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The impact of the new housing regulations on risk disclosure quantity and quality of Dutch housing associations

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Abstract The parliamentary inquiry in 2014 reported that the internal and external monitoring of housing associations was insufficient. In order to monitor housing associations more extensively, the new housing act included many additional reporting requirements to increase the transparency. Therefore, housing associations need to disclose more risk information. This study measures the quantity and quality, using the specificity, before and after the implementation of the new housing act in 2015 in order to test whether the new regulations improve the information gap between the firms and stakeholders. The results imply that, in fact, this is the case, which is beneficial for the firms' stakeholder, regulators and empirical literature. However, the results are less pronounced for the increase in quality than in quantity.
Keywords risk-reporting, risk-disclosure, content analysis, specificity, housing associations

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1 Introduction

Eight years ago, the Dutch House of Representatives agreed to start an investigation, a parliamentary inquiry (committee), into the reasons for the several incidents at Dutch social housing associations (Parlement, 2014). In the preceding years, housing associations were discredited due to irresponsible investment choices and fraud cases (Van Weezel, 2014). At the same time, within the European Union the discussion started regarding the state aid which Dutch housing associations received through a guarantee fund which saved them millions in interest expenses (European Commission, 2009). Both developments resulted in the reformed Housing Act in 2015. The main objective of the new regulations was to safeguard the social housing stock and governmental money intended for social housing. Tenant's organizations and municipalities were more involved in the performance agreements. Consequently, the housing act should contribute to the transparency, risk management, supervision possibilities for regulatory agencies and standard setters (Min. BZK, 2015a). The academic literature advocates for this development as different theories emphasize the importance of monitoring the performance (Watts & Zimmerman, 1983). Van Puyvelde et al. (2012) adds that monitoring plays a more important role for non-profit organizations. During the parliamentary inquiry, the committee concluded that housing associations had too little risk awareness while their behaviour was too risky for a socially intended organization, especially regarding the quality of the internal control, high-risk project development and land purchases (Parlementaire Enquêtecommissie, 2014). They also stated that the housing associations' stakeholders were unaware of the risks. Linsley & Shrives (2006) confirm this, as they show that the accounting theory causes a significant information gap between a firm and its stakeholders, especially regarding the firm's risks.

Since the recent global financial crisis, the risk disclosure of organizations in general has gained attention by managers, standard setters and empirical studies (Dobler, Lajili & Zéghal, 2011). Risk reporting has become more important than in the previous years (Höring & Gründl, 2011). Nowadays, risk information disclosures are evaluated as the most important non-financial information by investors and include on average 11% of the narratives of the annual report (Campbell et al., 2014). At the same time, regulatory agencies argue that the risk disclosures lack firm-specific information, are too general and boilerplate, and therefore useless (CFO, 2010).

In this study, the informativeness of risk narratives in the annual report of Dutch housing associations between 2013 and 2018 examined. Therefore, the research question of this study is defined as "Does the reformed housing act of 2015 improve the risk disclosure of Dutch housing associations?" In order to examine this research question, different sub-questions are used, which are "Did the quantity of the risk disclosure increase following the reformed housing act?", "Did the quality of the risk disclosure increase following the reformed housing act?" and finally "Are there other factor which influence the quantity and quality of risk disclosures by Dutch housing associations?" This study will test the relation between the implementation of the new housing regulations in 2015 and the quantity and quality of the risk disclosure paragraph in the annual report of Dutch housing associations. In other words, whether the risk disclosure actually became more informative for stakeholders, and not simply compliant with the regulations. Consequently, the hypotheses in this study are stated as follows:

H1 The reformed housing act of 2015 caused an increased quantity of the disclosed risk information in the financial statements of Dutch housing associations.

H2 The reformed housing act of 2015 caused an increased quality of the disclosed risk information in the financial statements of Dutch housing associations.

The hypotheses will be tested using the annual reports of 58 randomly selected Dutch housing associations, resulting in 319 firm-year observations. The quality will be measured using the method of Hope, Hu & Lu (2016), which measures the specificity of the risks disclosed through the idiosyncratic details given, such as names of organizations, names of locations, dates and money values. Additionally, other firm-specific variables typical for the Dutch housing associations are also used to test whether they have impact on the risk disclosure behaviour. The results of this study suggest that the regulations did improve the quantity and quality of the risk information, while the firm size is the only constant significant control variable.

