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Corporate Governance and Firm Performance
For Housing Corporations in the Netherlands

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PREFACE AND ACKNOWLEDGEMENTS

In front of you lies the thesis for completing my master Financial Economics at the Erasmus University Rotterdam. This thesis looks at the relation between the corporate governance and performance of housing corporations in the Netherlands. This research can be used to determine future policy on the provision of financial services to semi-public institutions.

I have written this thesis with pleasure, although it was hard to combine it with my first job as a finance trainee. I am very happy to present you this paper.

My thanks go to my supervisor dr. Lemmen, who pushed me in the right direction when necessary, and was always available to provide answers to my questions and comments to submitted texts. Finally I would like to thank my parents for their unconditional support and love.

Ivo van Hest

Rotterdam, October 2016

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ABSTRACT

I construct a broad corporate governance measure, HCG-index, based on a self-created dataset. The HCG-index is made of 41 governance factors that cover the six corporate governance categories of the Dutch Governance Code for Housing Corporations 2015. I look at the relation between the HCG-index and the total, financial and social performance of 182 housing corporations, and find that better governed firms have higher total performances, higher net profits and lower operating expenses. However they also show lower social performances and operating revenues. I figure that the categories ‘Qualifications Supervisory Board’, ‘Approachability and Accountability of the Board of Directors and the Supervisory Board’ and ‘Qualifications Directors’, underlying the HCG-index, are most highly associated with positive performance of housing corporations. This shows it might be useful to enforce governance regulation for other semi-public institutions, like hospitals and universities.

Keywords: Corporate Governance, Firm Performance, Housing Corporations, Corporate Regulation, HCG-index, JEL Code G38

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1 Introduction

The past financial crisis has caused a lot of financial distress throughout the global economy. Banks, companies and public institutions all suffered from the economic downfall. This thesis focuses on semi-public institutions, in particular housing corporations. New corporate governance rules to minimize the risk of default of housing corporations were introduced in the Netherlands in June 2015. This made me wonder if corporate governance and the performance of housing corporations are related. Therefore, the research question that underlies this thesis is:

‘Is the corporate governance of housing corporations in the Netherlands related to their performance?’

In the current society we are becoming increasingly dependent on the services of financial institutions. In the relation between the service provider and client there is almost always an inequality of parties. In general, the financial institution has more knowledge, experience and expertise than his client. When this inequality is undesirable, the law should foresee in a disparity compensation. Pijls (2010) argues that in the Netherlands both public law and the special duty of care of banks help to balance the inequality of parties.

The group of financial institutions, that perhaps needs to comply with the most rules, are the banks. Banks have a societal function, hence must adhere to many rules, obligations and requirements before they are authorized to provide financial services. Despite these regulations, there are many cases where financial products have caused major damage. Notable examples include: the collapse of the US investment bank Lehman Brothers, the bankruptcy of DSB Bank NV, the LIBOR scandal, the profiteering policies and the share leasing affair. All these events have contributed in varying degrees to the credit crisis.

A number of semi-public institutions got into distress due to bad financial management. Training Centre Zadkine stood on the edge of bankruptcy because they had purchased large amounts of real estate between 2004 and 2007;¹ ROC Leiden came in financial distress due to large investments and complex financial structures for the construction of two buildings.² In addition Bush (2013) notices that the Leiden University and VU Amsterdam created financial problems by entering into interest rate swaps to hedge their future investments. In my opinion, the Vestia affair is the most conspicuous example of

¹ S. van der Laan, ‘Onderwijsinstelling Zadkine kampt met miljoenentekort’, *Elsevier*, 19 okt 2012, Link: www.elsevier.nl/Nederland/nieuws/2012/10/Onderwijsinstelling-Zadkine-kampt-met-miljoenentekort-ELSEVIER352340W/.

² J. Vasterman & P. van den Dool, ‘ROC Leiden gered: Kamer steunt stopzetten financiële steun niet’, *NRC* 23 juni 2015, Link: www.nrc.nl/nieuws/2015/06/23/kamer-stemt-tegen-faillissement-roc-leiden-instelling-voorlopig-gered.

bad financial service to a semi-public institution. The housing corporation Vestia speculated on the interest rates by entering into interest rate swap contracts. When the rates fell sharply, Vestia was in danger of going bankrupt and had to buy off its derivatives from the banks for the amount of 2.1 billion euros. This Dutch scandal is mentioned together with the losses of Barings Bank and Société Generale and is considered one of the biggest financial scandals in the world.³

Given the fact that semi-public institutions represent a societal interest, the aforementioned missteps influence our society negatively. On the one hand banks, as financial service providers, have a special duty of care to protect its clients against their own ignorance.⁴ In the master thesis for my law studies I looked at this special duty of care with respect to semi-public institutions. Part of my recommendation was to create a stricter special duty of care for banks when providing financial services to semi-public institutions. On the other hand, one might wonder if the size of the financial catastrophes of semi-public institutions would have been smaller if a proper corporate governance would have been in place. Therefore, the subject of this thesis is the relation between the corporate governance and the performance on housing corporations.

In January 2018 new European legislation has to be implemented into national law.⁵ This regulation contains stricter corporate governance rules for investment firms. These rules include, among other things, stricter requirements for the board of directors. In the Netherlands the Housing Act 2015 and Governance Code for housing corporations have implemented similar requirements for the Board of Directors and Supervisory Board of housing corporations. It is of interest to study if these stricter regulations are correlated with the performance of housing corporations. In case I'll find a significant positive relationship this might indicate that it is a good idea to implement stricter governance rules for other semi-public institutions as well. When there is a negative or non-significant correlation this emphasizes the importance of the special duty of care of banks with regard to semi-public institutions. However, it is very difficult to derive a causal effect in this type of study. I will have to be careful in my conclusions. The results of this thesis can be used to determine the government's policy regarding financial service provision to semi-public institutions.

For the definition of 'semi-public institutions' this thesis joins the 'policy framework derivatives'⁶ and the Dutch Act 'Wet normering bezoldiging topfunctionarissen publieke en semipublieke sector' (hereafter: WNT). The most important institutions, that are covered by this definition, are: housing

³ W. Heck, 'Vestia-affaire behoort tot grootste schandalen wereldwijd', *NRC* 23 juni 2014, Link: www.nrc.nl/next/2014/06/23/vestia-affaire-behoort-tot-grootste-financiele-sc-1393183.

⁴ HR 23 mei 1997, ECLI:NL:HR:1997:AG7238, *NJ* 1998/192 (*Rabobank/Everaars*); HR 11 juli 2003, ECLI:NL:HR:2003:AF7419, r.o. 3.6.4, *NJ* 2005/103 (*Van Zuylen/Rabobank*).

⁵ MiFID II and MiFIR.

⁶ Beleidskader Derivatven, 26 september 2013.

corporations, hospitals and educational institutions. Because performance measures are different for each of these institutions, this thesis will be restricted to looking at the effect of corporate governance on the performance of housing corporations. The reason for choosing housing corporations is twofold. Firstly, this thesis is inspired by the Vestia-affaire, which is the financial catastrophe of a housing corporation. Secondly, there are currently more than 375⁷ housing corporations in the Netherlands. This makes statistical analysis possible.

I will use the provisions of the Dutch governance code for housing corporations to proxy for 'good corporate governance'. With these provisions an index which I call the Housing Corporate Governance index (hereafter: HCG-index) is constructed. The HCG-index indicates the level of corporate governance present at each individual housing corporation on 31 December 2014. The necessary information is collected from annual reports, articles of association, various in-house bylaws and websites of the housing corporations. Next to the governance index, I need to assess a performance measure. For this purpose I use the Aedes benchmark . This benchmark includes not only financial results, but also the social performance of housing corporations. By performing several cross section analyses I determine if there exists a significant relation between the corporate governance and the performance of housing corporations.

1.1 Findings, Contribution and Implications

This research finds that better governed housing corporations have relatively better total performance and lower operating expenses than lesser governed firms. However the operating revenues and social performances are negatively related to proper governance. This is the first research to examine the association between a semi-public institution's performance and its governance. I created my own dataset using publicly available information and created the HCG-index, which can, objectively, be viewed as a governance indicator for housing corporations in the Netherlands. The results from this study show that corporate governance isn't just important for commercial companies, but might also add value to semi-public institutions. Policy makers can take the results from this thesis in their considerations to decide whether or not to make governance codes, like the one for housing corporations, for other semi-public institutions as well.

⁷ Link: www.cfv.nl/nieuws/nieuwsbericht/Resultaten_financiele_toezichtbeoordelingen_2014.

1.2 Structure

Chapter 2 discusses the theoretical background of the research problem and introduces the hypothesis. Chapter 3 covers the research design. Chapter 4 shows the empirical results and analysis. Finally, chapter 5 draws a conclusion.

2 Theoretical Background

This thesis researches the theory that the corporate governance of housing corporations is positively related to firm performance. To provide evidence for this theory I must test if the HCG-index is correlated with the Aedes-benchmark. Research on commercially driven firms shows various results of what to expect. Some papers show a positive relation between corporate governance and firm performance. Other research indicates that corporate governance enhanced by bylaws is negatively correlated to stock values. This thesis is the first of its kind to study the relation between firm performance and corporate governance of Dutch housing corporations. Therefore, the results can differ from previous research. This might be due to the fact that the governance and some of the performance indicators of housing corporations are different from those of commercial companies.

This chapter discusses the corporate governance of housing corporations in section 2.2. Section 2.3 reviews related literature. Section 2.4 elaborates on the construction of the HCG-index. Section 2.4 explains the reasoning behind the use of the Aedes-index indicators as performance measures. Finally, section 2.5 shows the hypothesis development.

2.1 Corporate Governance of Housing Corporations

The basis for research on corporate governance is the separation of ownership and control. Conflicts of interest and agency problems reduce the value of companies. Hence, entrepreneurs, shareholders and managers are looking for ways to minimize this loss of value. Corporate governance provides the suppliers of capital certainty to get a return on their investment. Denis and McConnell (2003) argue it can be divided in a set of institutional and market-based mechanisms. The most interesting internal governance mechanisms are the board of directors and the equity ownership structure of the firm. Important external mechanisms are the takeover market and the legal system.

