution of asset management and pension administration services, which makes the conflict of interests even more complicated<sup>10</sup>.

#### *Effective use of incentive plans (pay-for-performance) by pension funds*

The description of the principal-agent relationship between the pension fund board members and the employer(s) on the one hand and the employees on the other hand leads to a question which is relevant for this research: should a pension fund use pay-for-performance to align the interests of the board members with the interests of the employer(s) and employees? As mentioned earlier in this section of this thesis, the interests of both parties could also be aligned by governance mechanisms that control the behaviour of the pension fund board members. Next to that, the use of incentive plans is being questioned in literature. Ambachtsheer, for example, who wrote a paper in 2011 about the way pension funds should pay their executive board members and employees, points at theory about the motivation for human behaviour by Maslow (1943). Maslow states that in the first place people are looking for a way to fulfil their physical needs (water, food) and their need for safety (shelter, employment). In order to provide for these needs, they need a certain monetary income. Beyond those needs people are looking for things they cannot reach by just earning a higher salary, i.e. belonging (family, friends), esteem (respect by others) and self-actualization (service to others). If this theory holds, and if pension fund board members earn a sufficient amount of income with their primary jobs, financial incentives could be ineffective to enhance their performance. Although some academics, like Ambachtsheer, warn for the limitations of pay-for-performance principles, the effectiveness of pay-for-performance is confirmed by experiments. Eriksson and Villevall (2008), for instance, find that pay-for-performance not only creates incentives to perform better, but also has a selection effect on candidates for a certain job: candidates who expect to perform below average will less likely apply for a job where they get paid according to their performance. For optimal effectiveness of pay-for-performance principles academic literature suggests further that a compensation arrangement using pay-for-performance principles should not just reward for good performance or outperformance<sup>11</sup>, but that this compensation should be conditional (i.e. there should be the possibility to reclaim the compensation when the agent underperforms in following years, see for example Garvey and Milbourn (2006)).

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<sup>10</sup> See for a more detailed description of the principal-agent relationship on the second level e.g. Black (1992).

<sup>11</sup> The qualification good or bad performance and out- or underperformance depends on the way performance is measured. Absolute performance measurement results in an absolute qualification (good or bad) and relative performance measurement results in a relative qualification (out- or underperformance).

Concluding, both the single use of an incentive plan for board members and the single use of governance mechanisms to influence the behaviour of board members, could lead to an outcome (in executive behaviour) that is not optimal. Hence, Rutherford et al. (2007) and Yang (2008) suggest that the principal-agent problems between the executives of an organisation and its stakeholders should be reduced by a combination of monitoring arrangements (i.e. the use of governance mechanisms) and effective pay-for-performance arrangements.

### **2.3 Performance measurement**

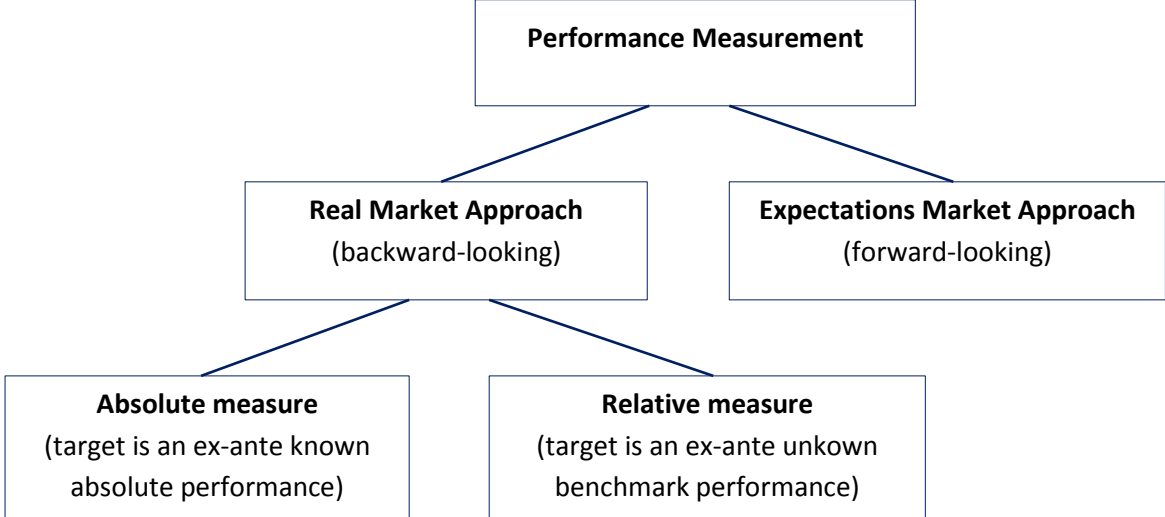
For the remainder of this research the assumption is made that the mainstream in literature, who believe that agents are (at least to a certain degree) self-interested and effort-averse, are right and a pension fund would be benefitted by creating incentives for its board members by including a carefully designed pay-for-performance component in their remuneration packages. But this assumption comes with a challenge: finding a good definition for the performance of the pension fund board members. The following paragraphs will elaborate on the different approaches for performance measurement, narrowing down to a useful approach for pension funds.

#### *The real market approach and the expectations market approach*

In general, there are two ways of defining performance. Performance can be measured using a real market approach or an expectations market approach (Martin, 2011). The real market approach is a straightforward approach, where the performance is derived straight from the goals of the organisation. For example, an organisation has the goal to generate a return on investment that is as high as 4%. The organisation is performing bad if it realises a return on investment of below 4% and the organisation is performing good if it realises a return on investment of over 4%. This is an example of so-called *absolute* performance measurement. Using a real market approach, performance can also be measured in a relative way. The same goal could be measured using a *relative* approach by comparing the realised return on investment to the realized return of a benchmark portfolio, which was constructed ex-ante. The fund is then underperforming if it realises a return which is lower than the return of the benchmark and outperforming when it realises a return which is higher than the return of the benchmark. Either way, using an absolute performance measure or a relative performance measure, a shortcoming of the real market approach is that it is a backward-looking approach, looking at the realised goals. Some actions of board members, however, will not show any results on the short run, e.g. changes in policy that will probably benefit in the long run. The expectations market approach offers a solution to this shortcoming, by capturing the expectations of the market about the future performance of a company based on the actions its board members take today. Those expectations are, assuming the efficient market hypothesis (EMH)

holds, incorporated in the stock price of a company. Therefore companies using the expectations market approach often use (options on) stocks of the company in their remuneration packages. Figure 2 below illustrates the both approaches for performance measurement.

**Figure 2: Different approaches for performance measurement**



Although the expectations market approach solves for the absence of a forward-looking measure in the real market approach, it is not easily applicable to pension funds since they don't issue any stocks that are being traded on the market. For this reason, the rest of this section will focus on the real market approach, searching the literature for the goals of pension funds and thereby for proper performance indicators that could be used for performance pay. In chapter three, where the specific performance indicators will be considered that are usable in practice, an attempt will be made to integrate some of the forward-looking advantages of the expectations market approach into the real market approach that will be used in this research.

*The goals of pension funds*

As stated in the previous paragraph, using the real market approach performance indicators are derived straight from the goals of the organisation. For commercial enterprises, where the shareholder is the principal, defining performance indicators is less of a challenge than it is for pension funds. The major goal for a commercial company is usually to improve shareholder wealth<sup>12</sup>. The improvement of shareholder wealth can be measured in many different ways, of which the most

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<sup>12</sup> Besides the goal to improve shareholder wealth, in recent years companies are more and more focussing on meeting social and environmental goals. Because this is not relevant for this research it will not be part of the discussion.

common measurement tools are Economic Value Added (EVA), Return on Investment (ROI), etc.<sup>13</sup> A pension fund on the other hand, has a much broader set of goals. As a result of the associated employers and employees being the principals of a pension fund, all the services provided to the employers and employees are in scope for the goals of the pension fund. Ambachtsheer (2011) made an attempt to sum up the major goals for a pension fund in his search for performance indicators that were useful for the variable pay part of a suitable remuneration policy for the Canada Pension Plan Investment Board (CPPIB). The baseline of his search included the following pension fund goals:

- i) A productive investment function: is the risk appetite of the board members in line with the risk appetite of the participants, is the investment function cost-efficient, is the risk-return ratio optimal, is the fund not underperforming with relation to realised return?
- ii) An effective administration: are the pension rights and benefits administrated well, are the employees satisfied with the administrative performance, is the administration process cost-efficient, is the pension fund continuously searching for ways to make the administration more effective?
- iii) Outstanding advice: is the pension fund giving advice to employers and employees about the pension agreement, could it be designed better for a more cost efficient execution, could it be designed better for future sustainability?
- iv) Utilization of scale: is the pension fund utilizing its (possible) scale advantages?
- v) Effective HR management: is the pension fund hiring the right people for the job?

Those goals are for the greater part also applicable for Dutch pension funds. The fifth performance measure, effective HR management, is too a lesser extent applicable for the Dutch pension funds, because they outsource most of the operational activities that are directly related to servicing the employer(s) and employees (e.g. the pension administration, asset management and pension communication). For that reason most pension funds in the Netherlands have few or no employees. Droogh, Ory and Springintveld (2012) reviewed the goals Dutch pension funds set for themselves and concluded that the most commonly shared goals are

- a) proper execution of the pension contract;
- b) good management of the contribution rate;
- c) safeguarding the pensions in the long run;
- d) a firm way of investing and managing the contributions made by the employers/employees;
- e) communication with participants.

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<sup>13</sup> See Hilton (2005).

Those pension fund goals acknowledged by the Dutch researchers and their Canadian counterpart show much common good and can provide the necessary input for the establishment of performance indicators for Dutch pension fund performance. The third chapter of this thesis will take a closer look at the governance of Dutch pension funds, the position of the board members, their tasks and responsibilities and the derivation of measurable performance indicators. But first, the next section will elaborate on the 'restrictions' on pension fund board remuneration that are established by the Dutch government and should be taken into account when taking the leap to practice.

#### **2.4 Reducing the agency problem of Dutch pension funds: regulation by the government**

As already mentioned in the introduction of this thesis, during the past decade politicians became more and more aware of the risks of pay-for-performance and bad governance, as it contains the danger of board members taking excessive risks in order to reach their targets. In order to prevent companies, and especially financial institutions from using remuneration policies that could lead to excessive risk taking by executives and the presence of a bad governance framework which makes it harder to monitor and control the actions of board members, the Dutch government and the financial market supervisors introduced some rules and regulations during the past decade that will be described in the next few paragraphs: the guidelines for pension fund governance and the principles for modest remuneration.

##### *The guidelines for pension fund governance*

After a comprehensive study in 2003 by the Tabaksblat Committee, near the end of 2004 the Dutch corporate governance code was implemented. This code contained governance guidelines for all publicly traded companies in the Netherlands and had as a prime goal to reduce the agency problem within the Dutch corporate sector by lowering information asymmetries between executives and shareholders and offering shareholders more tools to monitor and control the executives. Also in 2004, the Dutch minister for Social affairs and Employment wanted a separate governance code for pension funds. Main reason for this demand for a separate governance code was (and still is) the major financial dependence of Dutch (former) employees on the performance of pension funds for their retirement income<sup>14</sup>. He demanded the Labour Foundation<sup>15</sup>, a partnership of the leading unions which represent Dutch employers and employees, to come up with guidelines for pension fund governance. With input from the Association of Company Pension Funds, the Association of Sectoral Pension Funds, the Association of Insurance Companies and the Coordinating Body of Associations for the Eldery the Labour Foundation presented the guidelines to the minister. The

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<sup>14</sup> See Stichting van de Arbeid (2005).