This study particularly contributes to the knowledge of regulators regarding the effectiveness of the renewed social housing regulations. However, taken broader, regulators recognize the importance of local and international regulation on risk reporting (Linsley & Shrives, 2006). The Dutch guidance regarding the risk reporting standards are less specific in the U.S. or U.K, therefore a greater variability in risk disclosures is possible (Deumes & Knechel, 2008). The preparers of financial statements could also learn something of this study because they are

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responsible in providing truthful and useful information to the stakeholders via the financial statements (Albring et al., 2016). Finally, this study is important for financial statement users, in other words, the stakeholders of Dutch housing associations. Nowadays, non-financial information plays a more important role, and especially the importance of risk disclosure has increased significantly (Campbell et al., 2014). Finally, this thesis contributes to prior literature as it is the first study to investigate the risk disclosure behaviour of non-profit organizations.

The remainder of this thesis is structured as follows. The second sections introduces the institutional context of the Dutch housing associations and the new housing act. The third section, the literature review, discusses the relevant literature on corporate governance, risk management and risk disclosure, and eventually it develops two hypotheses. The fourth section outlines the research design. The fifth section provides the results. Finally, the last section concludes this thesis and discusses the main limitations, contributions and the recommendations for further research.

2 Description housing associations

This section discusses the institutional setting of Dutch housing associations. Section 2.1 describes the main developments within the sector since the first regulations of 1901 and the different motives to reform the sector in 2015. Section 2.2 contains a brief overview of the new Housing Act and its main implications. Section 2.3 explains the different stakeholders of housing associations. Section 2.4 describes the risk reporting regulations in the Netherlands, and the guidelines for housing associations. Section 2.5 summarizes the chapter.

2.1 Origin and reforms

The first housing regulations regarding social housing associations were introduced in 1901, when the housing associations obtained the status of Admitted Institutions. This status guaranteed the embedding of housing associations into the public legal framework, which means that they are non-profit institutions that are obliged to use their capital only for the purpose of social housing (Priemus, 2013; Boelhouwer & Priemus, 2014). Since the second half of the 19th century, the first private housing institutions with social intentions emerged.

Housing associations played an important role in housing the disadvantaged, especially during harder times, especially during the extreme housing shortage after the World War II (Min. BZK, 2015a). The market share of the housing associations grew from 12% of the total housing stock to respectively 42% during 1950 and 1992 (Priemus, 2013). Since the 1960s, more housing associations have started to become financially independent. This meant they didn't have financial ties with the government anymore while they still maintained their social job (Priemus, 2013). This accelerated in 1995, when the general property grants were stopped and housing associations received the present value of the proposed grants as a result of the so-called Grossing and Balancing Operation (in Dutch: bruteringsoperatie). The government's main incentive was to enhance the managerial and administrative freedom of housing associations. With the disappearance of subsidies, the possibility to control the housing associations also decreased (Priemus 2010; Parlementaire Enquêtecommissie Woningcorporaties, 2014).

Housing associations were still allowed to borrow money against reduced interest from the Social Housing Guarantee Fund (in Dutch: Waarborgfonds Sociale Woningbouw, WSW), which is guaranteed by the state (Parlementaire Enquêtecommissie Woningcorporaties, 2014). Those reduced interest costs have saved the housing associations approximately 300 million euros per year (European Commission, 2009). More societal tasks were connected with housing associations, such as investments in the living environment and public space, the housing of elderly, and participation in the neighbourhood. Housing associations also expanded their housing stock to more expensive houses for rentals and sales. Consequently, the state aid provided by guarantee fund borrowings was spent on other activities than intended (Min. BZK, 2015b). Hence, this construction was not in accordance with the state aid regulations set by the European Union (European Commission, 2009). The European Commission believed that governmental money should be provided for services of general economic interest only. Besides, housing associations were able to crowd out commercial investors as their commercial activities were financed by state-backed loans (Financial Times, 2014). In December 2009, after a process of negotiations, the European Commission agreed that Dutch housing associations should allocate at least 90 percent of their housing stock to households with a maximum income of €33,000 in order to receive state aid (European Commission, 2009; Priemus & Gruis, 2011). Before the implementation, only 75 percent of the social housing stock was allocated to the target group (Hoekstra, 2017).