Housing corporations are semi-public institutions. Their governance differs a lot from the commercially driven firms. Semi-public institutions don't have profit-maximization as a goal. They don't have to deal with shareholders' interests and there is no takeover threat. In the Netherlands housing corporations have a two-tier board and often they have CEO-chairman duality. Benz and Frey (2007) show what corporate governance can learn from the four cornerstones of public governance, being: 1) fixed compensation for managers, 2) the division of power, 3) rules of succession, and 4) institutionalized competition in core areas of the firm. In line with this, the Dutch governance code for housing corporations focusses on how the Board of Directors and the Supervisory Board function and on the manner in which they are accountable for their results. This includes rules that restrict terms of office

and re-elections and rules that set qualitative requirements for the board of directors and the supervisory board.⁸ This study will construct a HCG-index based on the provisions of the Dutch governance code for housing corporations 2015.

2.2 Literature Review

As discussed in chapter 1 it is of interest to research the relation between the performance of housing corporations and their corporate governance. The history of corporate governance goes back to the 16th and 17th century. With the establishment of companies like the Levant Company, the East India Company and the Hudson's Bay Company, corporate governance has been in practice. In the 70s the federal Securities and Exchange Commission (hereafter: S.E.C.) introduced the term 'corporate governance' in their official journal the 'Federal Register'. At the end of the 90s a lot of literature had been written and regulation was made with respect to corporate governance, describes Cheffins (2012). In the 1980s several papers conclude that more restrictive corporate governance results in a lower stock price. The element that might explain this result is that the accountability of managers to its shareholders is decreased when stricter rules are implemented. This is expected to influence the long-term financial performance of the company negatively. In spite of these studies, little evidence had been found on the actual performance effect of corporate governance provisions until the research of Karpoff, Marr Jr. and Danielson.

Karpoff, Marr Jr. and Danielson (1994) study the relation between corporate governance structures and two measures of performance: return on assets (hereafter: ROA) and market-book value ratio (M/B). They use data indicating whether or not a firm has each of 20 different governance provisions adopted and the year each provision was adopted. Among other things, they find a positive relation between companies with the lowest number of restrictive provisions and their industry-adjusted ROAs and M/Bs. A couple years later Gompers, Ishii and Metrick (2001) use a governance index to examine the relation between the corporate governance and the firm performance. They use the incidence of 24 different provisions to build a 'Governance Index', which they name the G-index. The provisions they use to construct this G-index are related to shareholder rights. Their paper shows that companies with weaker shareholder rights perform significantly worse and are involved in greater capital expenditure and higher takeover activity.

Brown and Caylor (2004) introduced a broader measure of corporate governance and named it the Gov-score. The Gov-score is composed of 51 factors which can be divided in eight governance categories. The categories are: audit, board of directors, charter/bylaws, director education, executive and director

⁸ Governancecode Woningcorporaties 2015, p. 4.

compensation, ownership, progressive practices and state of incorporation. Brown and Caylor link the gov-score to the operating performance, valuation, and shareholder payout. They find that better-governed firms are relatively more profitable, more valuable, and pay out more cash to their shareholders. They show that good governance, as measured using executive and director compensation, is most highly associated with good firm performance. On the other hand, their results indicate that good governance as measured using charter/bylaws is highly associated with bad firm performance. They split out the 51 factors underlying their Gov-Score to see which ones are significantly associated with firm performance. They find that some factors representing good governance which have almost never been examined before, like ‘annual governance committee meetings’ and ‘having an independence of nominating committee’, are associated with good performance. In contrast, some factors representing good governance that have often been examined before, e.g., consulting fees less than audit fees paid to auditors, absence of a staggered board, are associated with bad performance. They also note that their gov-score is better connected to firm performance than the G-index created by Gompers, Ishii and Metrick (2001).

Bebchuk et al. (2008) put forward the Entrenchment-index (hereafter: BCF E-index) based on six provisions: 1) staggered boards, 2) limits to shareholder, 3) bylaw amendments, 4) poison pills, 5) golden parachutes, and 6) supermajority requirements for mergers and charter amendments. They find that increases of their index are related to reductions in firm value and abnormal negative returns.

2.3 HCG-index

I will build a Housing Corporation Governance index which I name the ‘HCG-index’. This index is constructed according to the method used by Brown and Caylor (2004) and Gompers, Ishii and Metrick (2001). The construction of the index is as follows: for every housing corporation, I add one point for each governance factor that is applied on 31 December 2014. This weighting scheme has the advantage that it is reproducible and transparent. It does not attempt to indicate the real relative impact of different provisions.

The governance factors I use for the HCG-index differ a lot from the ones used in other studies. This is due to the fact that the governance of housing corporations is very different from that of commercial corporations. There are a couple of reasons for this. First of all, the main goal of housing corporations is to provide cheap housing for low income families. In contrast to commercially driven firms, they do not have the goal to maximize profits, sales or market share. Secondly, housing corporations don’t have any shares and therefore don’t have to worry about shareholders’ power nor about the threat of (hostile) takeovers. A big part of the provisions and factors used in other papers are related to these topics.

Another difference is that the salary of the directors of housing corporations are legally restricted. Wage is not related to performance, as, in most cases, directors don't earn a variable income and don't get bonuses.

This research is the first to look at the relation between the corporate governance and performance of housing corporations. The factors I use in constructing the HCG-index are based on the Dutch Governance Code for Housing Corporations 2015. The Code provides guidance on the manner in which the Directors and Supervisory Board operate and how they account for their results.⁹ For this reason I consider the provisions of this Governance Code as objective indicators for good governance. These provisions are divided in six governance categories: 1) Values that match the Social Mission, 2) Dialogue with Stakeholders, 3) Approachability and Accountability of the Board of Directors and the Supervisory Board, 4) Risk Control, 5) Qualifications Directors, and 6) Qualifications Supervisory Board Members.

Not every provision is one-on-one useable as a factor in the HCG-index. For several provisions it isn't possible to find sufficient or objective information about its implementation in the individual housing corporations. If this is the case I don't use the concerning provision as a governance factor in the HCG-index. Some provisions are partly overlapping and are therefore taken together as one factor. Other provisions contain multiple elements and are split into two governance factors in the index or are only partly taken into account in one factor. In addition to the Dutch Governance code I include the factor that the housing corporation is not under surveillance of the authority housing corporations. This gives an indication that the housing corporation doesn't have its finances in order and thus lacks sufficient risk control. The above standing results in a total of 41 factors, which together form the HCG-index. Table 1 (page 13-15) gives an overview of all factors.

2.4 Performance Measures of Housing Corporations

This research will use twelve different performance measures covered by three categories: 1) Financial Performance, 2) Social Performance, and 3) Total Performance (which includes both financial and social performance). Unlike commercial companies the performance of housing corporations cannot be measured solely by their financial results. As profit-maximization is not the main goal of housing corporations I will have to objectify the use of a different performance measures. Gruis, De Kam & Deuten (2008) describe different possible performance measures for the Dutch social rental sector. The performance of housing corporations exists of two components: financial and social performance. The total performance can be assessed by a combination of these performances. The social performance can

⁹ Governancecode Wooncorporaties 2015, p. 4.

be measured by benchmarking argues Gruis (2008). The Aedes-benchmark contains measures for both the financial and the social accomplishments as well as a combined measure. This makes it possible to compare the performances of all housing corporations. For this reason eight of the twelve performance measures are copied from the Aedes-benchmark.

The Aedes-benchmark is created by Aedes¹⁰ in 2014 and is being improved every year.¹¹ In my opinion the Aedes reports contain the most complete (overview of) performance measures for housing corporations in the Netherlands available at this moment. The performance measures published in the Aedes-benchmark reports are: Integral Benchmark Position (hereafter: Total Score), Relative Position Operating Expenses (hereafter: Financial Management), the Harmonized Amendable Net Operating Expenses per Weighted Rental Unit' (hereafter: Operating Expenses), Relative Tenants' Judgment (hereafter: Quality), and Total Tenants' Judgment (hereafter: Tenants' Judgment).

Tenants' Judgment is the weighted grade tenants give to the services provided by the housing corporation. This score is composed of sub scores given to three processes which are given different weights. The processes and their given weights are: the process for new tenants of moving in their house, 25%, the process for leaving tenants of moving out their house, 20%, and the process of carrying out repairs for tenants with a repair request, 55%. By adding up these sub scores multiplied by their weights the performance measure Tenants' Judgment is obtained.¹²

Operating Expenses per weighted rental unit are difficult to compare between housing corporations. This is due to the fact that some costs are registered differently by housing corporations. Other costs like restructuring aid, home owner tax, property tax and other taxes and charges cannot, or hardly, be influenced by the corporations. To create a financial performance measure that makes comparison between housing corporations possible Aedes created a special Operating Expenses variable. This variable is derived by taking the operating expenses per rental unit and by excluding both costs that cannot be influenced and 15 costs that are registered differently by housing corporations. In this thesis this variable is called 'Operating Expenses'.

Financial Management and Quality are the same performance measures as resp. Operating Expenses and Tenants' Judgment, but instead of the absolute grade they are scored A, B or C. A being the best and C the worst possible relative score. To be able to quantify and compare these results I apply the following scoring mechanism: A = 3, B = 2 and C = 1. This means that the highest score has the best

¹⁰ Aedes is the national organisation promoting the interests of practically every social housing organisation in the Netherlands, on all possible fronts.

¹¹ www.aedes.nl/content/dossiers/benchmarken.xml#Cijfers.

¹² Rapportage Aedes benchmark 2014, p. 22.

performance. The Total Score is composed of the combination of the Financial Management score and the Quality score. Therefore the results of Total Score range from 2 to 6 (CC to AA). This use is consistent with the Aedes report explaining the Aedes-benchmark.