<sup>15</sup> In Dutch 'Stichting van de Arbeid'.



guidelines for pension fund governance, which became the name of the governance code for pension funds, were adopted in 2006 by all the contributing organisations and their members (all Dutch pension funds and pension insurers). The basis for the guidelines for pension fund governance are prescriptions for management, internal supervision, accountability, expertise, transparency and communication, setting minimum standards for all kinds of governance aspects. The focus of these guidelines is solely on the “monitoring” side of the agency problem and not on the “incentives” side. The Dutch pension funds, pension insurers and retiree representatives, together responsible for drafting the guidelines for pension fund governance, thus clearly prefer the path of increasing monitoring costs for pension fund executives in order to reduce the agency problem.

#### *The principles for modest remuneration*

The adaption of a governance code for pension funds leaves the question open as to whether the Dutch government or financial market supervisors (DNB, AFM) neglect the fact that pension funds could also, besides governance mechanisms, be using pay-for-performance incentives in order to reduce the agency problem. That appeared not to be the case when DNB in 2011 presented a study<sup>16</sup> about the use of variable pay by Dutch pension funds. The conclusion of the research was that pension funds did not use any pay-for-performance components that were contradictory<sup>17</sup> to the ‘principles of modest remuneration’ that were issued in 2009 in order to set restrictions on the usage of pay-for-performance by banks and insurance companies. Those principles include amongst other things a cap on variable pay (it should not exceed the fixed part of the remuneration), the usage of measureable performance indicators and the prescription to use a linear pay-out function instead of an all-or-nothing pay-out function. Thus, so far neither the Dutch government nor the financial market supervisors formulated additional guidelines for a suitable set of pay-for-performance principles for pension funds.

## **2.5 Conclusions and hypotheses**

This chapter described the relevant literature on executive remuneration and especially the use of pay-for-performance principles. It appeared that executive remuneration commonly exists of three components: a fixed base salary, a variable performance based salary and other benefits. The base fixed base salary part is expected to be mainly dependent on the size of the firm and (often as a result of the size of the firm) the complexity of the job. A larger organisation, with greater responsibilities for the executive board and more complex tasks (which demand for board members

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<sup>16</sup> The study was presented during a seminar on compliance for pension funds, organised by the Dutch Compliance Institute (‘Nederlands Compliance Instituut’) on 13 December 2011. The study was not published.

<sup>17</sup> The researchers of DNB did not specify whether or not incentive plans were used for Dutch pension fund board members, only that the remuneration policies were in line with the principles of modest remuneration.

with higher level competences), should offer a higher fixed base salary according to the literature that was summarized in this chapter. Therefore the first hypothesis for the empirical part of this research is:

*Hypothesis 1 - There is a causal relationship between the size of a pension fund and the height of the salary of its board members.*

The remainder of the chapter was dedicated to the agency problem and the role of the variable part of the salary of pension fund board members. It appeared that the agency problem for pension funds is complicated and therefore demand a deliberately designed package of arrangements in order to reduce the agency problem. According to the mainstream of the literature, the most effective solution is twofold:

- i) a set of governance mechanisms that helps the principal(s) control and monitor the actions of the agent, and
- ii) pay-for-performance arrangements that create incentives for the agent to act more in the interest of the principal(s).

This chapter concluded that a set of governance mechanisms is already set in place for pension funds, and therefore the first solution is used by all Dutch pension funds. Literature suggests that for optimizing the pension fund performance, the second solution should also be used. When pay-for-performance is integrated in remuneration packages for board members, this should be visible in the height of the total salary of board members: the total salary of a board member of an outperforming fund is expected to be higher than the total salary of an underperforming fund. Hence, expecting that Dutch pension funds make optimal use of pay-for-performance arrangements to enhance their performance, the second hypothesis is:

*Hypothesis 2 - There is a causal relationship between the performance of a pension fund and the height of the salary of its board members.*

In order to be able to test for this second hypothesis, suitable measures for pension fund performance should be constructed. The third chapter of this thesis will try and construct those performance indicators by clearly describing the goals of Dutch pension funds and the tasks and responsibilities of their board members.

### 3. Pension funds: scope, tasks and performance indicators

The previous chapter described the mainstream of academic literature about the agency problem for pension funds and the role of monitoring and control, but especially incentive pay, in reducing this agency problem and thus enhancing pension fund performance. In order to be able to test if the height of the salary of pension fund board members is dependent on performance and hence is being used to enhance performance, it was said that it is necessary to construct useful performance indicators. This chapter will try and establish those performance indicators stepwise. In the first section, the three different kinds of pension funds in the Netherlands will be described, discussing if all three kinds are able to fit in the scope of this research. The second section then will zoom in on the pension funds that fit in the scope and describe the environment the board members of those funds operate in, to get a better sense of their tasks and the way they have to give accountability for their actions towards the stakeholders. Also, this will shed a light on the governance mechanisms that are being used to manage the alignment of the interests of the pension fund board members with the interests of the employer(s) and employees. In the third section the step is made to derive useful performance indicators from both the literature (see chapter 2.3) and the executive tasks that are observed from Dutch practice and are described in this chapter. The chapter will wrap up with a short summary of all the derived performance indicators in the fourth section.

#### 3.1 The different kinds of pension funds: suitability

Dutch pension funds, providing second pillar<sup>18</sup> retirement income for their participants, do not all use the same governance model. The most important reason for the adoption of different governance models is the difference in kind of pension funds. The three different kinds of pension funds in the Netherlands are company pension funds, industry-wide pension funds and occupational pension funds. The next three paragraphs will view the main characteristics of these three kinds of pension funds and evaluate their fit for the scope of this research.

##### *Company pension funds*

There are 293 active company pension funds in the Netherlands<sup>19</sup>, with an average size of EUR 700 million assets under management. Company pension funds are tied to one company and, possibly, to

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<sup>18</sup> Second pillar refers to the categorization of different sources of retirement income as used by the World bank and refers to pension contracts between employers and employees, which are part of the labour agreement.

<sup>19</sup> As of the 31st of December 2011 according to the Dutch Chamber of Commerce. This date is chosen because the data on pension fund board remuneration (see chapter 4) that is used for this research covers the year 2011.

all other companies that (either to date or historically) belong to the same concern. The board of a company pension fund usually consists of an equal number of employees and employer representatives of the sponsor company, complemented with one or two retirees of the company. The board members of a company pension fund in general do not receive any payment for their efforts. The salary they earn at the sponsor company could be seen as the remuneration for their job at the pension fund, since they normally perform their tasks for the pension fund during work hours. The absence of a compensation for board members that has a direct link to their activities for the pension fund makes it irrelevant to include company pension funds in the remainder of this research: the existence of a salary is necessary for being able to evaluate if the salary is dependent on performance.

### *Industry-wide pension funds*

There are 76 active industry-wide pension funds in the Netherlands. Industry-wide pension funds are, as the name already suggests, tied to a certain industry. Examples are the pension fund for marine fishery<sup>20</sup> (the smallest one with EUR 70 million of assets under management) and the pension fund for government and education<sup>21</sup> (the largest one with EUR 265 billion of assets under management). The board members of industry-wide pension funds are nominated according to a nomination policy by the labour union and employer union that are active within an industry. The remuneration of the board members is relatively transparent (75 out of the 76 industry-wide pension funds report the height of the total remuneration<sup>22</sup> of the pension fund board in their annual report, where for other kinds of pension funds this is only the case for the minority). Besides the transparency in remuneration, industry-wide pension funds are very extensive in reporting all (non-)financial key figures of the fund to their stakeholders, through their annual reports, but also through information on their websites. Hence, the conclusion can be drawn that industry-wide pension funds are fit for the purpose of this research and therefore will be adopted in the scope of this research.

### *Occupational pension funds*

There are only 11 active occupational pension funds in the Netherlands with assets under management ranging from EUR 50 million to EUR 11 billion. Occupational pension funds are tied to a certain profession. Examples are the pension fund for medical specialists<sup>23</sup>, the pension fund for

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<sup>20</sup> 'Stichting Bedrijfspensioenfonds voor de Zeevisserij'.

<sup>21</sup> 'Stichting Pensioenfonds ABP'.

<sup>22</sup> Industry-wide pension funds can still be more transparent by reporting the remuneration for each board member, instead of the total board remuneration. An example of a pension fund that reports the remuneration for each board member is 'Stichting Pensioenfonds ABP'.

<sup>23</sup> 'Stichting Pensioenfonds Medisch Specialisten'.

dentists<sup>24</sup> and the pension fund for notaries<sup>25</sup>. Unlike the industry-wide pension funds, the board members of occupational pension funds are not nominated by labour unions and employer unions. Participants of occupational pension funds are commonly practicing liberal occupations, where it is hard to label people as employees or employers: often they are self-employed. For this reason it is common to have only one association, which offers a membership to all participants, nominating board members for occupational pension funds. Having only one nominating union, which is also representing all participants, makes the agency problem for occupational pension funds different than the agency problem for industry-wide pension funds. The pension agreement is no longer a condition of employment, which is negotiated between (representatives) of the employers and employees. Nevertheless, still the same goals as mentioned on page 15 of this thesis could apply to the board members of occupational pension funds. The data, however, that is extracted from the annual reports of the occupational pension funds, is not comparable to the data of the industry-wide pension funds. The data for occupational pension funds lacks for an indicator for the investment performance (which equals the z-score for industry wide pension funds, as will be elaborated on in the next chapter). Hence, occupational pension funds will be excluded from the remainder of this research.

Now the scope for this research is set on industry-wide pension funds only, the next paragraph will zoom in further on the tasks and responsibilities of the pension fund board members, also describing all internal and external relationships of the pension fund board they have to manage as part of their job.

### **3.2 The tasks, responsibilities and environment of pension fund board members**

In order to be able to describe the goal of the pension fund board and to consequently derive performance indicators from those goals, it is important to know the tasks and responsibilities of the pension fund (board). Besides that, for evaluating the need for pay incentives, it is relevant to investigate to what extent governance mechanisms are being used in order to reduce the negative effects of the agency problem. This section will provide a step by step description, starting with the governance mechanisms: the selection process of the pension fund board members, followed by the main operational activities of a pension fund the board is responsible for and the governance framework that is constructed in order to support those main activities. From there a description will be given of the decision making process regarding the execution of the strategy of the funds and changes in policies. Thereafter the section will end with the enumeration of all the entities to which

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<sup>24</sup> 'Stichting Pensioenfonds Tandartsen en Tandartsspecialisten'.

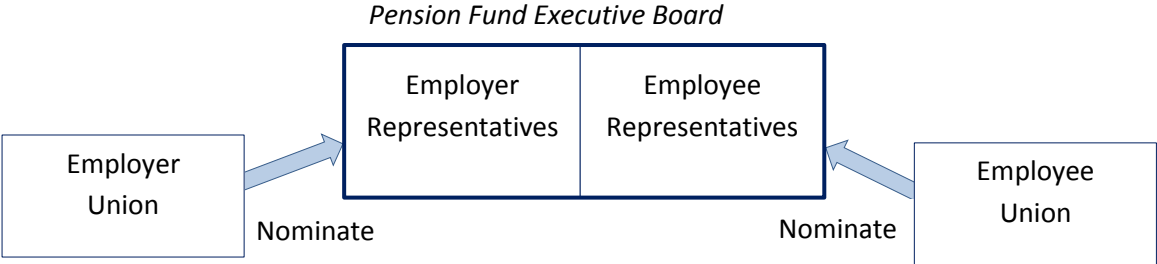
<sup>25</sup> 'Stichting Notarieel Pensioenfonds'.

the pension fund board has to account for regarding their followed strategy and actions. The total picture that is drawn in this section must then form a complement to the areas of performance as extracted from literature in the previous chapter. This practical review combined with the literature view should form a departing point for describing the goals of the pension fund board and hence the derivation of suitable performance indicators.