The increased independence for the Dutch social rental sector resulted in an expansion of their activities, following several unwanted side effects. Housing associations began to take more financial risks (Priemus, 2013; Parlementaire Enquêtecommissie Woningcorporaties, 2014). The marketization of the sector was also visible in the increasing salaries of directors (Hoekstra, 2017). During 2000s and 2010s, many cases of mismanagement and fraud were reported, causing big budget deficits. In most of the cases, irresponsible choices had been made, causing millions of budget deficits (Van Weezel, 2014). The housing association Woonbron Rotterdam planned to change a cruise ship to a location for rental houses, however the total costs of €250 million exceeded the initial budget of €25 million ten times. When building student housing in Maastricht, housing association Servatius overrun the budget with €80 million, and eventually cancelled the building. Eventually, the €2.1 billion derivatives fraud committed at Vestia resulted in the parliamentary enquiry in 2013 (Van Weezel, 2014).

The parliamentary enquiry committee concluded that the *moral compass* of directors was missing, risk awareness was insufficient, boundaries weren't clear, the governance and especially the supervision systems were insufficiently developed (Parlementaire Enquêtecommissie Woningcorporaties, 2014; Hoekstra, 2017). Moreover, they concluded that the Dutch public housing sector lacked internal risk management and risk signalling. The internal control system was insufficient. The director of the board turned out to have too much influence while the supervisory board lacked power (Gruis, Gerrichhuizen, Koolma & Van der Schaar, 2014). The oversight by the supervisory board, the auditors, the regulatory agencies *Waarborgfonds Woningbouw* (WSW) and the *Centraal Fonds voor de Volkshuisvesting* (CFV) was also lacking. This resulted in reputational damage for the whole sector, and housing associations lost a large part of their legitimacy and credibility (Hoekstra, 2017). It became clear that the sector needed to be reformed and the corporations needed to be restricted to their main social task: housing people with a low income. In order to ensure the performance and the continuation of the social task, the parties agreed on incremental reforms (Min. BZK, 2019). This resulted in the new Housing act which is introduced in 2015.

2.2 New Housing Act

The main goal of the reformed regulations is to ensure the focus of housing associations on their main social task: building, renting out and managing of social housing intended for people who either have a low income, or cannot find appropriate housing due to other reasons (Min.

BZK, 2015b). The income limit will be determined annually by the government. However, certain groups of people who need additional care aren't limited by their income (Min. BZK, 2015b). The reforms had several other objectives. It should give more clarity about which activities are allowed to be undertaken with governmental money, and which aren't. It aims to safeguard the socially intended capital and it should prevent for market irregularities for commercial activities which aren't allowed with governmental money. The new rules should limit the financial risks. The position of municipalities and tenant's organizations will also benefit from the reforms because it will improve the democracy within this public task. After the parliamentary inquiry, it turned out that most of the incidents happened due to lack of internal control. Therefore, one of the objectives of the reforms was the improvement of internal and external supervisory. Lastly, the renewed housing rule intends to give a regulatory baseline for housing associations (Min. BZK, 2015b).

As mentioned before, many incidents in the sector happened due to bad internal control and risk management. Therefore, the governance and the supervision has been reformed as well (Hoekstra, 2017). In order to increase the transparency, the new regulations requires additional internal and external monitoring and reporting regarding the risk assessment of housing associations. Housing associations need to disclose (and submit) multiple reports for the purpose of better monitoring possibilities for the government, municipalities, tenant's organizations and other stakeholders. Annually required reports are the financial statements, annual report, a report concerning the performance of public housing, accountability information and the prospective information concerning the intended plans for upcoming year (Min. BZK, 2019). Investments of more than 3 million euro should be approved by the Supervisory Board. Members of the Board of Directors and the Supervisory board should do a suitability and reliability test which should be approved by the new regulatory agency, Authority Housing Associations (Min. BZK, 2015a). The Authority Housing Associations (AW) is the new social housing authority, tied to the central government. Their statutory duty is to supervise housing associations on the following subjects: governance, integrity, financial management, safeguarding social intended capital, solvability, liquidity, quality of financial risk management and its compensation (Min. BZK, 2019). Besides, it assesses whether the associations' financial policies are in line with the European competition policy (Priemus, 2013). The protocol for auditors has also been reformed following the renewed regulations. However, according to housing associations, the updated audit protocol doesn't contribute to better supervision as it focuses on small details and result in higher administrative costs and