The scores from the Aedes-benchmark 2015 considering operating expenses relate to reporting year 2014. However the tenants' judgments of the Aedes-benchmark 2015 reflect the opinion of the tenants of roughly the first six months of 2015. Likewise, the tenants' judgments of the 2014-benchmark show the opinion of the renters for the first half year of 2014.¹³ This means that the Total Score 2015 includes the financial results of the reporting year 2014 and the tenants' opinion of 2015. To overcome this discrepancy, I created the 'Combined Score' by adding up the Financial Management score of Aedes-benchmark 2015 and the Quality score of Aedes-benchmark 2014. This score reflects only information regarding the reporting year 2014. However, it is possible to argue that certain operating expenses (and related organizational processes) have a delaying effect on the tenants' judgment. In that context, it is valid to use the tenants' judgment scores of the Aedes-benchmark 2015 (based on the first half of year 2015). For this reason I include all performance measures which for its composition (partly) includes the tenants' judgment of Aedes-benchmark 2014 and 2015.

The performance measures used in this research that are derived from the Aedes-benchmark are: Total Score, Combined Score, Financial Management, Operating Expenses, Quality 2015, Quality 2014, Tenants' Judgment 2015 and Tenants' Judgment 2014. Four additional performance measures are Return on Equity (hereafter: ROE) and Return on Assets (hereafter: ROA), Operating Revenues and Net Profit. ROE and ROA are also used in related researches e.g. Brown and Caylor (2004), Karpoff, Marr Jr. and Danielson (1994) and Bhagat and Bolton (2008). Appendix A (page 40) describes how these performance measures are calculated.

2.5 Hypothesis Development

Previous research shows different outcomes in the relation between corporate governance and firm performance. Some studies demonstrate a significant positive correlation. Others give indications of a negative connection between the two variables. However, none of these studies include the social firm performance. The Dutch governance code for housing corporations is introduced to minimize the possibility of financial catastrophes and enhance firm performance. I consider these governance rules as indications for good corporate governance. Consequently, the main hypothesis of this research is:

¹³ I had e-mail contact regarding this issue with mr. S. Koomen, the project manager of the Aedes-benchmark.

Hypothesis I

Good corporate governance is positively correlated with the performance of housing corporations.

Part of the performance of housing corporations is determined by their financial results. Thence it is of interest to see if there is a significant relation between financial performance measures and the HCG-index. Housing corporations don't have the goal to maximize profits. However, the financial performance can be measured by looking at the operating expenses per rental unit. I foresee these costs to be lower for better governed firms. I expect operating revenues to have no significant association with the governance as a part of the profit is used to reinvest in houses and part is used to serve as restructuring aid for other housing corporations that are in financial distress. As a result I expect Net Profit to be positively related with the HCG-index. The second hypothesis is:

Hypothesis II

There is a positive relation between good corporate governance and the financial performance of housing corporations.

The social impact of housing corporations is the other part of the total firm performance. To proxy for the social impact I choose to use the tenants' judgment from the Aedes-benchmark. I expect that better governed housing corporations are better able to provide its tenants with a smooth service. In consequence of this expectation the third hypothesis is:

Hypothesis III

The social impact of housing corporations is positively related to good corporate governance.

3 Research Design

3.1 Data and Methodology

In this chapter the sample selection will be discussed in section 3.1.1. Hereafter the Methodology is covered in section 3.1.2.

3.1.1 Sample Selection

To measure the strength of a firm's governance I create a summary metric, the HCG-index. This index is composed for 182 individual housing corporations, for the date 31 December 2014, using data from annual reports, articles of association, charter/bylaws and the websites of the housing corporations. To collect these documents, I use the company.info database. I score 41 governance factors either 1 or 0. This depends on whether or not the firm's governance is given shape in a way that leads to the conclusion that it complies with the governance factor. The 41 binary variables are summed to create the HCG-index. Logically, this index can range from 0 to 41. However, in my sample the index ranges from 20 to 35. It has a mean value of 28.55 and a standard deviation of 2.49.

Data on firm-specific performance for the fiscal year end 2014 are obtained. I winsorize the outliers according to the outlier labelling rule (Hoaglin and Iglewicz 1987). As discussed in section 2.4 I consider twelve performance measures spread across three categories: Total Performance, Financial Performance, and Social Performance.

Table 1 shows, for all 41 governance factors, the percentage of sample housing corporations that complies with the specific factor. I present the information for all six governance categories of the Dutch Governance Code for Housing Corporations 2015. The results are listed in decreasing order of the percentage of housing corporations that comply with the governance factor. Below, an example of a factor is given for each governance category:

1. *Social Responsibility*: The annual report reflects the core values of the housing corporation.
2. *Dialogue with Stakeholders*: The board consults with the active tenants' associations in its housing region.
3. *Approachability and accountability of Directors and Supervisory Board*: The annual report reports on the comprehensive social, operational and financial performance of the housing corporation.
4. *Risk Control*: The risks associated with the housing activities are stated in the annual report.

5. *Qualifications Directors*: This year the Supervisory Board assessed the performance of the director(s).
6. *Qualifications Supervisory Board*: The remuneration of Board falls within the existing legal frameworks and is listed in the Annual Report.

Four governance factors get a 100% score. Either the directors or the members of the Supervisory Board of each individual housing corporation give their view on the management and supervision of the corporation in the Annual Report. Every sample firm maintains contact with its stakeholders in one way or another and all Annual Reports present the comprehensive social, operational and financial performance of the corporation. All reported conflicts of interest with members of the Supervisory Board have been taken care of appropriately and with integrity or no conflict has been reported.

Two factors are not met by any of the housing corporations. This regards the suitability test for both the Board of directors and the Supervisory board. The housing corporation is supposed to ask the minister for its view on the matter. This has not been done for both tests by any of the corporations.

Table 1: Governance Factors Percentages

This table shows the 41 governance factors used for the HCG-index in column 1. The factors are stated underneath their corresponding category. In column 2 the percentage of housing corporations that comply with the specific factor is given.

Minimum Governance Code 2015	Percentage of firms that comply with the Governance Code Rule
Social Responsibility	
Management Board or Supervisory Board give their views on management and supervision in the Annual report.	100,00%
There is an internal code of conduct or code of integrity and a whistle-blower policy.	94,51%
The annual report contains a summary of the complaints received.	44,51%
The annual report reflects the core values of the housing corporation.	43,41%
The achieved PE points of Directors and Supervisory Board are listed in the annual report.	3,85%
Dialogue with Stakeholders	
The housing corporation maintains contact with its stakeholders.	100,00%
The board consults with the active tenants' associations in its housing region.	98,90%
The Board deliberates and makes performance agreements with the municipality.	93,96%
Approachability and accountability of Directors and Supervisory Board	
The annual report reports on the comprehensive social, operational and financial performance of the housing corporation.	100,00%

The housing corporation has a strategic business plan.	85,16%
The housing has examined its social performance at least once in the past four years through an inspection agency that is accredited by the SVWN.	85,16%
Risk Management	
The auditor hasn't issued an adverse opinion.	99,45%
The corporation does not receive any restructuring aid.	98,90%
The Board has established a treasury statute.	97,25%
The housing corporation is not under surveillance.	94,51%
The risks associated with the housing activities are stated in the annual report.	87,91%
The non-audit services by the auditor constitute less than 50% of the total audit fees.	75,27%
The Board has established an investment statute. (investeringsstatuut)	59,34%
The functioning of the external auditor is thoroughly reviewed at least once every four years.	39,56%
The current external auditor is appointed for a period of maximum eight years.	35,71%
Management and Supervisory Board pay attention to soft controls (in the annual report).	5,49%
The Board has established an investment statute. (beleggingsstatuut)	3,30%
Qualifications Directors	
There have been reported no conflicts of interest by/concerning the board.	99,45%
The Supervisory Board sets the remuneration of the Board members in accordance with the applicable legal frameworks. This remuneration is published in the annual report.	96,15%
This year the Supervisory Board assessed the performance of the director(s).	92,86%
The Supervisory Board is responsible for the recruitment and selection of board members and shall publish a profile.	37,36%
The directors are appointed for a maximum of four years and each reappointed for a maximum of four years.	23,08%
The board is tested for its suitability, which the minister has asked his views.	0,00%
Qualifications Supervisory Board	
There are no reported conflicts of interest by the Supervisory Board if they act appropriately and with integrity in the event of a conflict of interest.	100,00%
The remuneration of Board falls within the existing legal frameworks and is listed in the Annual Report.	97,25%
The Supervisory Board shall each commissioner whether he / she can monitor independently and reports that in the annual report of the Supervisory Board.	97,25%
The Supervisory Board has drawn up a profile in which demands are made on the composition of the Supervisory Board on a balanced composite SB.	96,70%

The Supervisory Board has drawn up regulations in which he records his method and publish on the website of the corporation.	96,70%
The Supervisory Board makes an annual activity report published in the annual report.	96,15%
The annual report shows when the individual members of the Supervisory Board resign that not everyone should resign in the same or subsequent years so that continuity is assured.	92,86%
Active tenants' associations have the right to make a binding nomination for two or more commissioners, if the Supervisory Board consists of five or more members, or one binding recommendation if the board consists of three or four members. If no tenant organization founded this nomination right to the tenants of the residential units.	89,01%
of the Supervisory Board members are appointed for a maximum period of four years and reappointed more than once for a maximum period of four years.	76,37%
The Supervisory Board said this year its own performance and has done at least once in the past two years under independent external guidance.	48,90%
The audit committee and the remuneration committee is not chaired by the Chairman of the Supervisory Board.	46,15%
The annual report mentions that all commissioners follow the induction appointment covering the relevant aspects are addressed the function.	23,08%
The Supervisory Board has been tested for its suitability, which the minister has asked his views.	0,00%

The Aedes-benchmark 2015 and Aedes-benchmark 2014 are retrieved from the website of Aedes.¹⁴ I obtained both the data on firm performance and governance for 182 housing corporations. In creating the HCG-index I have scanned Annual Reports,¹⁵ Articles of Association, Rules for the Supervisory Board, Rules for the Board of Directors, visitation reports and business plans which ultimately came into effect 31 December 2014. In the case reports of a later date are the only available source of information, I assume that no information is available on the subject and conclude the particular governance point has not been met.