*The nomination of pension fund board members*

Most of the Dutch industry-wide pension funds have an executive board exclusively consisting of employer and employee representatives. Those employer and employee representatives are, by law<sup>26</sup>, proposed by respectively the employer union and employee union, as illustrated by figure 3 below. This already is the first governance mechanism for aligning the interests of the board members with the interests of the employers and employees: they belong to the group of stakeholders they represent and therefore have a tight connection with them, which will decrease the chance of shirking. Of the 76 annual reports of Dutch industry-wide pension funds that are analysed for this research, only one funds has a board including also other than employer and employee representatives. Dutch law leaves the way open for pension funds to include independent, professional members to their boards. Both the employer and employee representatives are expected by law<sup>27</sup> to act in the best interest of all stakeholders of the pension fund and are as a board responsible for all the tasks of the pension funds. For this reason, the performance of individual board members will be set equal to the performance of the pension fund as a whole, for the remainder of this thesis.

**Figure 3: The nomination of pension fund board members**



*The main operational activities of the pension fund*

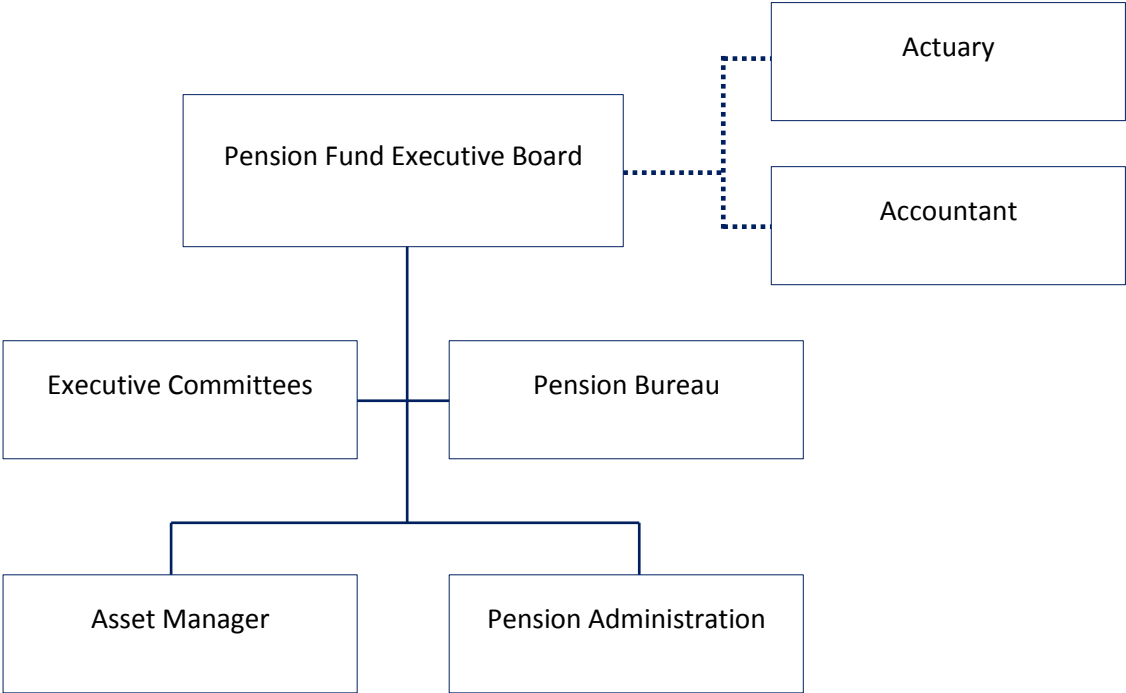
When reviewing all the annual reports of Dutch industry-wide pension funds it becomes very clear what the three main operational activities of the pension funds are. Those activities are *asset*

<sup>26</sup> See the Dutch pension law 'Pensioenwet', article 99:1.

<sup>27</sup> See the Dutch pension law 'Pensioenwet', article 105:2.

management, pension administration and pension communication, and do often demand their own chapter in the annual report of the fund. The pension administration is commonly outsourced to a pension delivery organisation (examples in the Netherlands are APG, AZL, Mn Services, PGGM, Syntrus Achmea, TKP) and the asset management is commonly outsourced to a (pension) asset management organisation (examples in the Netherlands are APG, BlackRock, F&C, Kempen, Mn Services, PGGM, Syntrus Achmea). The third main operational activity, pension communication, is sometimes being outsourced to a pension delivery organisation, but also often being executed by a pension bureau, which is solely constructed to perform non-outsourced activities for the pension fund. Another option is the outsourcing of the pension communication activities to agencies that are solely specialised in pension communication. For managing the operational activities effectively most industry-wide pension funds establish multiple executive committees, commonly existing of one or more board members and one or more external specialists on the matter. Most common examples of executive committees are an investment committee, outsourcing/audit committee and communication committee. The operational governance framework as a whole, which should secure the continuity of the main operational processes of a pension fund, is illustrated in figure 4 below. In one way or another, the performance indicators for pension fund board members that are constructed in this chapter should (at least) be related to the main processes as described in this paragraph.

**Figure 4: Board support for operational activities**

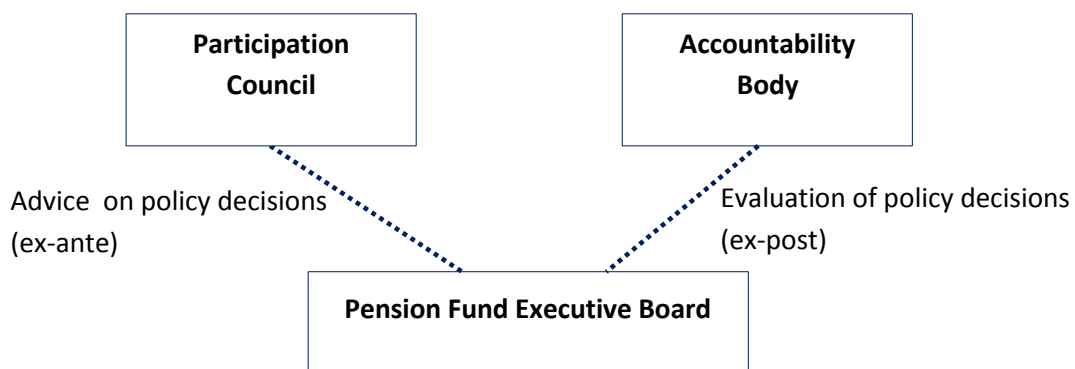


### *The process for making policy decisions and supervision*

With most of the operational activities being outsourced, the pension fund board is left with monitoring the outsourced activities (the 2<sup>nd</sup> level principal-agent relationship as described in section 2.2) and making the right decisions on policy changes and other executive tasks. Policy decisions are for example changes in investment plans, the communication plan, the height of the contribution rate, and the long-term focus of the pension fund board. For certain policy decisions, Dutch pension funds are obliged by law to call for advise of the participant council<sup>28</sup> which has the right to advise the pension fund board (ex-ante) on certain important matters with relation to changes in policy. For those important policy decisions (as summed up in article 111 of the Dutch pension law), the pension fund executive board is obliged to ask the participants, represented by the participation council, beforehand for advice, in such a way that the participation council gets the opportunity to influence the policy decision. The participation council exists, like the pension fund board itself, of representatives from the employers and employees, nominated by respectively the employer union and employee union.

Besides the ex-ante advice on policy decisions, the Dutch pension law also regulates the evaluation of the decisions made by the pension fund board. In order to do so every pension fund is obliged to establish an accountability body<sup>29</sup>, to which the pension fund board has to clarify their strategy on decision making processes. This accountability body usually meets with the pension fund board two times a year: one time after the end of the book-year to evaluate all key decisions and the followed strategy of the pension fund board over the past year, resulting in an evaluation in the annual report of the fund and one time halfway the book-year to perform a mid-time evaluation. Both the functions of the participation council and the accountability body are illustrated in figure 5 below.

**Figure 5: The evaluation of pension fund board policy decisions**



<sup>28</sup> In Dutch “deelnemersraad”, see the Dutch pension law ‘Pensioenwet’, article 109.

<sup>29</sup> In Dutch “verantwoordingsorgaan”, see the Dutch pension law ‘Pensioenwet’, article 33:1a.



Besides the presence of a participation council and an accountability body, the Dutch pension law also demands an internal supervision function: the on-site review committee<sup>30</sup>. The on-site review committee has the task to review (the decisions on) the policies conducted by the pension fund board and to evaluate their executive acts. This review is required to be conducted at least once each three years, but there are pension funds that voluntarily invite the on-site review committee on an annual basis. The on-site review committee consists of independent professionals who possess expertise in the field of pension administration and/or asset management and hence are capable of performing a reliable assessment on the performance of the pension fund board. On the tenth page of the ‘guidelines for pension fund governance’ the assessment of the on-site review committee is being described as follows:

*“This assessment primarily concerns policy and management procedures and processes, checks and balances, the way in which the administration of the scheme is managed and directed, and the way in which long-term risks for the pension fund and coverage ratio are managed.”*

The underlined phrases give a good image of how the pension funds themselves (who accepted the guidelines for pension fund governance) look at pension fund performance. Those three aspects, the management of the administration, the managing of the long-term risks and the managing of the coverage ratio will be taken into account when deriving the performance indicators for pension fund board members in the next section of this chapter.

With the description of the on-site review committee, the description of the governance framework in which the pension fund board operates is complete. Apart from the governing entities that are described, the pension fund board also has to report in a transparent way to all stakeholders (through the annual report of the pension fund), to the employees (e.g. by sending out a UPO every year, a document containing information about the accumulation of pension rights) and to the external supervisor DNB (by handing in monthly, quarterly and yearly reports about the financial situation of the funds). There are thus multiple governance mechanisms present to align the interests of the pension fund board members (the agents) with the interests of the employers and employees (the principals).

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<sup>30</sup> In Dutch “visitatiecommissie”, see the Dutch pension law ‘Pensioenwet’, article 33:1b.

### **3.3 Deriving indicators for pension fund board performance**

The previous section provided insight in the tasks of the pension fund board and the governance framework it operates in. With this description in mind and the goals of pension funds according to literature as described in the previous chapter, an attempt can be made to construct performance indicators. This section will try and bridge the gap between literature based performance indicators and their applicability. First, the most important areas of performance will be concluded, then for each performance area performance indicators will be established.

#### *The areas of performance*

When comparing the literature based goals of pension funds as described in chapter 2.3 and the tasks and responsibilities of the pension fund board as described in chapter 3.2, the following common areas of performance can be distinguished:

- i) Investment performance
- ii) Administrative performance
- iii) Communicative and advisory performance
- iv) Assets and liabilities management performance
- v) Utilization of scale advantages and search for cost reductions

Area i), ii), iii) and iv) are mentioned by both Ambachtsheer (2011) and Droogh, Ory and Springintveld (2012), where area ii) and iv) besides that are also mentioned in the guidelines for pension fund governance. Area v) is only directly mentioned by Ambachtsheer (2011), but is added because it indirectly affects the other performance areas in the long run (the sustainability of the pension fund). The remainder of this section will discuss possible performance indicators for each of the mentioned areas of performance. The operationalization of those performance indicators, i.e. turning the performance indicators into performance measures that are comparable between different pension funds, will be part of the methodology section of the next chapter.

#### *Investment performance*

Asset management is one of the three main operational activities of a pension fund, was concluded in chapter 3.2. Also the academic literature recognizes the importance of good investment performance by pension funds. A cost-efficient and firm way of investing and striving for an optimal risk-return ratio are the most commonly mentioned goals by the literature (see chapter 2.3). The optimal risk-return ratio is hereby the most feasible starting point. A suitable investment performance indicator should capture the performance in terms of a risk-return ratio. A common practice for such an indicator is the return in relation to an ex-ante constructed benchmark portfolio, which has the same risk profile. The cost-efficiency of the investment function then could be

integrated in this performance indicator by taking the net return after costs when comparing the realised return to the return of the benchmark portfolio. Hence, a suitable performance indicator for the investment performance would be:

The realized net return on investments compared to the realized net return of an ex-ante constructed benchmark portfolio with the same risk profile.