audit fees (Min. BZK, 2019). Tenants and municipalities have gained influence over associations' strategies and activities though the so-called performance agreements. Nowadays, almost every agreement between the association and the municipality is also signed by the tenant's organization (Min. BZK, 2019). Those agreements mostly include statements about the new construction, demolition, affordability and quality of rental houses and the investment to improve quality of the life in neighbourhoods and in sustainability. However, the evaluation report of the reformed housing act concluded that there are still improvements needed for the optimal efficiency, mostly regarding the knowledge of tenants (Min. BZK, 2019).

2.3 Stakeholders

Collier (2005) indicates that there are three groups of major stakeholders for housing associations: the government, debt financiers and tenants. The first group, the government, includes the central and local government, which are, according to the Housing Act, both responsible for the social housing policy (Collier, 2005; Min. BZK, 2019). They are seen as the regulator (Collier, 2005). Schuiling & Van der Veer (2004) argue that the central and local government in the Netherlands don't build houses themselves, therefore they are dependent on housing associations. However, housing associations are in return dependent on the central and local government for the affordable acquisition of land. The municipalities should set a clear *housing vision* including its expectations of housing associations, subsequently this is included in the housing associations' forecasts, resulting in performance agreements. Besides, the government has the possibility to intervene when housing associations appear to underperform (Priemus, 2013).

The second group of stakeholders which Collier (2005) defines are lenders who provide the majority of debt finance. Their main concern is to make sure that housing associations can meet their financial obligations. The guarantee fund, WSW, provides guarantees to financiers to ensure that housing associations can borrow money against low interest rates. Both Standard & Poor and Moody's assigned their highest ratings (AAA and Aaa) to the WSW's guarantees (Moody's, 2019; S&P Global, 2019). The WSW is not an official oversight body appointed by the public law, however they do have essential supervisory activities. When a housing association wants to borrow money, the WSW gathers information, performs a creditworthiness check and decides the scope of the guarantee. The parliamentary inquiry concluded that the

activities of WSW regarding risk assessment and risk management were insufficient, as they should have been more sceptical (Parlementaire Enquêtecommissie Woningcorporaties, 2014).

The last group includes the tenants of housing associations. Priemus (2013) defines the target group for social housing as low-income households, ethnic minorities, physically and/or mentally disabled people, asylum seekers and immigrants. In 2018, 59% of the tenants lived in an one-person households, 17% lived as a couple, 11% had a family household and 4% as a single parent family (AW, 2019a). Only 17% of the tenants lived in a household with three or more persons (AW, 2019b). Tenants are organized in the tenant's organisation, which have multiple rights, such as: right of information, consultation right and right to give advice (Rijksoverheid, 2020). According to Collier (2005), the regulator should safeguard their rights. Other parties which are highly involved in the housing sector are organisations for housing associations (Aedes, Woonbond, VTW) and other societal institutions such as healthcare, educational or well-being organizations (De Jong, 2012).

2.4 Risk reporting of housing associations

The incidents in the social housing sector indicated the existence of information asymmetry between the firm and its stakeholders, a lack of internal control, and the insufficient capability of the auditors to overcome the information gap (Parlementaire Enquêtecommissie Woningcorporaties, 2014). When it became clear that directors of housing associations might had other goals and interest than the firm's stakeholders, the discussion of corporate governance within the sector increased (Bosch, 2016). During the parliamentary enquiry, the governance discussion is categorized in internal governance and external governance. The internal governance includes the steering framework within individual housing associations. The external governance includes the relationship of the firm with its external stakeholders, such as the tenants, the state and oversight parties (Parlementaire Enquêtecommissie Woningcorporaties, 2014).

Reporting requirements
This study will focus on the risk reporting behaviour of Dutch housing associations, the external governance, therefore it is important to discuss the relevant reporting requirements and its developments. Multiple institutions require certain elements which should be disclosed in the

annual report. The different regulations are the general Dutch law regarding annual reports (art.2:391), Dutch law regarding the Housing Act, the Dutch Reporting Standards (especially RJ 645: Housing Associations), standards set by the watchdog, Authority Housing Associations, and the Governance Code provided by Aedes.