I collected the annual reports and financial statements from the company.info database. This data was partly incomplete, thus I had to make some calculations based on figures derived from the annual reports. The Quick Ratio is computed by subtracting the stock and work in progress from the current assets and divide this number by the current liabilities. The Debt ratio is calculated by dividing the long term debt by the total assets.

¹⁴ www.aedes.nl.

¹⁵ Information is derived from Annual Reports 2009-2014.

3.1.2 Methodology

I perform three types of cross-sectional analyses. I start off by correlating the HCG-index with each performance measure using the Pearson and Spearman tests. Then I arrange the HCG-index from highest to lowest score (*i.e. from best to worst governance*), and examine if firm performance differs significantly between the top and bottom scores. To give an example, when I explore the Total Score, I compare the performance for corporations with the top 10, 20 and 30% HCG-index score with that in, resp., the bottom 10, 20 and 30%. Then I use an independent samples t-test to determine if the mean values of total firm performance in the top and bottom of the HCG-index differ significantly. After this, I use the same method to look at the differences in means of the HCG-index for the top 10, 20 and 30% of each of the performance measures.

I continue by examining which categories and factors are related with good or bad performance by correlating the performance measures with the six governance categories and 41 governance factors. In accordance with Brown & Caylor (2004), a category is considered to be associated with good or bad performance if it is respectively positive or negative¹⁶ and significant at the 10% level or better using a one-tailed test.¹⁷ I consider a category or factor to be associated with good/bad (expected/unexpected) performance if it is positive/negative¹⁸ and significant at the 10% level or better using a one-tailed test. Furthermore, I will perform an OLS regression where I intend look at the influence of corporate governance on firm performance while controlling for firm size and default risk. It is not possible to construct an Altman Z-score to control for default risk. This is the reason I include the quick ratio and debt ratio as control variables.

Note that no causality claims can be determined from these tests. As other researches (e.g., Larcker et al. 2004) confirm there is no (easy producible) instrumental variable that can be used to perform a two-staged least squares analysis. This means that no definitive conclusions can be made regarding the causality of the relation between performance and corporate governance.

3.1.2.1 Control Variables

To my expectation large housing corporations are in general better governed than small ones. They have greater interests and therefore need a more professional approach to conduct business smoothly. On top of that, it is likely that large corporations have members of the Board of Directors and Supervisory Board

¹⁶ For Operating Expenses a negative correlation is associated with good performance, as lower average costs are better.

¹⁷ L.D. Brown & M.L. Caylor, 'Corporate Governance and Firm Performance', December 2004, p. 10-13.

¹⁸ Vice versa for Operating Expenses.

which are highly competent and have a lot of experience. The amount of time put into composing the annual reports might be higher as well and, consequently, they give a more complete picture of the company. On the other hand, I expect large housing corporations to have a worse firm performance than small firms. Smaller housing corporations are more flexible and can deal with individual tenant's problems easier. They have a better overview of the activities, fewer employees and less interests that need to be safeguarded. These possible differences make me control for firm size.

When housing corporations are in financial distress, they cannot perform as they should. They need to focus on avoiding bankruptcy. To achieve that purpose they must cut costs, might need to lay off employees and are possibly forced to sell part of their properties. They are less focussed on growth opportunities and customer satisfaction is of secondary importance at that moment. Therefore, it is important to control for default risk.

4 Analysis

In section 4.1 I will discuss the correlations between the HCG-index and the performance of housing corporations. Next, section 4.2 shows which governance categories and factors are most relevant. Finally, section 4.3 provides the results of the multivariate analysis.

4.1 Correlations HCG-index and Housing Corporation Performance

Table 2 shows the correlations between HCG-index and housing corporation performance. In the Pearson tests eight of the twelve performance measures have their expected signs. The Spearman tests have seven performance indicators like that. Financial Management and Operating Expenses are significantly Pearson and Spearman correlated in their expected directions. Combined Score is only Pearson significant with its expected sign. Tenants' Judgment 2015 is only Pearson significant in the 'wrong' direction. The positive Pearson correlations are spread out from a low of .011 (Quality 2014) to a high of .124 (Financial Management). The negative correlations range from -.005 (Quality 2015) to -.132 (Operating Expenses¹⁹). The positive Spearman correlations range from a low of .066 (Total Score 2015) to a high of .119 (Financial Management). The negative correlations vary from -.003 (Quality 2014) to -.121 (Operating Expenses).

I demonstrate that the HCG-index is correlated in the expected direction with the Combined Score, Financial Management, and Operating Expenses. Remarkable is that the tenants' judgement of the year 2015 is significant negatively Spearman correlated with the HCG-index. Its absolute magnitude of .113 is roughly equal to other significant performance measures. This means social performance of the housing corporation is related with a lower governance level.

¹⁹ This is the expected sign for Operating Expenses.

Table 2: Correlations of HCG-index with Performance Measures

This table shows the Pearson and Spearman correlations between the HCG-index and each performance measure. The first column shows the performance measures. Column 2 gives the number of observations used in the correlation tests. The expected direction is displayed in the third column. Columns 4 and 5 give the test results for respectively the 1-tailed Pearson and Spearman tests. The results are bold when they are significant in the expected direction and cursive when significantly correlated in the unexpected direction. *, **, and *** indicate significance at 10%, 5%, and 1% respectively for a 1-tailed test.

Performance measure	# obs	Exp. Direction	Pearson (1-tailed)	Spearman (1-tailed)
Total Score	182	Positive	.090	.066
Combined Score	182	Positive	.102*	.083
Financial Management	182	Positive	.124**	.119*
Operating Expenses	180	Negative	-.132**	-.121*
Quality 2015	182	Positive	-.005	-.030
Quality 2014	182	Positive	.011	-.003
Tenants' Judgment 2015	175	Positive	<i>-.113*</i>	-.088
Tenants' Judgment 2014	176	Positive	-.021	-.059
Return on Equity	182	Positive	.062	.080
Return on Assets	182	Positive	.070	.079
Ln Operating Revenues	144	Positive	-.054	-.092
Net Profit	181	Positive	.088	.100

Table 3 shows the differences in means of the performance measures between the top and bottom 10, 20 and 30% of the HCG-index. As can be expected most of the significant results are in the 20% difference column. The sample size of the 10% measure is low²⁰ which leads to a relative high standard deviation. This makes it less likely to find significant differences. The 30% measure includes 60% of the data and is therefore expected to have a smaller difference in mean than the other two groups.

Five performance measures have a significantly different mean in the top and bottom 20%. Operating Expenses is only performance measure which is significant at a 1% level and has a value of -100.30. This means that the top 20% governed housing corporations on average have € 100 less operating expenses per rental unit per year compared to the bottom 20% governed firms. Other significant differences in mean of the top and bottom 20% HCG-index are 0.38 (Total Score), 0.51 (Combined Score), 0.38 (Financial Management). The ROA of the top 20% HCG-index housing corporations is significantly 1% higher than for the bottom 20%. Although the net profit of the top 20% governed firms is significantly higher than of the bottom 20% with € 6,180, the Operating Revenues are significantly lower with - 0.39. The top and bottom 10% has significant differences for the Total Score, Combined Score, Financial Management, and Operating Expenses. The differences in means between the 30% highest and lowest scoring corporations are significant for Financial Management, Operating Expenses and Tenants' Judgment 2015. All significant results are in the expected direction, except for Tenants'

²⁰ N is around 18, depending on the performance measure.

Judgment 2015. However, the coefficient of this last performance indicator is 3 to 4 times smaller (in absolute terms) than the other significant results with the same scoring range (Financial Management).

Table 3: Mean Differences Performance Measures between Top and Bottom 10, 20 & 30% of HCG-index

This table contains the differences in means test for all performance measures. The housing corporations are first sorted according to descending HCG-index scores. Hereafter the means of each performance measure from the top 10, 20 and 30% are compared to resp. the bottom 10, 20 and 30% housing corporations. In the first column the performance measures are stated. Column 2-4 show the results from the mean comparisons. The results are bold when they are significant in the expected direction and cursive when significantly correlated in the unexpected direction. *, **, and *** indicate significance at 10%, 5%, and 1% respectively for a 1-tailed test.

Performance Measure	Top and Bottom 10%	Top and Bottom 20%	Top and Bottom 30%
Total Score	0.47*	0.38*	0.22
Combined Score	0.63**	0.51**	0.24
Financial Management	0.37*	0.38**	0.28**
Operating Expenses	-101.79**	-100.30***	-72.44**
Quality 2015	0.11	0.00	-0.06
Quality 2014	0.26	0.14	-0.04
Tenants' Judgment 2015	-0.02	-0.08	<i>-0.09*</i>
Tenants' Judgment 2014	0.10	0.04	-0.05
Return on Equity	0.03	0.03	0.00
Return on Assets	0.01	0.01*	0.00
Ln Operating Revenues	-0.31	<i>-0.39*</i>	-0.21
Net Profit	4022.83	6180.71*	1871.07

Table 4 shows the differences in means of the HCG-index between the top and bottom 10, 20 and 30% of the various performance measures. The table is not completely filled as the data does not allow me to get results for every top 10, 20 or 30% performance measure. This is due to the fact that the ranges of the performance measures are sometimes quite small, which means that there are a great number of equal scores. For example the possible scoring range of Financial Management and Quality is from 1 to 3. This makes it especially for the relative performance measures impossible to get results for all top and bottom differences.

Only Operating Expenses and Net Profit have significant mean differences in the expected direction. At a 10% level the top Operating Expenses performers comply on average with 1.17 more governance factors than the bottom performers. At the 20% level this number rises to 1.36 factors. At the 30% level the top Net Profit performers have a 0.70 significantly higher HCG-index than the bottom performers. Tenants' Judgment 2015 has a significant result at the 10% level in the unexpected direction with a score of -1.31.