#### *Administrative performance*

Like the asset management function, the administration function is also one of the three main operational activities of a pension fund, as described in chapter 3.2. The literature on pension administration (see chapter 2.3) suggests that the pension rights should be administrated in a correct and cost-efficient way, that there should be a continuous search for the improvement of administrative processes and that the employers and employees (or participants) of the pension fund are satisfied about the administrative performance. Two of those goals, the cost-efficiency and the continuous search for improvement will be covered by the fifth performance area. The two remaining goals, the correctness of the pension administration and the satisfaction of employers and employees are for the greater part qualitative goals, demanding a qualitative approach. The correctness of the pension administration could be indicated by the amount of errors that are detected in the pension administration and the level of control of the pension fund board on the administrative processes. This should be determined by an independent auditor in order to prevent the pension fund board from judging their own performance. Hence the performance indicator for the correctness of administrative processes, using a real market approach with an absolute performance measurement could be:

The amount of detected errors in the process of pension administration compared to an ex-ante determined 'acceptable' amount of errors and a qualitative judgement about the level of control on the administrative processes, both determined by an independent auditor.

The second goal, the satisfaction of employers and employees (participants) of the pension fund, is subjective and therefore demands for a survey. In this survey different questions about the satisfaction with relation to the pension administration could be asked. Using a real market approach with an absolute way of measuring performance, a target level of satisfaction for each aspect of the pension administration could be established ex-ante. The comparison of the measured satisfaction (according to the survey) and the target level of satisfaction could then give an indication for the performance of the pension fund on this matter and hence the performance of the pension fund

board, which is responsible for the overall performance of the fund. Concluding, the performance indicator for the satisfaction of employers and employees could be:

The measured satisfaction of employees w.r.t. the administrative performance of the fund using a survey, in relation to the target level of satisfaction that was constructed ex-ante.

#### *Communicative and advisory performance*

In chapter 3.2 it was concluded that pension communication is one of the three main operational activities of a pension fund, next to asset management and pension administration, which were the previous two discussed performance areas. Communication is a broad theme and could for example contain communication to inform employers and employees about the execution of the pension contract, but also (a step further) advice on sustainability and cost-related matters with relation to the pension agreement (see chapter 2.3). However, like the problem with finding a performance indicator for the satisfaction of employers and employees (participants) about the administrative performance, also the experienced quality of communication and advice is a subjective measure. Therefore, also in this case a survey probably is the best - and only - way to measure the performance. Concluding, the performance indicator for the communicative and advisory performance could be:

The measured satisfaction of employers and employees about the communicative and advisory performance of the fund using a survey, in relation to the target level of satisfaction that was constructed ex-ante.

#### *Assets and liabilities management performance*

The fourth performance area contains the management of the assets and liabilities of the pension fund. Although the management of the assets and liabilities of the fund is not part of the main operational activities, it might be the most important management activity of the pension fund board: if a pension fund board fails to manage the assets and liabilities of the fund in a proper way it could have major consequences for the employers and employees. In the case of underfunding for example, employers face the risk of higher contributions asked by the fund and employees face the risk of cuts in their pension rights. The Dutch government also acknowledged the importance of asset and liability management and explicitly stated in the 'guidelines for pension fund governance' that the management of the coverage ratio is one of the determinants of the performance of the pension fund board (see chapter 2.4). With this statement, the Dutch government helps in deriving a performance indicator for the asset and liability management: the height of the coverage ratio (the

total assets of a pension fund divided by its total liabilities). Concluding, the performance indicator for the assets and liabilities management could be:

The coverage ratio of the pension fund.

#### *Utilization of scale advantages and the search for cost reductions*

The last performance area of the pension fund board contains all efforts that are taken to utilize all possible scale advantages of the fund and all efforts that are taken to reduce the costs. This performance area relates to the cost-effectiveness of all main operational activities. Unlike measuring the administrative and communicative performance, cost reduction is something that is quantifiable and hence it should be possible to construct a performance indicator that is 1) objectively measurable and 2) comparable between different pension funds. Using the real market approach the performance indicator could be established in an absolute way:

The realised cost reduction (as a % of total costs), compared to an ex-ante constructed target reduction.

or in a relative way:

The realised cost reduction (as a % of total costs), compared to the realised cost reduction (as a % of total costs) by a set of other pension funds which were ex-ante selected as a benchmark.

### **3.4 Summary of the main performance indicators for pension fund boards**

In the previous section performance indicators were constructed for each performance area of pension fund boards. In the methodology section of the next chapter the established performance indicators will be compared to the information about performance that is retrievable from the pension funds that are in the scope of this research. But first, a summary will be delivered of all performance indicators, the performance area they relate to and the used approach for the performance measurement. This summary is displayed in figure 6 on the next page.

**Figure 6: Summary of performance indicators**

Investment performance	
<p><b>Performance indicator:</b></p> <ul style="list-style-type: none"> <li>&gt; Realized net return on investments compared to the realized net return of an ex-ante constructed benchmark portfolio with the same risk profile.</li> </ul>	<p><b>Measurement categorization:</b></p> <p>Real market approach, relative measure</p>
Administrative performance	
<p><b>Performance indicators:</b></p> <ul style="list-style-type: none"> <li>&gt; The amount of occurred errors in the process of pension administration compared to an ex-ante determined 'acceptable' amount of errors and a qualitative judgement about the level of control on the administrative processes, both determined by an independent auditor</li> <li>&gt; The graded satisfaction of employees about the administrative performance of the fund using a survey, in relation to the target satisfaction grades that were constructed ex-ante.</li> </ul>	<p><b>Measurement categorization:</b></p> <p>Real market approach, absolute measure</p> <p>Real market approach, absolute measure</p>
Communicative and advisory performance	
<p><b>Performance indicator:</b></p> <ul style="list-style-type: none"> <li>&gt; The graded satisfaction of employers and employees about the communicative and advisory performance of the fund using a survey, in relation to the target satisfaction grades that were constructed ex-ante.</li> </ul>	<p><b>Measurement categorization:</b></p> <p>Real market approach, absolute measure</p>
Assets and liability management performance	
<p><b>Performance indicator:</b></p> <ul style="list-style-type: none"> <li>&gt; The cover ratio of the pension fund.</li> </ul>	<p><b>Measurement categorization:</b></p> <p>Real market approach, absolute measure</p>
Utilization of scale advantages and search for cost reductions	
<p><b>Performance indicator:</b></p> <ul style="list-style-type: none"> <li>&gt; The realised cost reduction (as a % of total costs), compared to an ex-ante constructed target reduction.</li> <li><i>or</i></li> <li>&gt; The realised cost reduction (as a % of total costs), compared to the realised cost reduction (as a % of total costs) by a set of other pension funds which were ex-ante selected as a benchmark.</li> </ul>	<p><b>Measurement categorization:</b></p> <p>Real market approach, absolute measure</p> <p>Real market approach, relative measure</p>

## **4. Empirics: searching for the explanatory variables behind executive remuneration**

The previous chapters described the academic literature on executive remuneration and performance measurement, as well as the governance of Dutch pension funds and the tasks and responsibilities of the executive board members. Departing from the main performance areas of pension funds boards, as derived both from literature (chapter 2) and the practical view on pension fund tasks (chapter 3), performance indicators were established. This chapter will continue with the empirical part of this research. Firstly, the first section will define the research approach including the selection of data sources. The second section then will describe the data and evaluate if the data can be linked to the performance indicators. The third section will describe the methodology that is being used for performing empirical tests on the data in order to verify the hypotheses as stated in section 2.5 and the fourth section will capture the results of these tests. The fifth and last section of this chapter will summarize this chapter and thus the empirical part of this thesis research.

### **4.1 Research approach**

In section 2.5 hypotheses were established regarding the explanatory variables behind the remuneration of pension fund board members. It was suggested that the salary of pension fund board members depends on the one hand on the size of the pension fund (hypothesis 1) and on the other hand on the performance of the pension fund (hypothesis 2). To be able to measure that performance, performance indicators were identified in the previous chapter. With a quantitative research approach, using linear regression analysis, this chapter will try and estimate the influence of both the size of a pension fund and the performance of the pension fund board on the height of the salary of the pension fund board members. The input data for this regression will be extracted from the annual reports over the years 2010 and 2011 of all Dutch industry-wide pension funds, that form the scope for this research as discussed in section 3.1. From these annual reports common measurements will be taken (in the next section of this chapter) that can be linked to the performance indicators as derived in the previous chapter. The choice to use annual reports as data source is made for three reasons: 1) annual reports form an objective data source, since the presented facts are checked by an independent accountant and hence increase the comparability of data from different pension funds, 2) annual reports are public and therefore make this research replicable by others, and 3) data gathering using other approaches (e.g. interviewing pension fund boards) would be too time consuming for this research or deliver a significantly smaller dataset.

**4.2 Selection of performance measures and description of the data**

In the previous chapter performance indicators were established to be able to measure the performance of pension fund boards. In this section for each performance area of the pension fund board objective measurements will be deducted that are retrievable from the annual reports of the pension funds in the dataset. The measurements will be suggested and discussed for each performance area, covering all performance areas: investment performance, administrative performance, communicative and advisory performance, asset and liability management performance and utilization of scale advantages and search for cost reductions.

*Investment performance*

In section 3.3 it was suggested that for indicating the investment performance of a pension fund, the *realized net return on investments compared to the realized net return of an ex-ante constructed benchmark portfolio with the same risk profile* would be the best suitable indicator. When analysing the annual reports of the pension funds in the dataset it appears that the majority of the pension funds report an objective measure which matches this performance indicator: the z-score for the investments. The z-score is a measure which industry-wide pension funds are obliged to report. It was introduced by law<sup>31</sup> in the year 2000 as an objective indication for the investment performance of industry-wide pension funds. For a lot of industries, participating in the industry-wide pension fund is obligatory for all companies operating in that industry. As the government decided that it was undesirable to oblige companies to participate in an underperforming pension fund, the z-score and performance test were introduced. A negative performance test (i.e. the weighted average of z-scores over a period of five consecutive years) allows companies to be exempted from the obligation of participating in the industry-wide pension fund. The z-score is a comparison between the realised return on the total investment portfolio (corrected for costs) and the return of the ex-ante constructed benchmark portfolio (corrected for hypothetical costs). This benchmark portfolio should have the same risk profile as the actual investment portfolio and is to be confirmed by an independent accountant. This precaution measure should safeguard the objectivity of the benchmarking process. For the mathematical calculation of the z-score and performance test, see also annex 2 of this thesis. For the remainder of this research, the z-score will be used as the measure for investment performance.

Measure for investment performance	Z-score
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<sup>31</sup> See the Dutch law on exemption from the obligatory participation in industry-wide pension funds 'Vrijstellings- en boetebesluit Wet Bpf 2000', article 5.



### *Administrative performance*

In the third chapter, section 3.3, it was suggested that for indicating the administrative performance of a pension fund, the *amount of detected errors in the process of pension administration compared to an ex-ante determined ‘acceptable’ amount of errors and a qualitative judgement about the level of control on the administrative processes, both determined by an independent auditor* would be the best suitable. Analysing the annual reports of all the pension funds in the scope of this research, it appeared that there is no data available that matches this performance indicator. Depending on the arrangements that a pension fund has made with the pension delivery organisation it outsourced the pension administration to, the pension fund possibly receives reports containing this kind of information (most pension funds mention quality reports like ISAE3402 type II reports). However, this information is not made public through the annual report. Another possible performance indicator, the CEM Benchmark for the quality of the administration<sup>32</sup>, is not applicable for this research because only a few pension funds that are part of the dataset participate in the independent benchmarking of CEM. Hence, the conclusion is that due to lack of information this performance indicator cannot be used for the data regression in this research.