Table 4: Mean differences HCG-index between Top and Bottom 10, 20 & 30% of performance measures.

This table looks at the differences in means of the HCG-index for every performance measure. The housing corporations are sorted from high to low for each performance measure. This means the order of housing corporations is different for every performance measure. Hereafter, the means of the HCG-index from the top 10, 20 and 30% are compared to resp. the bottom 10, 20 and 30% housing corporations for each performance measure. In the first column the performance measures are stated. Column 2-4 show the results from the mean comparisons. The results are bold when they are significant in the expected direction and cursive when significantly correlated in the unexpected direction. *, **, and *** indicate significance at 10%, 5%, and 1% respectively for a 1-tailed test. N/A means that no data was available for this measure point. This is due to the fact that some performance measure have a lot of results that are exactly the same. Therefore a top 10, 20, 30% could sometimes not be compiled.

Performance Measure	Top and Bottom 10%	Top and Bottom 20%	Top and Bottom 30%
Total Score	1.09	N/A	0.47
Combined Score	1.31	N/A	0.54
Financial Management	N/A	N/A	0.78
Operating Expenses	- 1.17**	- 1.36***	1.03
Quality 2015	N/A	<i>- 0.04</i>	N/A
Quality 2014	N/A	0.08	N/A
Tenants' Judgment 2015	<i>- 1.31*</i>	N/A	<i>- 0.51</i>
Tenants' Judgment 2014	0.77	<i>- 0.15</i>	0.48
Return on Equity	0.28	0.25	0.46
Return on Assets	0.78	0.39	0.43
Ln Operating Revenues	0.47	- 0.66	- 0.57
Net Profit	- 0.11	0.47	0.70*

4.1.1 Summary

Table 2 and 3 results reveal that firms with better governance, as measured by a higher HCG-index, have a higher Combined Score, higher Financial Management score and a lower Operating Expenses. In contrast, lower HCG-indices have lower Combined Scores, Financial Management scores and higher Operating Expenses. Although not significantly Pearson and Spearman correlated with the HCG-index, Total Score has significantly different mean for the top and bottom 10 and 20% HCG-index scores. The same goes for Net profit and ROA at a 20%-level. Table 4 shows that firms with lower Operating Expenses and firms with higher Net Profits have a higher HCG score. The tables also show that Tenants' Judgment 2015 has a significant negative relation with the HCG-index. These are the three variables that have significant differences in means for both better HCG-index and better performances. This might indicate a non-causal relation between the governance and these performance measures.

4.2 Categories and Factors

4.2.1 Categories and Performance of Housing Corporations

Table 5 shows the association of the six governance categories with the twelve performance measures. Financial Management is positively correlated with all six categories of which one is significant (Qualifications Supervisory Board). Operating Expenses is negatively correlated (as expected) with all the governance categories and two of them are significant (Social Responsibility and Qualifications Supervisory Board). Net Profit is positively correlated with five categories of which three include significant results (Dialogue Stakeholders, Risk Control and Qualifications Directors), and negatively correlated with one category (Social Responsibility) which is Pearson significant. The Combined Score is positively associated with four categories of which two are only Pearson significant (Qualifications Directors and Qualifications Supervisory Board). However, Dialogue Stakeholders and Risk Control are insignificantly negatively correlated with the Combined Score. Total Score is positively correlated with four categories of which Qualifications Supervisory Board is the only significant one. Dialogue Stakeholders and Risk Control are negatively correlated with the Total Score. None of these results are significant. Tenants' Judgment 2015 is insignificantly positively correlated with the Approachability and Accountability of the Boards and Qualifications Supervisory Board. Four categories have negative associations, of which Risk Control and Dialogue Stakeholders have significant results. Operating Revenues is negatively correlated with four categories of which Approachability and Accountability of Boards and Qualifications Supervisory Board are significant.

The other performance measures are significantly correlated with one or two categories. Total Score and Financial Management are associated significantly in their expected directions with the Qualifications

Supervisory Board category only. Quality 2015 is significantly correlated with Dialogue stakeholders in the unexpected direction. Quality 2014 is positively correlated to the Qualifications of the Directors. Both tenants' judgment measures are negatively correlated with at least four of the six categories. For Tenants' Judgment 2015 the negative association with Risk Control and Dialogue Stakeholders is significant. Tenants' Judgment 2014s positive relation with Qualifications Directors is significant. However it's negatively Spearman correlated with Dialogue Stakeholders and Risk Control. Both the Return on Equity and the Return on Assets are significantly and positively correlated with the Approachability and Accountability of the Boards and Qualifications Board category (this last one only Spearman significant). They both have a negative association which is significant with Social Responsibility.

4.2.1.1 Summary

The Table 5 results match those in Table 3. It shows that the governance is related to the performance of housing corporations. With the exceptions of Tenants' Judgment 2015, Tenants' Judgment 2014 and Operating Revenues, who have only two categories in the 'correct' direction, all performance measures are correlated in the expected direction with (more than) half of the categories. The categories Dialogue Stakeholders, Risk Control and Social Responsibility have a big contribution to the unexpected associations with resp. 14, 13 and 13 results out of a possible 24 being in the 'wrong' direction. These three categories account for 40 of the total of 56 unexpected relations. Based on 144 comparisons (twelve performance measures times six categories times two correlation tests) the associations are in the foreseen direction 61% of the time (88 observations). Not including the three negative categories this number increases to 56 of 72 expected association, being 78%. For the significant correlations (38 results) 61% is in the 'correct' direction (23 times). Of the fifteen unexpected significant relations, eleven are in either Dialogue Stakeholders, Risk Control or Social Responsibility.

Financial Management, Operating Expenses, Total Score, Combined Score, Operating Revenues and Net Profit have mentionable significant results in Table 3. In Table 5 Financial Management has solely positive associations and Operating Expenses, ROA and Net Profit have 10 of a possible 12 foreseen relations. Total score, Combined score and ROE all have 8 out of 12 results in the expected direction. This shows these performance measures are related to governance in the expected manner. Tenants' Judgment 2014 is negatively correlated 9 out of 12 times. Tenants' Judgment 2015 is negatively associated 8 times of which 3 are significant and for Operating Revenues 4 of the 7 negative correlations are significant. This confirms previous results that social performance and Operating Revenues are related negatively to corporate governance.

The result for specific governance categories can be summarized as follows (presented in decreasing order of their conformance with expected performance):

1. Approachability and Accountability of Boards is expectedly positively correlated with the performance measures for 21 of the 24 results. Four of the expected associations are significant and two of the unexpected output is significant.
2. Qualifications Supervisory Board is expectedly positively correlated with the performance measures for 19 of the 24 results. Six of the expected associations are significant and two of the unexpected correlations are significant.
3. Qualifications Directors is expectedly positively correlated with the performance measures for 16 of the 24 results. Nine of the expected associations are significant and none of the unexpected output is significant.
4. Social Responsibility is expectedly positively correlated with the performance measures for 11 of the 24 results. Only one of the expected associations is significant and three of the unexpected correlations are significant.
5. Risk Control is expectedly positively correlated with the performance measures for 11 of the 24 results. Only one of the expected associations is significant and three of the unexpected correlations are significant.
6. Dialogue Stakeholders is expectedly positively correlated with the performance measures for 10 of the 24 results. Two of the expected associations are significant and four of the unexpected associations are significant.

Table 5: Six Governance Code Categories Associated with the twelve performance measures

This table shows the Pearson and Spearman correlations between the governance categories and the performance measures. The first column gives the governance categories. In columns 2-13 the test results are included. The top number is the Pearson score and the bottom one in parentheses is the Spearman test coefficient. The results are bold when they are significant in the expected direction and cursive when significantly correlated in the unexpected direction. *, **, and *** indicate significance at 10%, 5%, and 1% respectively for a 1-tailed test.

Pearson (Spearman)	Total Score	Comb Score	FM	Op Exp	Qual15	Qual14	TJ15	TJ14	ROE	ROA	Ln Op Rev	NP
Social Responsibility	.075 (.065)	.068 (.053)	.092 (.81)	-.100* (-.067)	.010 (.005)	-.003 (-.015)	-.076 (-.062)	-.025 (-.014)	<i>-.098*</i> (-.086)	<i>-.178***</i> (<i>-.133**</i>)	-.007 (.014)	<i>-.125**</i> (-.085)
Dialogue Stakeholders	-.054 (-.064)	-.025 (-.025)	.012 (.014)	-.011 (.002)	<i>-.103*</i> (<i>-.103*</i>)	-.053 (-.053)	-.095 (<i>-.107*</i>)	-.080 (<i>-.098*</i>)	-.015 (.013)	.094 (.056)	.036 (.049)	.146** (.101*)
Approachability and Accountability of Boards	.059 (.037)	.058 (.060)	.069 (.061)	-.056 (-.058)	.012 (.014)	.008 (.022)	.080 (.064)	.000 (-.001)	.147** (.134**)	.161** (.153**)	<i>-.233***</i> (<i>-.241***</i>)	.021 (.056)
Risk Control	-.017 (-.035)	-.029 (-.050)	.019 (.009)	-.017 (.001)	-.053 (-.066)	-.068 (-.077)	<i>-.173**</i> (<i>-.141**</i>)	-.078 (<i>-.106*</i>)	.072 (.083)	.068 (.085)	.105 (.064)	.067 (.102*)
Qualifications Directors	.011 (.001)	.126** (.120*)	.055 (.056)	-.081 (-.092)	-.049 (-.064)	.130** (.125**)	-.057 (-.058)	.130** (.133**)	.094 (.117*)	.071 (.099*)	-.051 (-.045)	.113 (.140**)
Qualifications Supervisory Board	.127** (.119*)	.098* (.095)	.099* (.093)	-.106* (-.111*)	.087 (.089)	.035 (.039)	.029 (.053)	-.006 (-.029)	-.008 (.013)	.049 (.012)	<i>-.107*</i> (<i>-.147**</i>)	.076 (.037)

4.2.2 Factors and Performance of Housing Corporations

Table 6 shows the associations of the 41 governance factors with the performance indicators. Six factors are constant and therefore no correlation can be determined, leaving 35 governance factors. Financial Management has twenty factors that are positively correlated with both the Pearson and Spearman test of which eight are significant. The three factors with expected (positive) signs possessing the largest correlations are: 1) the establishment of the remuneration of the board member by the Supervisory Board according to applicable legal frameworks, 2) attention that is paid to soft controls, and 3) not receiving restructuring aid. One factor has an unforeseen (negative) association, which is significant. This relation exists if The Boards consult with the active tenants' associations in its housing region.