The other suitable indicator for administrative performance, as suggested in chapter 3.3, is *the measured satisfaction of employees w.r.t. the administrative performance of the fund using a survey, in relation to the target level of satisfaction that was constructed ex-ante*. Analysing the annual reports of the pension funds that are in the dataset, it appears that some pension funds are using surveys to gain insight in the satisfaction of employees about the administrative performance. However, the outcomes of those surveys are reported in the annual reports in a limited way and, besides that, in a qualitative way. Because of this limited and non-quantitative way of reporting the satisfaction of the employers and employees that are participating in the pension fund, the non-existence of a generic survey tool for measuring the satisfaction about the administrative performance of all pension funds in the data set and the fact that only a few pension funds report the outcomes, also this second indicator for administrative performance cannot be measured using the approach of this research. Hence, no measure for administrative performance will be used in the data regression in this chapter.

Measure for administrative performance	<i>none</i>
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<sup>32</sup> See Bikker, Steenbeek and Torracchi (2010).

*Communicative and advisory performance*

In the third chapter, section 3.3, it was suggested that for indicating the investment performance of a pension fund, the *measured satisfaction of employers and employees about the communicative and advisory performance of the fund using a survey, in relation to the target level of satisfaction that was constructed ex-ante* would be the best suitable. Analysing the annual reports of the pension funds that are in the dataset, the same conclusion can be drawn as regarding to the survey about the employee satisfaction with relation to the administrative performance of the pension fund. The pension funds that are reporting about their ‘customer satisfaction survey’ include communicative and advisory satisfaction in their surveys. However, for the same reasons as mentioned in the previous section, data from the annual reports on this matter is not useful for the data regression in this chapter and hence will not be used.

Measure for communicative and advisory performance	none
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*Asset and liability management performance*

In chapter 3.3 it was suggested that for indicating the investment performance of a pension fund, the *coverage ratio of the pension fund* would be the best suitable. Analysing the annual reports of all pension funds that are in the scope for this research, it appears that the coverage ratio is available for all pension funds. It also appears that a coverage ratio of 105% (i.e. for each 1 euro of liabilities the pension fund has 1,05 euro of assets) is the minimum required coverage ratio, or funding ratio, according to the rules of the pension fund supervisor DNB. Simply said, a coverage ratio below 105% (resulting in intensified external supervision and possible cuts in pension rights) could be perceived as bad performance of the asset and liability management of a pension fund and a coverage ratio above 105% (resulting in the existence of reserves and possible indexation of pension rights) could be perceived as good performance of the asset and liability management of a pension fund. Hence, the deviation of the coverage ratio from 105% (in percentage points) will be used in the remainder of this research as the measure for asset and liability management performance.

Measure for asset and liability management performance	Coverage ratio: deviation from 105%
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*Utilization of scale advantages and search for cost reductions*

In chapter 3.3 it was suggested that for indicating the investment performance of a pension fund, the *realised cost reduction (as a % of total costs), compared to an ex-ante constructed target reduction or the realised cost reduction (as a % of total costs), compared to the realised cost reduction (as a % of total costs) by a set of other pension funds which were ex-ante selected as a benchmark* would be the best suitable. Analysing the annual reports of all pension funds that are in the scope for this research, it appears that all pension funds report their cost levels. The way they report there cost levels, however, is different. In many cases it is not completely clear which cost components are included in the execution costs the fund reports and which components are excluded. This makes the outcome of the regression less reliable and hence this performance measure will not be used in the remainder of this research.

Measure for utilization of scale advantages and search for cost reductions	none
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*Summary*

This section analysed the annual reports of the pension funds that are in the scope of this research, searching for data that matched the performance indicators that were established in the previous chapter.

**Figure 7: Summary of performance measures**

Performance area	Measure
Investment performance	Z-score
Administrative performance	
Communicative and advisory performance	
Asset and liability management performance	Coverage ratio: deviation from 105
Utilization of scale advantages and search for cost reductions	

**4.3 Methodology and data analysis**

In continuation of the empirical part of this thesis, this section will elaborate on the methodology and analyse the data. As described in section 4.1, a quantitative research approach will be used, using linear regression analysis, to try and estimate the influence of both the size of a pension fund and the performance of the pension fund board on the level of the salary of the pension fund board

members. As discussed in section 4.2, the z-score and the coverage ratio (deviation from 105%) will be used as estimators for the (possibly) variable part of the salary of pension fund board members and the size of the pension fund will be used as an estimator for the height of the fixed base salary. Besides the size of the pension fund, another possible explanatory variable for the height of the fixed base salary was noticed during the description of the governance of pension funds in chapter 3: the number of executive committees. The more executive committees there are, the more time (hypothetically) a pension fund board member has to spend on his job, since the executive committees do at least include one board member each. Hence, the regression that results from this discussion is:

$$(1) y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e$$

*Where:*

$y$  = the average remuneration per pension fund board member

$a$  = the intercept value

$x_1$  = the size of the pension fund

$x_2$  = the number of executive committees

$x_3$  = the z-score

$x_4$  = the coverage ratio (deviation from 105% in percentage points)

$e$  = the error term

$b_1, b_2, b_3, b_4$  = the weight of each explanatory variable in explaining the dependent variable  $y$

Before performing the regression analysis, the process of data gathering will be described and the explanatory variables (estimators) will be analysed one by one to confirm that they are appropriate to use in this regression.

#### *The process of data gathering*

The input data for the dependent and explanatory variables of regression (1) are taken from the annual reports of the Dutch industry-wide pension funds that are in the scope of this research (see chapter 3.1). For this purpose, the annual reports over the year 2011 from the 70 industry-wide pension funds that were operational at the 1<sup>st</sup> of January 2012 are analysed, since these are the most recent available annual reports at the time of the execution of this empirical research (September – December 2012). The analysis of those 70 annual reports results in the elimination of 19 pension funds from the dataset. Reasons for elimination are the absence of z-scores, the absence of information about executive remuneration, the absence of an annual report, and the absence of key figures from earlier years because one the pension funds in the dataset did not exist before 2011 and

figures from earlier years are needed to perform the regression on the 'lagged' performance. This elimination process leads to a dataset consisting of 51 industry-wide pension funds (see Annex 1 for a list of the names of all these pension funds). For all 51 pension funds the necessary data for performing regression (1) is collected: the size of the pension fund (measured by the amount of assets under management), the number of executive committees, the z-score (both for the year 2010 en 2011) and the coverage ratio (both for the year 2010 and 2011, the deviation from 105% in percentage points). The z-score and coverage ratio of 2010 are included to be able to also regress the remuneration of the pension fund board members against the performance of one year earlier (in case a performance related remuneration contains a one year lag). Below, descriptive statistics will be provided for all variables that will be used in the regression and will provide an analysis for the suitability of the usage of each estimator in the regression.

*Analysis of the estimators*

With a clean dataset available the next step before performing the regression analysis will be a pre-analysis of each estimator that is used in the regression. Figure 8 below presents descriptive statistics on all variables, followed by a short explanation for each variable. For these descriptive statistics and the analysis of the estimators, as well as the regression itself which will be executed in the next section, the statistical program SPSS is used.

**Figure 8: Descriptive statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
(1) Average remuneration per board member	51	3500	79799	18890,50	16182,756
(2) AuM (billions of EUR)	51	,072	265,683	11,40774	41,213873
(3) Number of executive committees	51	0	6	3,22	1,419
(4) Z-Score 2010	51	-2,5	4,9	,462	1,0210
(5) Z-Score 2011	51	-3,3	6,5	,214	1,4550
(6) Coverage ratio 2010 (deviation from 105)	51	-11,7	18,5	-,747	7,6371
(7) Coverage ratio 2011 (deviation from 105)	51	-23,9	13,5	-6,677	7,6038
Valid N (listwise)	51				

(1) The average remuneration per board member is calculated by dividing the total remuneration of the pension fund board (stated in the annual reports as the amount of expenses by the fund and not as the net income for the board members) by the number of board members. The average

remuneration per board member on a yearly basis is EUR 18.890, but there are great differences between pension funds: the lowest remuneration is EUR 3.500, while the highest remuneration is almost EUR 80.000.

- (2) The assets under management (AuM) of the pension funds that are part of the dataset are on average EUR 11,4 billion. There is however a great variation in the amount of AuM, with the lowest amount of AuM being EUR 72 million and the highest amount of AuM being over EUR 265 billion.
- (3) The pension funds that are part of the dataset have on average 3 executive committees, ranging from 0 executive committees to 6 executive committees. The definition for executive committee that is used, is a committee which prepares a specific subject board meetings (e.g. investment policy, communication policy) in which at least 1 executive board member is participating.
- (4) and (5) The z-scores of the pension funds that are part of the dataset are positive for both the year 2010 (4) and 2011 (5). That means that on average pension funds are outperforming their investment benchmarks.
- (6) The coverage ratios of the pension funds that are part of the dataset are on average below the minimum required coverage ratio of 105%. Where in 2010 the average coverage ratio was less than 1 percentage point below 105%, the average coverage ratio fell in 2011 to 97,5%, 7,5 percentage points below the minimum required ratio coverage ratio of 105%.

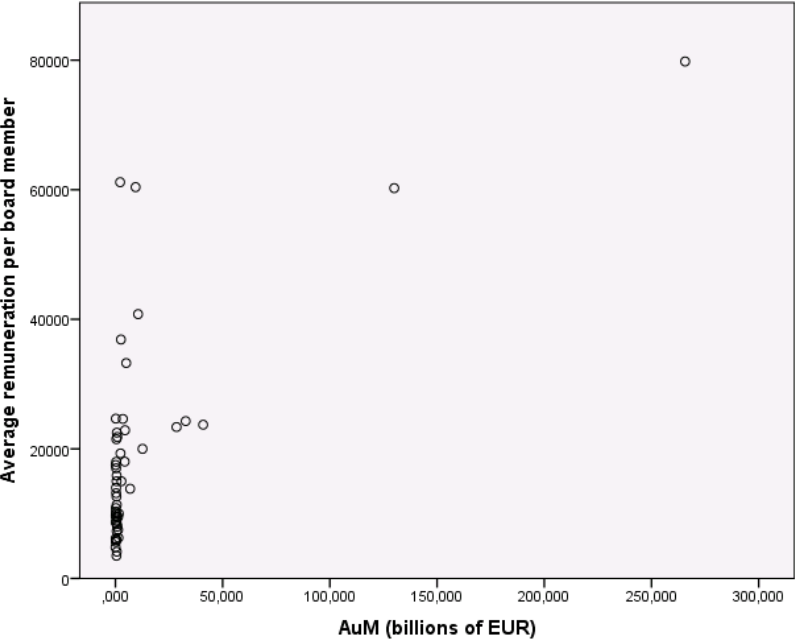
Before performing the regression analysis, all estimators will be reviewed. The first one will be the AuM. When plotting the average remuneration per board member against the AuM there seems to be no linear relationship between the two (see figure 9 on the next page). However, logical reasoning should also not suggest that doubling the size of a pension fund would double the size of the salary of its board members, since the governing would not get twice as complicated. A more logical explanation would be that with the growth of AuM the salary of the pension fund board members would increase in a declining way. This hypothesis is in line with Hay Group's method for job evaluation and profiling<sup>33</sup>, which also uses a per cent method. Comparison of job factors follows Webers' Law, in that an observable difference between job factors is expressed as a ratio of that difference to the magnitude of one of these factors. This 'difference limen' had been found to be 15%. These 15%-steps of the Hay method indicate that the use of a logarithmic scale for AuM might be the right input for the regression. In order to verify this assumption a new variable, the natural logarithm of the AuM, is constructed and also plotted against the average remuneration per board member (see figure 10 below). It appears that using the natural logarithm of the AuM, the problem