Operating Expenses has twenty-three factors that are expectedly (negatively) Pearson correlated and twenty-two factors that are expectedly Spearman correlated. The three factors with the largest negative Pearson correlations are 1) the Supervisory Board has assessed the performance of the director(s) this year, 2) the achieved PE-points of Directors and Supervisory board are listed in the Annual Report, and 3) the fact that the housing corporation doesn't receive restructuring aid. Compared to the Pearson correlation the Spearman top three includes the remuneration of the board members in accordance with the applicable legal framework instead of the assessment of the director's performance by the Supervisory Board. The two factors which are Pearson significant in the unforeseen direction are 1) the consultation of the board with the active tenants' associations in its housing region, and 2) the establishment of a treasury statute by the board. In the Spearman test the two factors that are significantly related in the wrong direction are 1) consultation of the board with the active tenants' associations in its housing region, and 2) the current external auditor is appointed for a period of maximum eight years.

For the Total Score the Pearson and Spearman tests show respectively twenty-two and twenty-three expectedly correlated factors. Thereof, respectively five and six factors are significant, while four and five factors are significant in the opposite direction. Of these the three with the highest positive correlation are 1) the housing corporation is not under surveillance, 2) the remuneration of the Directors is set by the Supervisory Board according to the applicable legal framework, and 3) the Annual Report shows an overview of resignation dates of the individual members of the Supervisory Board. The three factors with the highest correlation in the opposite direction are in both tests 1) the external auditor is appointed for a period of maximum eight years, 2) risks associated with the housing activities are stated in the Annual Report, and 3) the Board has established a treasury statute.

The Combined Score has 21 Pearson and 21 Spearman factors that are correlated as foreseen (positive) of which sixteen are significant. There are twelve significant associations in the unexpected (negative)

direction. The top three factors with the highest correlation magnitude are 1) the housing corporation is not under surveillance, 2) the active tenants' associations have the right to make a binding nomination for one or two commissioners depending on the size of the Supervisory Board, and 3) this year the Supervisory Board assessed the performance of the director(s). The three factors with the highest negative coefficient are 1) the Supervisory Board assessed of each individual commissioner whether he or she can monitor independently and publishes this in the Annual Report, 2) the Board consults with the active tenants' associations in its housing region, and 3) the Board has established an investment statute.²¹ These result are equal for both the Pearson and the Spearman test.

Net Profit has 23 positive factors, of which five have significant results. Of the negative associations three factors are significant. The top three factors with the highest Pearson correlation magnitude are 1) this year the Supervisory Board evaluated its own performance and evaluated its performance under independent external guidance in the last two years, 2) the Board has established an investment statute,²² and 3) the remuneration of the Directors is set by the Supervisory Board according to the applicable legal framework. This is also the top three for the Spearman test. The three factors with the highest negative associations are 1) the Annual Report reflects the core values of the housing corporation, 2) the Annual Report shows an overview of resignation dates of the individual members of the Supervisory Board, and 3) the housing corporation is not under surveillance.

For the Pearson and Spearman test Tenants' Judgement 2015 has respectively fifteen and eighteen positive correlations of which resp. five and four are significant. However, factor has resp. ten and nine significant negative (unexpected) associations. The top three positive factors that are Pearson significant exists of 1) the housing corporation is not under surveillance, 2) the housing corporation has a strategic business plan, and 3) the audit and remuneration committees are not chaired by the Chairman of the Supervisory Board. The composition of the top three of the Spearman test is the same except that the factor that the Supervisory Board publishes its activities in the Annual Report takes the place of the existence of a strategic business plan. The three factors with the highest negative Pearson coefficients are 1) the board has established a treasury statute, 2) the risks associated with the housing activities are reported in the Annual Report, and 3) the Supervisory Board is responsible for the recruitment and selection of board members and shall publish a profile. For the Spearman test this last factor is not in the top three. The top three is completed by the factor that the Supervisory Board has drawn up rules according to which its members act.

²¹ Beleggingsstatuut.

²² Beleggingsstatuut.

Operating Revenues is positively correlated with fourteen factors of which five include significant results. There are twenty-one negative associations including 9 significant. The top three positive correlations are 1) risks associated with the housing activities are stated in the Annual Report, 2) attention that is paid to soft controls, and 3) the Board has established a treasury statute. The three factors with the highest negative Pearson coefficients are 1) the housing corporation is not under surveillance, 2) the remuneration of the Directors is set by the Supervisory Board according to the applicable legal framework, and 3) the housing corporation has examined its social performance at least once in the past four years through an inspection agency that is accredited by the SVWN. To form the Spearman correlation top three this last factor is replaced by the factor that the housing corporation has a strategic business plan.

Quality 2015 has 16 positive factors. Five of them are significant. The negative significant correlations are limited to six factors. Quality 2014 has 16 positive governance factors of which six significant. Five of the negative associations are significant. Tenants' Judgment 2014 has thirteen (fourteen for Spearman) positive correlations, including three significant ones. Four factors (five for Spearman) are significant in the unexpected (negative) direction. The Return on Equity has nineteen (twenty for Spearman) positive relations including four (seven for Spearman) significant ones. Three (four for Spearman) factors are significant in the opposite direction. Twenty-five (twenty-four for Spearman) positive associations are found for the return on assets, however only five of these are significant. Only two (four for Spearman) factors are significantly correlated in the 'wrong' direction.²³

²³ If nothing is stated the results for Pearson and Spearman are numerically equal.

Table 6 Correlations Individual factors Performance Measures

This table presents the Pearson and Spearman correlations between 41 governance factors and the 12 performance measures. In column one the factors are stated underneath their corresponding category. In columns 2-13 the test results are included. The top number is the Pearson score and the bottom one in parentheses is the Spearman test coefficient. In the 14th and 15th column the number of significant results in the respectively foreseen and unforeseen direction are stated. The results are bold when they are significant in the expected direction and cursive when significantly correlated in the unexpected direction. *, **, and *** indicate significance at 10%, 5%, and 1% respectively for a 1-tailed test. .c means that the results are constant for all housing corporations.

Pearson (Spearman)	Total Score	Combined Score	Financial Management	Operating Expenses	Quality 2015	Quality 2014	Tenants' Judgment 2015	Tenants' Judgment 2014	ROE	ROA	Ln Operating Revenues	NP	Sig. Exp. Sign	Sig. Unexp. Sign
Social Responsibility														
Management Board or Supervisory Board give their views on management and supervision in the Annual Report.	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c		
The Annual Report reflects the core values of the housing corporation.	-.034 (-.034)	<i>-.096*</i> (<i>-.104*</i>)	-.038 (-.044)	.032 (.065)	-.010 (-.010)	<i>-.103*</i> (<i>-.103*</i>)	-.089 (-.096)	-.082 (-.067)	<i>-.107*</i> (<i>-.118*</i>)	<i>-.210***</i> (<i>-.187***</i>)	.001 (.012)	<i>-.154**</i> (<i>-.128**</i>)	0 (0)	5 (5)
There is an internal code of conduct or code of integrity and a whistleblower policy.	.093 (.089)	.079 (.086)	.034 (.029)	-.075 (-.062)	.112* (.113*)	.082 (.083)	.073 (.078)	.056 (.084)	.072 (.056)	.021 (.023)	<i>-.115*</i> (<i>-.158*</i>)	.027 (.039)	1 (1)	1 (1)
The Annual Report contains a summary of the complaints received.	.080 (.082)	.128** (.131**)	.114* (.118*)	-.076 (-.094)	-.010 (-.009)	.063 (.061)	-.001 (.005)	.033 (.023)	-.088 (-.078)	-.065 (-.045)	.055 (.099)	-.058 (-.041)	2 (2)	0 (0)
The achieved PE points of Directors and Supervisory Board are listed in the Annual Report.	.062 (.060)	.085 (.085)	.118* (.116*)	<i>-.181***</i> (<i>-.170**</i>)	-.043 (-.043)	-.008 (-.008)	<i>-.138**</i> (<i>-.134**</i>)	-.034 (-.042)	.039 (.078)	.000 (.037)	-.045 (-.067)	.038 (.059)	1 (2)	1 (1)
Dialogue with Stakeholders														
The housing corporation maintains contact with its stakeholders.	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c		