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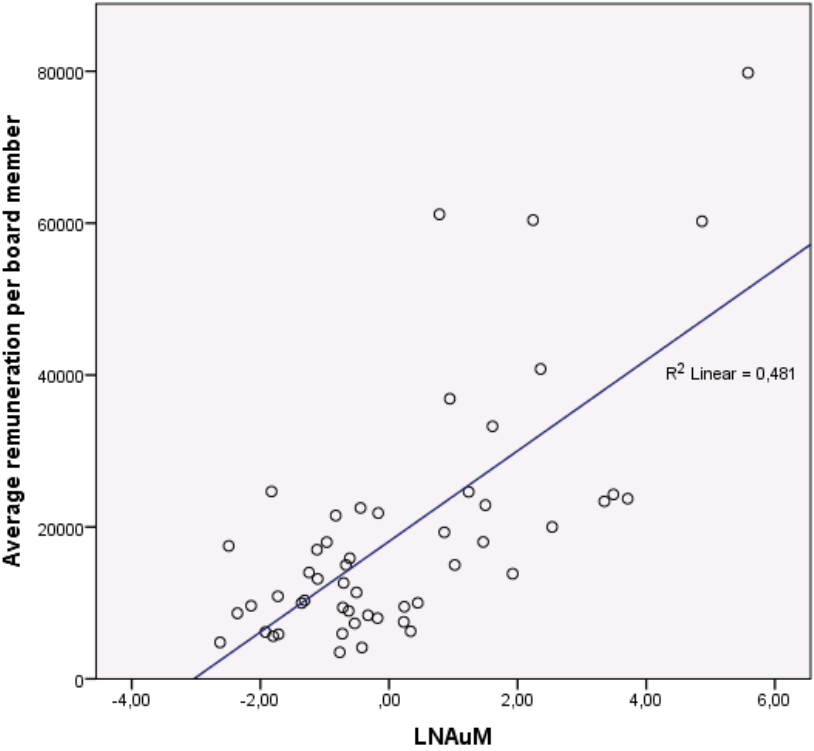
<sup>33</sup> See Hay and Purves (1951).

of non-linearity is solved. Hence, the natural logarithm of the AuM (LN\_AuM) will be used in the regression.

**Figure 9: Average remuneration plotted against AuM**



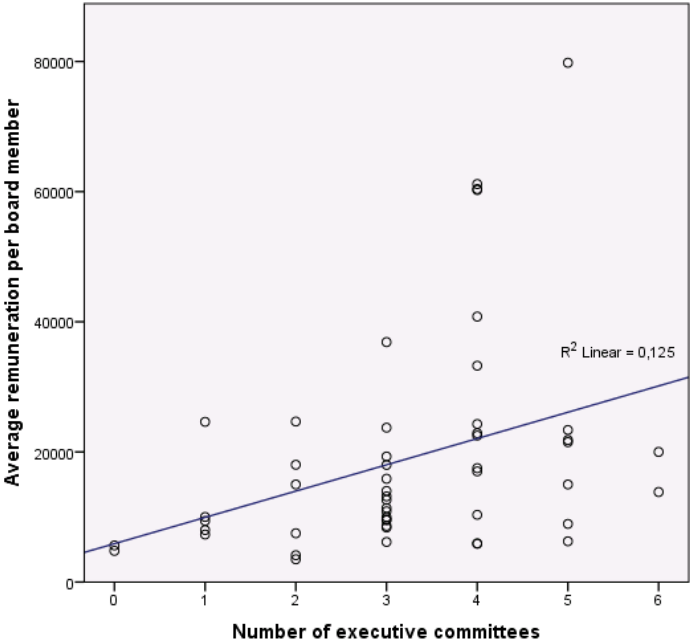
**Figure 10: Average remuneration plotted against LN\_AuM**



When plotting the average remuneration per board member against the second estimator, the number of executive committees, the relationship is less clear (see figure 11 below). Although the

overall observation is that there seems to be some correlation between the number of executive committees and the average remuneration per pension fund board member, this relationship is less strong than the relationship between LN\_AuM and the average remuneration. Testing for a quadratic or cubic relationship, does not improve this and hence this second estimator (the number of executive committees) will be used in the regression without redirection.

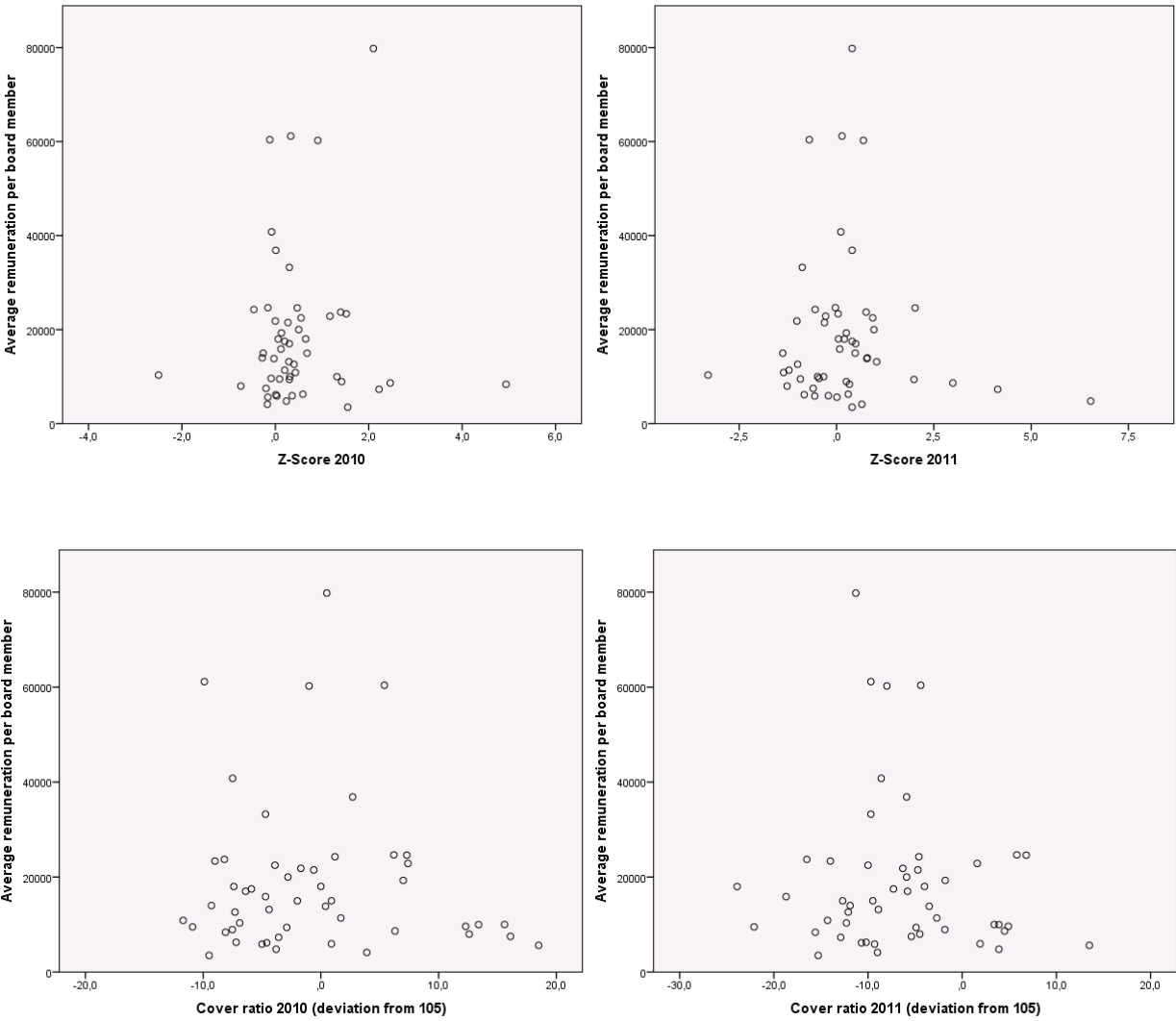
**Figure 11: Average remuneration plotted against the number of executive committees**



The last two estimators that will be used in the regression and will be pre-analysed are the z-score and coverage ratio (deviation from 105% in percentage points). In figure 12 below, both are plotted for the year 2010 en 2011 against the average remuneration per board member in 2011. From these plots it seems that both the z-score and coverage ratio do not possess any explanatory power for the average remuneration per pension fund board member. Also transforming those variables will not be feasible, since a non-linear relationship could not be observed from these plots either. A remarkable observation however, is that it appears that the pension funds with the higher average remuneration show average performances and that the pension funds with the lower average remuneration show both significant underperformances and significant outperformances. This could be an interesting topic for future researches.



**Figure 12: Average remuneration plotted against z-scores and coverage ratios**



With the reflexion on the z-score and coverage ratio the pre-analysis of all estimators for regression (1) is complete. In the next section the regression itself will be executed and the hypotheses that were established in the first chapter of this thesis will be evaluated.

**4.4 Results**

The first regression that is estimated using an OLS regression analysis is based on regression (1) as described in the previous section, and regresses the average remuneration per pension fund board member in 2011 on the LN\_AuM, the number of executive committees of the pension fund in 2011, the z-score (over the year 2011) and coverage ratio (at the end of 2011), is:

$$(1a) \ y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e$$

Where:

y = the average (yearly) remuneration per pension fund board member in 2011

$a$  = the intercept value

$x_1$  = the natural logarithm of the AuM of the pension fund (LN\_AuM)

$x_2$  = the number of executive committees of the pension fund

$x_3$  = the z-score over the year 2011 of the pension fund

$x_4$  = the coverage ratio (deviation from 105% in percentage points) of the pension fund at 31 December 2011

$e$  = the error term

$b_1, b_2, b_3, b_4$  = the weight of each explanatory variable in explaining the dependent variable  $y$

When looking at the hypotheses as described in chapter 2, the significance of  $b_1$  will be important for testing hypothesis 1 (where a value for  $b_1$  which significantly differs from zero will result in a rejection of the null hypothesis) and the significance of  $b_3$  and  $b_4$  will be important for testing hypothesis 2 (where a value for  $b_3$  and  $b_4$  which significantly differs from zero will result in a rejection of the null hypothesis). The possible significance of  $b_1$  does not directly relate to hypothesis 1 or 2, but could have influence on the explanatory power of the regression, since it was concluded in the third chapter that the number of executive committees might influence the level of the salary of the pension fund board members.

*Hypothesis 1 - There is a causal relationship between the size of a pension fund and the height of the salary of its board members.*

H0	The average remuneration per pension fund board member is <u>not</u> dependent on the size of a pension fund.
Ha	The average remuneration per pension fund board member is dependent on the size of a pension fund.

*Hypothesis 2 - There is a causal relationship between the performance of a pension fund and the height of the salary of its board members.*

H0	The average remuneration per pension fund board member is <u>not</u> dependent on the performance of a pension fund.
Ha	The average remuneration per pension fund board member is dependent on the performance of a pension fund.

As an extra confirmation of the (non-)rejection of the second hypothesis, after regression (1a) a second regression (1b) will be performed, where the difference between (1a) and (1b) is that in

regression (1b) the  $x_3$  and  $x_4$  estimators relate to the year 2010 instead of the year 2011. The  $x_3$  and  $x_4$  estimators in regression (1a) thus test for the dependency of the average remuneration of pension fund board members on the performance of the fund in the same year as the remuneration is given and the  $x_3$  and  $x_4$  estimators in regression (1b) test for the dependency of the average remuneration of pension fund board members on the performance of the fund in the year antecedent to the year in which the remuneration is given. Regression 1b thus tests for a possible lag in a performance related remuneration component.

*Regression analysis (1a)*

The output that is generated performing regression (1a) is displayed in figure 13 below.

**Figure 13: Output for regression (1a)**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6453667575,470	4	1613416893,868	11,177	,000 <sup>b</sup>
	Residual	6640411643,384	46	144356774,856		
	Total	13094079218,855	50			

a. Dependent Variable: Average remuneration per board member

b. Predictors: (Constant), Coverage ratio 2011 (deviation from 105), LNAuM, Z-Score 2011, Number of executive committees

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,702 <sup>a</sup>	,493	,449	12014,856

a. Predictors: (Constant), Coverage ratio 2011 (deviation from 105), LNAuM, Z-Score 2011, Number of executive committees

### Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	14908,436	4813,723		
LNAuM	5690,009	989,169	,662	5,752	,000*
Number of executive committees	1283,840	1397,156	,113	,919	,363
Z-Score 2011	101,074	1239,636	,009	,082	,935
Coverage ratio 2011 (deviation from 105)	138,272	235,614	,065	,587	,560

Correlations			Collinearity Statistics	
Zero-order	Partial	Part	Tolerance	VIF
,694	,647	,604	,833	1,201
,354	,134	,096	,735	1,361
-,062	,012	,009	,888	1,127
-,088	,086	,062	,899	1,112

Analysing these regression results, the first key figure that should be discussed is the ANOVA output. As can be seen in the first table of figure 13, the F-test is significant, and hence the estimators used in the regression do have predictive power for the average remuneration of pension fund board members. The second table, with the model summary, confirms this observation: it shows a  $R^2$  of 0,493, meaning that almost half of the variation in the average remuneration of pension fund board members is explained by the estimators used in the model. The third table (coefficients) then shows the betas of the estimators and their significance. It appears that both the intercept (constant) and the pension fund size (LN\_AuM) are significant at both a 95% and 99% confidence level. The other estimators, the z-score and the coverage ratio, are not significantly different from zero. Hence, these results lead to the rejection of the null hypothesis for hypothesis 1: the test result shows that the average remuneration per pension fund board member is dependent on the size of a pension fund and therefore hypothesis 1 appears to be true. On the other hand the test results do not lead to the rejection of the null hypothesis for hypothesis 2: the test results show no evidence for the average remuneration per pension fund board member to be dependent on the used performance measures (the z-score and the coverage ratio). Thus, the regression analysis finds no evidence for the use of pay-for-performance principles by pension funds for the remuneration of their board members. The next section will evaluate the robustness of the regression, and thereby the robustness of the conclusions drawn from this regression.

*Robustness of regression analysis (1a)*

One possible issue with a regression analysis using multiple explanatory variables is multicollinearity: the issue that two or more explanatory variables explain the same part of variation in the dependent variable. The last table of figure 13 above and the table in figure 14 below show results for the collinearity test. The high tolerance (see the last table of figure 13) shows that the level of collinearity is very low. A value for tolerance of 1 means that none of the variance in the dependent variable that is explained by that particular explanatory variable is explained by any of the other explanatory variables and there is no multi-collinearity. Since the level of tolerance is close to 1 for all explanatory variables, it can be concluded that the level of collinearity is low and thus does not affect the robustness of the regression analysis in a negative way. The results in the table of figure 14 confirm this conclusion. A condition index of 15 or higher indicates a possible presence of multicollinearity and since all values for the condition index are below 7, the conclusion that the robustness of the regression analysis is not affected in a negative way by multicollinearity can be confirmed.

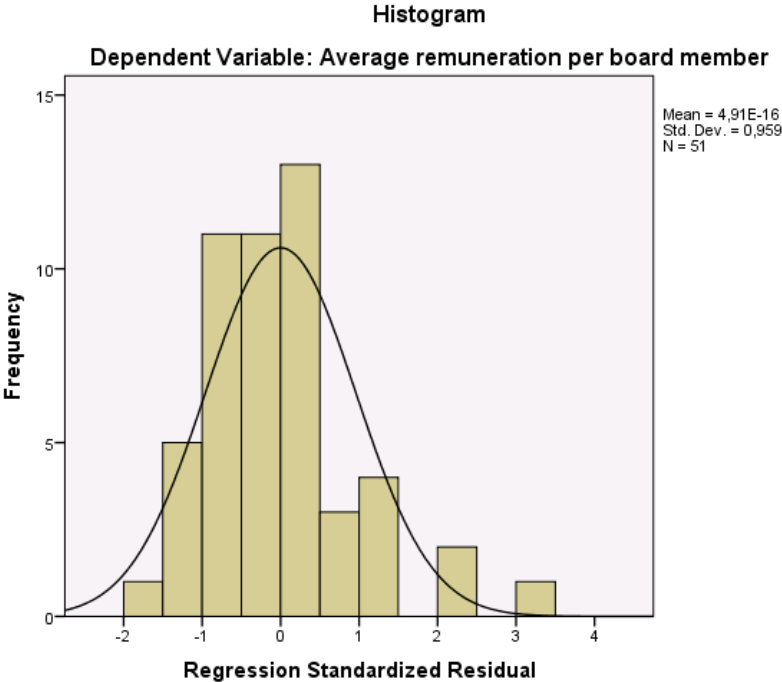
**Figure 14: Collinearity test for regression (1a)**

Collinearity Diagnostics <sup>a</sup>							
Dimension	Eigenvalue	Condition Index	Variance Proportions				
			(Constant)	LNAuM	Number of executive committees	Z-Score 2011	Coverage ratio 2011 (deviation from 105)
1	2,572	1,000	,02	,01	,02	,00	,05
2	1,088	1,538	,00	,25	,00	,50	,00
3	,900	1,690	,00	,57	,00	,34	,01
4	,377	2,611	,04	,01	,04	,05	,93
5	,063	6,406	,94	,16	,94	,12	,00

a. Dependent Variable: Average remuneration per board member

A second robustness test for the regression analysis is performed by taking a closer look at the distribution of the error term  $e$ . The assumption underlying the linear regression model is that the error term follows a normal distribution. Figure 15 below illustrates the distribution of the error term for regression (1a). Also this check does not raise concerns about the robustness of the regression analysis. Although the distribution of the error term does not perfectly follow the normal distribution, the distribution of the error term is close to normal and there are no observed outliers: all residuals are within 3 standard deviations from the mean. Hence, the robustness of the regression analysis is also confirmed by this test.

**Figure 15: Distribution of the error term for regression (1a)**



*Regression analysis (1b)*

As stated earlier, a second regression analysis will be performed to confirm that the average remuneration per pension fund board member is indeed not dependent on the performance of the pension fund. Regression (1b) uses the performance of the fund with a 1 year lag, thus the z-score and coverage ratio of the year 2010 instead of the year 2011. The output that is generated performing regression (1b) is displayed in figure 16 below.

**Figure 16: Output for regression (1b)**

ANOVA <sup>a</sup>					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	6425669621,466	4	1606417405,367	11,081	,000 <sup>b</sup>
Residual	6668409597,388	46	144965426,030		
Total	13094079218,855	50			

- a. Dependent Variable: Average remuneration per board member
- b. Predictors: (Constant), Coverage ratio 2010 (deviation from 105), LNAuM, Z-Score 2010, Number of executive committees

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,701 <sup>a</sup>	,491	,446	12040,159

a. Predictors: (Constant), Coverage ratio 2010 (deviation from 105), LNAuM, Z-Score 2010, Number of executive committees

**Coefficients**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15407,034	4929,935		3,125	,003***
LNAuM	5735,283	1011,931	,667	5,668	,000***
Number of executive committees	935,865	1431,894	,082	,654	,517
Z-Score 2010	-691,821	1717,469	-,044	-,403	,689
Coverratio 2010 (deviation from 105)	-43,469	246,584	-,021	-,176	,861

Correlations			Collinearity Statistics	
Zero-order	Partial	Part	Tolerance	VIF
,694	,641	,596	,799	1,252
,354	,096	,069	,703	1,423
,060	-,059	-,042	,943	1,061
-,065	-,026	-,019	,818	1,223

Analysing these regression results, the same conclusions can be drawn as from the results of regression (1a). Also with this regression, the F-test is significant, and hence the estimators used in the regression do have predictive power for the average remuneration of pension fund board members. The second table, with the model summary, shows a slightly lower  $R^2$  of 0,491, but still confirming that almost half of the variation in the average remuneration of pension fund board members is explained by the estimators used in the model. The third table (coefficients) then shows that again both the intercept (constant) and the pension fund size (LN\_AuM) are significant at both a 95% and 99% confidence level. The other estimators, the lagged z-score and the lagged coverage ratio, are not significantly different from zero. Hence, these results lead to the confirmation of the rejection of the null hypothesis for hypothesis 1: the test result shows that the average remuneration per pension fund board member is dependent on the size of a pension fund and therefore hypothesis 1 appears to be true. The test results also confirm that the null hypothesis for hypothesis 2 cannot be rejected: the test result also shows no evidence for the average remuneration per pension fund board member to be dependent on the one year lagged performance measures (the z-score and the coverage ratio for the year 2010). Thus, also the second regression analysis finds no evidence for the use of pay-for-performance principles by pension funds for the remuneration of their board

members. In the remainder of this section also the robustness of this second regression will be evaluated, and thereby the robustness of the conclusions drawn from this regression.

*Robustness of regression analysis (1b)*

Also the second regression is checked for multicollinearity and normality of the distribution of the error term. As figure 17 below shows, also for this regression the issue of multicollinearity is not present. The values for the condition index are all far below 15. Thus, there are no signs of multicollinearity that could have a negative impact on the robustness of the regression analysis.

**Figure 17: Collinearity test for regression (1b)**

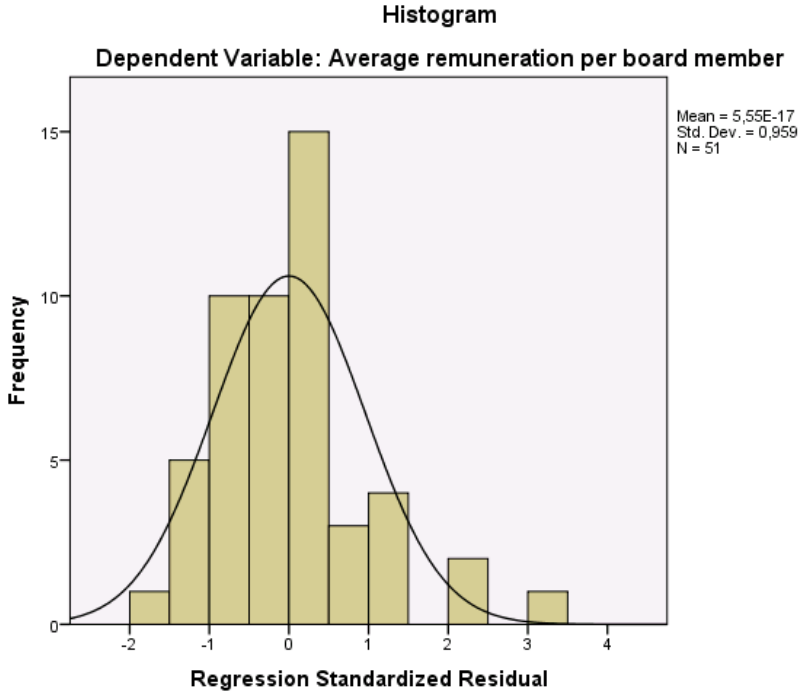
Collinearity Diagnostics <sup>a</sup>							
Dimension	Eigenvalue	Condition Index	Variance Proportions				
			(Constant)	LNAuM	Number of executive committees	Z-Score 2010	Coverage ratio 2010 (deviation from 105)
1	2,307	1,000	,02	,01	,02	,06	,02
2	,972	1,541	,01	,72	,00	,01	,00
3	,956	1,554	,01	,02	,00	,01	,76
4	,707	1,806	,01	,04	,02	,88	,05
5	,058	6,315	,96	,20	,96	,05	,18

a. Dependent Variable: Average remuneration per board member

The distribution of the error term of regression (1b) is also checked for complying to the assumption of normality. Figure 18 on the next page shows the distribution of the error term *e*. Also this error term does not violate the assumption of normality. Although there is a small spike in the middle of the distribution, the rest of the error terms almost perfectly fit the normal distribution. There are no extreme outliers on both sides of the distribution. Hence, both robustness tests confirm the robustness of the regression analysis.