The board consults with the active tenants' associations in its housing region.	-.090 (-.101*)	-.140** (-.137**)	-.120* (-.123**)	.116* (.142**)	-.001 (-.001)	-.075 (-.075)	.014 (.019)	-.061 (-.074)	.072 (.038)	.100* (.030)	.010 (.007)	.085 (.032)	1 (0)	3 (4)
The Board deliberates and makes performance agreements with the municipality.	-.019 (-.025)	.034 (.032)	.065 (.069)	-.063 (-.060)	-.111* (-.111*)	-.024 (-.024)	-.110* (-.126**)	-.060 (-.073)	-.047 (-.003)	.058 (.048)	.034 (.049)	.121* (.095)	1 (0)	(2) (2)
Approachability and accountability of Directors and Supervisory Board														
The housing corporation has a strategic business plan.	.027 (.016)	.011 (.006)	-.020 (-.019)	-.023 (.005)	.070 (.070)	.040 (.042)	.154** (.132**)	.065 (.051)	.119* (.111*)	.061 (.057)	-.137* (-.173**)	-.021 (.011)	2 (2)	1 (1)
The Annual Report reports on the realized social, operational and financial performance of the housing corporation.	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c		
The housing corporation has examined its social performance at least once in the past four years through an inspection agency that is accredited by the SVWN.	.056 (.042)	.071 (.076)	.118* (.117*)	-.057 (-.091)	-.052 (-.052)	-.029 (-.029)	-.038 (-.054)	-.068 (-.087)	.089 (.088)	.166** (.162**)	-.187** (-.162**)	.051 (.073)	2 (2)	1 (1)
Risk Management														
The risks associated with the housing activities are stated in the Annual Report.	-.124** (-.128**)	-.065 (-.074)	-.077 (-.080)	.049 (.090)	-.110* (-.110*)	-.010 (-.010)	-.177*** (-.185***)	-.019 (-.036)	-.014 (.013)	-.006 (.021)	.226*** (.248***)	.066 (.082)	1 (1)	3 (3)
The Board has established a treasury statute.	-.112* (-.113*)	-.043 (-.036)	-.019 (-.019)	.099* (.074)	-.161** (-.161**)	-.044 (-.046)	-.257*** (-.191***)	-.074 (-.059)	-.131** (-.135**)	-.125** (-.133**)	.164** (.180**)	-.024 (-.056)	1 (1)	6 (5)
The Board has established an investment statute. (investeringsstatuut)	-.024 (-.034)	-.107* (-.099*)	-.069 (-.070)	.052 (.047)	.046 (.046)	-.083 (-.083)	-.044 (-.006)	-.079 (-.088)	.026 (.036)	.000 (.030)	-.006 (-.021)	.055 (.068)	0 (0)	1 (1)

The Board has established an investment statute. (beleggingsstatuut)	-0.77 (-.084)	-.115* (-.123**)	-.026 (-.025)	-.001 (.006)	-.096* (-.096*)	-.146** (-.146**)	-.116* (-.116*)	-.138** (-.154**)	.129** (.143**)	.121* (.119*)	.077 (.040)	.126** (.128**)	3 (3)	5 (5)
Management and Supervisory Board pay attention to soft controls (in the Annual Report).	.068 (.067)	.109* (.103*)	.151** (.149**)	-.120* (-.137**)	-.074 (-.074)	-.010 (-.009)	-.110* (-.082)	-.038 (-.049)	-.058 (-.102*)	-.065 (-.097*)	.218*** (.206***)	-.016 (-.052)	4 (4)	1 (2)
Non-audit services by the auditor constitute less than 50% of the total audit fees.	.045 (.047)	-.035 (-.027)	.064 (.068)	-.074 (-.065)	-.005 (-.005)	-.129** (-.128**)	-.005 (.014)	-.096 (-.107*)	.047 (.042)	.055 (.016)	-.027 (-.056)	-.023 (-.029)	0 (0)	1 (2)
The auditor hasn't issued an adverse opinion.	-.064 (-.071)	-.062 (-.071)	-.084 (-.087)	.051 (.065)	-.001 (-.001)	.003 (.004)	.024 (.034)	-.003 (.001)	-.008 (-.019)	.006 (.011)	-.010 (-.029)	.008 (-.015)	0 (0)	0 (0)
The functioning of the external auditor is thoroughly reviewed at least once every four years.	.080 (.082)	.078 (.064)	.087 (.083)	-.076 (-.064)	.025 (.025)	.017 (.018)	-.053 (-.054)	.038 (.033)	.093 (.106*)	.060 (.088)	.029 (.000)	.066 (.091)	0 (1)	0 (0)
The current external auditor is appointed for a period of maximum eight years.	-.140** (-.131**)	-.100* (-.104*)	-.090 (-.091)	.091 (.103*)	-.120* (-.120*)	-.048 (-.049)	-.161** (-.156**)	-.078 (-.092)	.077 (.104*)	.077 (.099*)	.115* (.120*)	.062 (.095)	1 (3)	4 (5)
The corporation does not receive any restructuring aid.	.162** (.151**)	.168** (.154**)	.149** (.144**)	-.121* (-.145**)	.082 (.082)	.083 (.083)	.014 (.019)	.034 (.049)	-.049 (-.083)	.069 (.080)	-.153** (-.105)	-.023 (-.003)	4 (4)	1 (0)
The housing corporation is not under surveillance.	.185*** (.177***)	.220*** (.213***)	.095 (.090)	-.075 (-.092)	.188*** (.188***)	.227*** (.226***)	.204*** (.215***)	.212*** (.208***)	.002 (-.017)	.034 (.026)	-.270*** (-.246***)	-.114* (-.044)	6 (6)	2 (1)
Qualifications Directors														
The board is tested for its suitability, for which the Minister has been asked his views.	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c		
The Supervisory Board sets the remuneration of the Board members in accordance with the applicable legal	.184*** (.173***)	.138** (.151**)	.174*** (.174***)	-.117* (-.156**)	.088 (.088)	.008 (.009)	.059 (.073)	-.018 (-.015)	.154** (.184***)	.196*** (.204***)	-.190** (-.176**)	.122** (.162**)	7 (7)	1 (1)

frameworks. This remuneration is published in the annual report.														
All reported conflicts of interest with members of the Board of Directors have been taken care of appropriately and with integrity or no conflict has been reported.	.007 (.009)	.082 (.089)	.010 (.015)	.023 (.031)	-.001 (-.001)	.115* (.113*)	.024 (.034)	.051 (.067)	.056 (.084)	.055 (.083)	-.054 (-.078)	.076 (.108*)	1 (2)	0 (0)
This year the Supervisory Board assessed the performance of the director(s).	.089 (.096*)	.183*** (.175***)	.121* (.118*)	-.185*** (-.133**)	-.002 (-.003)	.139** (.138**)	.003 (.006)	.207*** (.179***)	.034 (.051)	.071 (.056)	-.011 (.007)	.014 (.053)	5 (6)	0 (0)
The Supervisory Board is responsible for the recruitment and selection of Board Members and shall publish a profile.	-.110* (-.103*)	-.015 (-.017)	-.021 (-.013)	.021 (-.016)	-.155** (-.155**)	.002 (.001)	-.192*** (-.156**)	.036 (.048)	-.041 (-.004)	-.058 (-.018)	.080 (.041)	.093 (.078)	0 (0)	3 (3)
The Directors are appointed for a maximum of four years and each reappointed for a maximum of four years.	.008 (.008)	.066 (.067)	-.027 (-.026)	-.017 (-.012)	.046 (.046)	.134** (.134**)	.081 (.056)	.078 (.077)	.124** (.104*)	.058 (.062)	-.086 (-.058)	.028 (.045)	2 (2)	0 (0)
Qualifications Supervisory Board														
The Supervisory Board has been tested for its suitability, for which the Minister has been asked his views.	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c		
The remuneration of Board falls within the existing legal frameworks and is listed in the Annual Report.	.081 (.089)	.023 (.025)	.066 (.073)	-.062 (-.102*)	.052 (.051)	-.044 (-.044)	.029 (.030)	-.079 (-.089)	.031 (.049)	.025 (.032)	-.128* (-.115*)	-.023 (.013)	0 (1)	1 (1)
All reported conflicts of interest with members of the Supervisory Board have been taken care of appropriately and with integrity or no conflict has been reported.	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c	.c		

The Supervisory Board shall asses of each commissioner whether or not he or she can monitor independently. This is reported in the Annual Report of the Supervisory Board.	-.015 (-.018)	-.141** (-.145**)	-.062 (-.065)	.019 (.020)	.052 (.051)	-.144** (-.145**)	-.009 (-.011)	-.116* (-.119*)	-.008 (.046)	.039 (.048)	.017 (-.018)	.105* (.092)	1 (0)	3 (3)
The Supervisory Board evaluated its own performance this year and has evaluated its performance under independent external guidance at least once in the last two years.	.071 (.068)	.115* (.120*)	.045 (.046)	-.031 (-.032)	.061 (.060)	.125** (.125**)	.106* (.084)	.088 (.076)	.068 (.113*)	.112* (.124**)	-.064 (-.064)	.169** (.143**)	5 (5)	0 (0)
The Supervisory Board has made a profile in which demands are made on the composition of the Supervisory Board.	.018 (.019)	-.035 (-.027)	-.013 (-.011)	.009 (.011)	.047 (.047)	-.039 (-.039)	-.009 (-.009)	-.079 (-.087)	-.009 (-.028)	.031 (-.028)	-.006 (-.006)	.045 (.015)	0 (0)	0 (0)
Supervisory Board members are appointed for a maximum period of four years and can be reappointed once for a maximum period of four years.	.031 (.024)	.049 (.040)	.078 (.081)	-.113* (-.111*)	-.046 (-.045)	-.016 (-.015)	-.051 (-.053)	-.006 (-.006)	.037 (.028)	.062 (.015)	-.052 (-.077)	.088 (.042)	1 (1)	0 (0)
The Annual Report shows an overview of resignation dates of the individual members of the Supervisory Board. Continuity is assured as not everyone will resign in the same or subsequent year.	.171** (.161**)	.058 (.065)	.148** (.143**)	-.052 (-.108*)	.099* (.099*)	-.085 (-.084)	-.046 (.005)	-.018 (-.013)	-.046 (-.059)	-.026 (-.036)	-.173** (-.140**)	-.152** (-.118*)	3 (4)	2 (2)
The Audit Committee and the Remuneration Committee is not chaired by the Chairman of the Supervisory Board.	.045 (.046)	.026 (.014)	.011 (.015)	-.018 (-.008)	.060 (.060)	.028 (.030)	.140** (.163**)	.078 (.060)	-.012 (-.029)	-.031 (-.055)	-.032 (-.083)	.041 (-.084)	1 (1)	0 (0)
Active tenants' associations have the right to make a binding nomination for two or more commissioners, if the Supervisory Board consists of five or more members, or one binding recommendation if the board consists of three or four members. If no tenant	.119* (.121*)	.184*** (.187***)	.072 (.077)	-.095 (-.094)	.108* (.108*)	.199*** (.198***)	.036 (.034)	.144** (.142**)	-.072 (-.069)	-.067 (-.075)	-.010 (-.012)	-.077 (-.038)	5 (5)	0 (0)