**Figure 18: Distribution of the error term for regression (1b)**



**4.5 Summary**

This chapter described the empirical part of this thesis research. Starting point for this empirical research were the two hypotheses that were derived from the literature in chapter 2: the existence of a causal relationship between the size of a pension fund and the height of the salary of its board members and the existence of a causal relationship between the performance of a pension fund and the height of the salary of its board members. Both hypotheses were derived from a theoretical suitable remuneration policy for pension fund board members, granting a base salary which is dependent on the size of the pension fund (and hence the complexity of the job) and a variable salary which is dependent on the performance of the pension fund. In order to test these hypotheses a dataset of 51 industry-wide pension funds was constructed, gathering data on both size and performance aspects. A linear regression was performed, using the natural logarithm of the amount of Assets under Management (LN\_AuM) of the pension fund and the number of executive committees as explanatory ‘size variables’ and the z-score and coverage ratio of the pension fund as explanatory ‘performance variables’. The dependent variable of the regression was the average remuneration per pension fund board member. The result of this regression analysis was twofold. On the one hand the hypothesis that the salary of a pension fund board member would be dependent on the size of a pension fund was confirmed by the test results. On the other hand the hypothesis that the salary of a pension fund board member would also depend on the performance of the

pension fund could not be confirmed by the data. Hence, no proof was found for performance related pay of pension fund board members.

## 5. Conclusion

The previous chapter captured the empirical part of this thesis research. This chapter will draw a conclusion based on the results of the empirical research. In the first section of this chapter, the results will be compared to the literature and evaluate possible differences. In the second section of this chapter, the limitations of this research will be discussed. This discussion should be taken in mind when trying to interpret the empirical findings. The third section will then conclude this research and evaluate its value, while the fourth and last section of this chapter will formulate recommendations for future research.

### 5.1 Comparison with the literature

Literature suggested that there are two tools for handling the agency problem: governance mechanisms (monitoring and control) and the use of pay incentives. The monitoring approach must prevent the agent from performing actions that are not in line with the interests of the principal and the incentives approach tries to give incentives to the agent for acting in the best interest of the principal. Extremes in optimizing the outcome for the principal, using just governance mechanisms and no incentives or using just the incentives approach and no governance mechanisms, does not seem to be the most effective approach. Therefore, amongst others, Rutherford et al. (2007) and Yang (2008) suggest that an approach is used where the principal is able to monitor the agent up to a certain extent and also creates incentives for the agent so he is stimulated to act in the best interest of the principal. Ambachtsheer (2011) agrees with this view when trying to design a suitable remuneration package for the executive board members of a Canadian pension fund. He develops a package consisting of both a base salary and variable remuneration components. Hence, the hypotheses as derived in the second chapter of this thesis were based on the assumption that Dutch pension funds would also grant their executive board members a salary that has both a fixed and a variable component, with the latter one being dependent on the performance of the pension fund. The empirical research of this thesis, however, did not confirm this assumption. Although it was confirmed that half of the remuneration of pension fund board members in the Netherlands is dependent on the size of the pension fund (measured by the amount of assets under management) and thus confirming that the fixed base salary is dependent on the size of the fund, no proof was found for the existence of performance related remuneration. Although this is a remarkable finding the next section will, before drawing conclusions, provide an enumeration of limitations of this research to be able to evaluate the results in the right way.

## **5.2 Limitations of this research**

The limitations of this research are primarily related to the research approach and the availability of specific data. The research approach for identifying the explanatory variables behind the remuneration of Dutch pension fund board members has advantages, but also disadvantages. Advantages of the approach are the objectivity of the data (because data from annual reports was used) and the reproducibility of the empirical research. The disadvantages that come along with this research approach are that the obtained data is less in-depth than it could have been when the data was obtained from the pension fund boards themselves and the fact that not all performance indicators could be addressed using data from the annual reports of the pension funds that were in the scope of this research. For this reason not all performance areas were covered when testing the remuneration of the pension fund board members for dependency on their performance. Hence it is possible, although chances are little, that pension fund board members do get a reward for outperformance, for the performance in an area that could not be tested in the empirical research of this thesis.

## **5.3 Conclusions and recommendations for pension funds**

Comparing the results of this research with the expectations that one could derive from the literature, and keeping the limitations of this research in mind, it is remarkable that Dutch pension funds appear not to use any performance related component for the remuneration of their executive board members. This observation is contrary to what should be expected from literature. Literature suggests that for optimizing the performance of pension fund boards a combination of monitoring and the use of incentives would be the best approach. This monitoring approach is (in a dominant way) present in the governance model of Dutch pension funds, the prescriptions of the Dutch pension law, the guidelines for pension fund governance and the regulations of the supervisor DNB<sup>34</sup>. However, the absence of pay incentives leads to the conclusion that the remuneration of Dutch pension fund board members, from a theoretic perspective, is not performed in the most effective way. The absence of pay incentives could become even more eminent in the future if the use of governance mechanisms to influence the behaviour of pension fund board members lessens, e.g. by adding professionals to pension fund boards that are independent from the employees and employers (i.e. they do not have a durable relationship with the group they represent). It is therefore recommended that (the participants of) Dutch pension funds will start investigating if a different type of remuneration for their board members, including a performance based fee, could be a more effective way of remunerating pension fund board members.

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<sup>34</sup> As described in chapter 3 of this thesis.

#### **5.4 Recommendations for further research**

The recommendations for further research relate on the one hand to the verification of the conclusion that is drawn in this thesis and on the other hand to the recommendation that was given to Dutch pension funds, as stated in the previous section. For the goal of verification of the conclusion of this research, a different research approach could be used on the same subject: e.g. a qualitative approach interviewing pension fund boards and performing the same tests as used in this research on qualitative data instead of quantitative data. Also it is recommended to perform a follow-up on this research, to try and provide a new standard for the remuneration of pension fund board members, including a variable part which is dependent on the performance of the pension fund. This change in the composition of remuneration packages could attribute to enhancing pension fund performance, according to the academic literature on executive remuneration.

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## Annex 1: Pension funds included in the dataset

The dataset that was used for the empirical research of this thesis contains data on the following 51 Dutch industry-wide pension funds (sorted on size with the pension fund with the highest amount of assets under management on top):

1	Stichting Pensioenfonds ABP
2	Stichting Pensioenfonds Zorg en Welzijn
3	Stichting Pensioenfonds Metaal en Techniek
4	Stichting Bedrijfstakpensioenfonds voor de Bouwnijverheid
5	Stichting Pensioenfonds van de Metalektro (PME)
6	Stichting Bedrijfstakpensioenfonds voor het Beroepsvervoer over de Weg
7	Stichting Bedrijfstakpensioenfonds voor de Detailhandel
8	Stichting Bedrijfspensioenfonds voor de Landbouw
9	Stichting Pensioenfonds voor de Woningcorporaties
10	Stichting Pensioenfonds Werk- en (re)Integratie
11	Stichting Bedrijfstakpensioenfonds voor het Schilders-, Afwerkings- en Glaszetbedrijf
12	Stichting Pensioenfonds Horeca & Catering
13	Stichting Bedrijfspensioenfonds voor de Koopvaardij
14	Stichting Pensioenfonds voor de Architectenbureaus
15	Stichting Bedrijfstakpensioenfonds voor het Schoonmaak- en Glazenwassersbedrijf
16	Stichting Bedrijfstakpensioenfonds voor het Levensmiddelenbedrijf
17	Stichting Pensioenfonds Wonen
18	Stichting De Samenwerking, Pensioenfonds voor het Slagersbedrijf
19	Stichting Bedrijfstakpensioenfonds Mode-, Interieur-, Tapijt- en Textielindustrie
20	Stichting Bedrijfstakpensioenfonds voor Vlees, Vleeswaren, Gemaksvoeding en
21	Stichting Pensioenfonds Medewerkers Apotheken
22	Stichting Bedrijfstakpensioenfonds voor de Houthandel
23	Stichting Bedrijfstakpensioenfonds Waterbouw
24	Stichting Bedrijfspensioenfonds voor Medewerkers in het Notariaat
25	Stichting Bedrijfstakpensioenfonds voor de Particuliere Beveiliging
26	Stichting Bedrijfspensioenfonds voor de Agrarische en Voedselvoorzieningshandel
27	Stichting Bedrijfstakpensioenfonds voor de Groothandel in Levensmiddelen
28	Stichting Bedrijfstakpensioenfonds voor het Kartonage- en Flexibele Verpakkingenbedrijf
29	Stichting Pensioenfonds voor de Tandtechniek
30	Stichting Pensioenfonds voor de Nederlandse Groothandel
31	Stichting Bedrijfstakpensioenfonds voor de Betonproductenindustrie
32	Stichting Pensioenfonds voor Personeelsdiensten
33	Stichting Bedrijfstakpensioenfonds voor de Drankindustrie
34	Stichting Bedrijfspensioenfonds voor de Rijn- en Binnenvaart
35	Stichting Bedrijfstakpensioenfonds voor de Handel in Bouwmaterialen
36	Stichting Bedrijfstakpensioenfonds voor de Groothandel in Vlakglas, de Groothandel in Verf, het Glasbewerkings- en het
37	Stichting Bedrijfstakpensioenfonds voor het Kappersbedrijf
38	Stichting Bedrijfstakpensioenfonds voor de Banden- en Wielenbranche
39	Stichting Bedrijfstakpensioenfonds voor de Houtverwerkende Industrie
40	Stichting Pensioenfonds Recreatie (SPR)

- 41 Stichting Bedrijfstakpensioenfondsvoor de Bitumineuze en Kunststof Dakbedekkingsbedrijven
- 42 Stichting Bedrijfstakpensioenfondsvoor de Schoen-, Leder- en Lederwarenindustrie
- 43 Stichting Bedrijfstakpensioenfondsvoor de Groenten- en Fruitverwerkende Industrie
- 44 Stichting Bedrijfstakpensioenfondsvoor de Verf - en Drukinktindustrie
- 45 Vereniging Nederlands Pensioenfondsvoor de Sigarenindustrie en Aanverwante Bedrijven
- 46 Stichting Bedrijfstakpensioenfondsvoor de Reisbranche
- 47 Stichting Bedrijfstakpensioenfondsvoor de Betonmortelindustrie
- 48 Stichting Bedrijfstakpensioenfondsvoor de Schoenmakerij
- 49 Stichting Molenaarspensioenfondsvoor de Groothandel in Textielgoederen en Aanverwante Artikelen
- 50 Stichting Bedrijfstakpensioenfondsvoor de Groothandel in Textielgoederen en Aanverwante Artikelen
- 51 Stichting Bedrijfspensioenfondsvoor de Zeevisserij

## Annex 2: Calculation of the z-score

This annex will explain how the z-score of Dutch industry-wide pension funds is being calculated.

### Calculation of the z-score

The z-score measures the performance of the investment portfolio of a pension fund in relation to the performance of an ex-ante determined benchmark portfolio. The formula for the calculation of the z-score is as follows:

$$z_j = \frac{(R_j^f - k_j^f) - (R_j^b - k_j^b)}{E_j}$$

In this formula  $R^f$  is the realised return on the investment portfolio of the pension fund and  $R^b$  the realised return on the benchmark portfolio, both as a percentage of the total portfolio size at the beginning of the year. The returns are netted by extracting the investment costs:  $k^f$  are the investment costs as a percentage of the average portfolio size (calculated by averaging the total portfolio size at the beginning of the year and the total portfolio size at the end of the year). The investment costs of the benchmark portfolio  $k^b$  are estimated using a mathematical model prescribed by law, as well as the volatility of the portfolio  $E_j$ .