organization is founded, this right goes to the tenants of the residential units.														
The Supervisory Board has drawn up regulations in which it records its own working methods and publishes these on the website of the corporation.	-.040 (-.035)	.025 (.020)	-.013 (-.017)	-.039 (-.023)	-.050 (-.050)	.054 (.053)	-.157** (-.166**)	-.067 (-.057)	-.153** (-.156**)	-.077 (-.124**)	.104 (.119*)	.005 (-.046)	0 (1)	2 (3)
The Supervisory Board makes an activity report annually and publishes this in the Annual Report.	.047 (.036)	-.057 (-.053)	-.045 (-.049)	.000 (.003)	.134** (.134**)	-.035 (-.035)	.138** (.146**)	-.107* (-.119*)	.021 (.017)	.035 (.035)	-.157** (-.130*)	.019 (.010)	3 (3)	1 (1)
The Annual Report mentions that all commissioners follow an induction program covering the relevant aspects of their function.	-.005 (.011)	-.035 (-.027)	.040 (.035)	-.004 (-.016)	-.057 (-.057)	-.101* (-.100*)	-.158** (-.150**)	-.137** (-.155**)	-.005 (-.022)	.009 (-.014)	.089 (.062)	.050 (.043)	0 (0)	3 (3)

4.2.2.1 Summary of Factors Associated with Firm Performance

The findings from Table 6 slightly confirm the conclusion derived from Tables 3 and 5 that governance is related to the performance of housing corporations. In total there are 840 coefficients of the correlation between corporate governance and firm performance (thirty-five factors times twelve performance measures multiplied by two tests). 458 factors are in the expected direction, which accounts for 55%. Of the 245 significant factor 133 have their foreseen signs, constituting a mere 54 %.

Financial Management and Operating Expenses have resp. 89 and 78% of the significant results in the expected direction, indicating a strong positive relation with the HCG-index. Net Profit, ROA and ROE are positively associated with resp. 64, 63 and 61% significant correlations with expected signs. For the Total Score and Combined Score these percentages are resp. 55% and 54%, meaning only a slightly positive relation with the HCG-index. Tenants' Judgment 2015 and Operating Revenues again show a negative relation with corporate governance as respectively 68% and 65% of the significant results have an unexpected negative sign.

4.3 Multivariate Analysis

To provide a different type of evidence, I will now perform a multivariate analysis to assess the relation between HCG-index and performance. Like other research like GIM (2001) and Brown (2004) I control for the ln of assets, which measures the size of the housing corporations. In addition the results are controlled for default risk. However an Altman-Z score cannot be calculated for housing corporations, so I use the quick ratio and debt ratio instead. This analysis is performed for all performance measures including the control variables.

Table 7 shows the output of the OLS Regressions. You see that the HCG-index has a significant relation with Financial Management and Operating Expenses in the expected direction. This is consistent with previous results. The adjusted R^2 is resp. 0.022 and 0.029 which means that 2-3% of the variance is explained by the coefficients. Tenants Judgment 2015 is the last performance measure with a significant HCG-index coefficient. However it has a negative association. This is consistent with my previous univariate analyses. The adjusted R^2 is very high. 29.9% of the variance is explained by the variables in the regression.

The control variables have their 'correct' signs when significant. The firm size negatively influences the firm performance. When the liquidity and solvability of a firm is high, the firm has a lower default risk, which is expected to have a positive influence on the firm performance.

Table 7 OLS-Regressions

This table shows the multivariate analyses. The dependent variable is a performance measure. An intercept is included in the regression. The independent variables are the HCG-index, ln of assets, quick ratio, and debt ratio. In the first column the performance measures are stated and in the second the number of observations. Columns 3-7 give the coefficients of the intercept and the independent variables. Column 8 shows the adjusted R². The results are bold when they are significant in the expected direction and cursive when significantly correlated in the unexpected direction. *, **, and *** indicate significance at 10%, 5%, and 1% respectively for a 1-tailed test. .c means that the results are constant for all housing corporations.

Performance Measure	Number of Observations	Intercept	HCG-index	Ln (Assets)	Quick Ratio	Debt Ratio	Adj R ²
Total Score	181	5.749***	0.045	-0.207***	0.110*	-0.706	0.094
Combined Score	181	5.396***	0.048	-0.183***	0.068	-0.657	0.062
Financial Management	181	1.268	0.039*	-0.006	0.084*	-0.475	0.022
Operating Expenses	179	1285.64***	-10.251*	-6.759	-29.046**	69.264	0.029
Quality 2015	181	4.481***	0.006	-0.200***	0.026	-0.231	0.159
Quality 2014	181	4.128***	0.009	-0.176***	-0.016	-0.182	0.082
Tenants' Judgment 2015	174	9.487***	<i>-0.013*</i>	-0.124***	-0.003	-0.111	0.299
Tenants' Judgment 2014	175	8.777***	-0.001	-0.100***	-0.013	-0.125	0.148
Return on Equity	181	-0.005	0.003	-0.005	0.019***	-0.013	0.053
Return on Assets	181	-0.001	0.001	-0.000	0.007***	-0.037**	0.087
Operating Revenues	144	-0.829*	-0.001	0.863***	0.039	0.670***	0.913
Net Profit	181	-37347.19**	359.29	3390.42***	1111.62	-22346.61***	0.164

5 Conclusion

This research looks at the relation between corporate governance and performance of Housing Corporations in the Netherlands. The main question I want to answer is if the corporate governance of housing corporations is related to their performance. The performance of housing corporations is assessed by looking at the financial performance and the social performance. These two components combined form the total performance.

I composed the HCG-index that consists of 41 factors spread over 6 governance categories for 182 housing corporations for the 31st December 2014. These factors are scored either 1 or 0 depending on the fact if the housing corporation complies with the specific factor or not. All scores for one corporation together form the final HCG-index for that corporation. The considered governance categories are: Social Responsibility, Dialogue Stakeholders, Approachability and Accountability of the Boards, Risk Control, Qualifications of the Directors, and Qualifications of the Supervisory Board members.

In the correlation analysis (Table 2) it is noticeable that the social performance measures and Operating Revenues are related with the HCG-index in the unexpected negative direction. Both total performance measures and the rest of the financial performance measures are positively associated with good governance. In total 15 of the possible 24 coefficients are in the expected direction of which five are significant. The nine results that have unforeseen signs are from social performance measures and Operating Revenues. In the differences of performance means analysis (Table 3), all performance measures have signs in the expected directions except for Tenants' Judgment 2015 and Operating Revenues. These results suggest that housing corporations with relative good governance have better financial and total performances (lower operating expenses, higher net profits and better total scores), but relatively poorer social performances and lower operating revenues. In the analysis of the differences of HCG means (Table 4) most coefficients have their foreseen signs. However, compared to Table 3 there are fewer significant results. Operating Expenses, Net Profit and Tenants' Judgment are the only three performance measures with significant results which indicate that especially for these measures no conclusions about causality can be drawn.

Looking at the correlations between the six governance categories and the twelve performance measures (Table 5), I find that the categories Qualifications Supervisory Board, Approachability and Accountability of the Board, and Qualifications of the Board of Directors are highly related with good performance. Vice versa Social Responsibility, Dialogue Stakeholders and Risk Control are negatively associated with good performance. Qualifications Supervisory Board and Risk control are the two biggest contributors to the HCG-index as with respectively 13 and 11 factors.

I correlate all the 41 individual governance factors with the twelve performance measures (Table 6). I find that the seven factors that are most frequently significantly associated with good performance are 1) the corporation doesn't receive any restructuring aid, 2) the housing corporation is not under surveillance, 3) the Supervisory Board sets the remuneration of the Board Members in accordance with the applicable framework, 4) this year the Supervisory Board assessed the performance of the director(s), 5) this year the Supervisory Board evaluated its own performance and evaluated its performance under independent external guidance in the last two years, 6) Management and the Supervisory Board pay attention to soft controls in the Annual Report, and 7) the active tenants' association has the right to make a binding nomination for one or two commissioners.

The four factors that are most often significantly related to bad governance are 1) the Board has established a treasury statute, 2) the Board has established an investment statute, 3) the Annual Report reflects the core values of the housing corporation, and 4) the current external auditor is appointed for a period of maximum eight years.

These results are important for policy makers and Dutch case law on the topics of financial service provision of banks to semi-public institutions in the Netherlands. In recent years numerous scandals were caused by bad service provision of bank to semi-public institutions. In my opinion this problem can be prevented by strengthening the special duty of care of banks. However, by illustrating that corporate governance is related to the performance of housing corporations, I show that it can be a good idea to enforce governance regulation for semi-public institutions, like has been done for housing corporations by the Housing Act 2015.

I conclude with some restrictions to this research. First of all, the HCG-index does not reflect the real impact of every factor it incorporates. This means that the relation between performance and corporate governance is not maximized. In spite of this my method is similar to that of GIM and Brown and Caylor (2004). Second, I couldn't perform a panel study as the HCG-index was constructed for one particular date. My results might not be consistent over time. Third, the performance measures I used were derived from Aedes. Aedes also looks after the interests of housing corporations. Due to this fact the objectivity of the used performance measures is hard to determine. Fourth, governance is not only used to increase firm performance. Some governance factors that aren't relevant for firm performance can be of interest for other purposes like fairness and equity. Last, no certain conclusions about causality can be derived from this research. This is consistent with other research (e.g. Larker et al. 2004), that couldn't overcome the same endogeneity problem.

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APPENDIX A Definitions of Variables

Return on Equity = Net Profit / Total Equity

Return on Assets = Net Profit / Total Assets

Quick Ratio = (Current Assets – Stock – Work in Progress) / Current Liabilities

Debt Ratio = Long Term Debt / Total Assets