In the Dutch law (art.2:391 lid 1 BW), the following requirement is given '*The board report should give a description of the main risks and uncertainties which the firm faces*'. It states when the firm has any financial instruments used to mitigate risks, these also should be disclosed (art. 2:391 lid 3 BW). RJ 645.402 mentions that the Housing Act (art. 36) states that housing associations also required to disclose a board report, which should be conform the prescriptions of article 2:391 BW. In RJ400 regarding the board report, the disclosing requirements are further specified. First, it emphasizes that only the most important risks and uncertainties should be disclosed (RJ400.110a). Secondly, it defines uncertainty as the results of a (partial) lack of information or knowledge about an event, its effects or the chances it would occur. Risks are defined as the effects of uncertainty on the completion of targets. Besides, it discusses the most important categories concerning risks, as here defined, strategy, operations, financial position, legislation and regulations (RJ400.110b). Lastly, in RJ400.110c, the depth of the description is discussed. The disclosure should include the expected impact of a risk and the prevention of it. Besides, the narrative should describe which risks made impact last year. It should also discuss the general risk management, and, if any, the improvements made.

In 2007, the Governance Code Housing Associations was introduced by Aedes. The Governance Code contains non-mandatory rules and recommendations, however housing associations have to explain any deviations from the policy. The guideline also discusses the reporting requirements regarding risk management. It states that the board should be aware of the risks associated with the activities of the housing associations and should apply transparent risk management. Besides, the association should disclose this in the annual report. In any case, this concerns the commissioning of the corporation, agreements on contracts, partnerships and/or large transactions with third parties (Aedes, 2020a). In Aedes' guide for board reports (2020b), it emphasizes the relevance of including a risk and continuity paragraph, as an example it strongly recommends discussing the expected effects of the corona crisis and the measures taken.

The audit protocol, provided by the Authority Housing Associations, doesn't include any additional requirements expect that it emphasizes the use of RJ645. However, the Dutch professional organization for auditor, NBA, concluded that auditors had increasing attention to the board report, which includes the risk disclosure (NBA, 2017). The Authority Housing Associations visits every housing association once every four year, in this visit the governance is assessed. The governance assessment includes bankruptcy risk, risk realization policy, efficiency, achievement of goals, legality and integrity (AW, 2017).

Reporting behaviour

In recent years, housing organizations are more concerned with the accountability to their stakeholders about the firm's strategy, governance and performance (NBA, 2017). Housing associations, members of the supervisory boards, and municipalities find that the increased disclosures since the new housing act do attribute to the understanding among stakeholders (Min. BZK, 2019). However, the main downside of the increased reporting requirements is the decreased readability among stakeholders as the information is too specialised (Min. BZK, 2019). The increased reporting requirements bring more administrative pressure. The SIRA estimated the increase of costs €19.3 euro million annually due to increased disclosures (Min. BZK, 2019). The association of members of the supervisory board of housing associations, VTW, analysed the content of the risk paragraph. On average the risk disclosure contains nine risks, mostly regarding legislation and regulation, the increase of vulnerable people as tenants, the increase of building and development costs and the scarcity of construction sites and contractors (VTW, 2018). RJ400.110c clearly states that the risks which made an impact this year should be discussed, however VTW found that only 18% of the risk disclosures analysed include such information. Besides, VTW argues that larger housing associations were more likely to discuss the general risk culture and the application of soft controls than smaller housing associations.

2.5 Summary

The parliamentary inquiry in 2014 showed that the internal and external monitoring of housing associations was insufficient. However, the central and local government still had to make sure that the housing associations were fulfilling their social task, housing the disadvantaged. In order to be possible to monitor housing associations more extensively, the new housing act

included many additional reporting requirements to increase the transparency. Therefore, housing associations need to disclose more risk information.

Besides, the most important stakeholders, the local government and tenant's organizations, had more influence due to the performance agreements. However, the increasing reporting requirements also lead to more specialised information being disclosed. Therefore, housing associations argue that the input of tenants could be more useful if they had more knowledge (Min. BZK, 2019). In return, tenants argue that the understandability changed for the worse.

3 Literature review

In the previous section, the different stakeholders are discussed. In 1983, Freeman & Reed introduced the stakeholder model which states that there are groups to whom the organization is responsible other than stockholders. The stakeholder theory instead describes that there are other parties involved, including customers, financiers, governmental bodies, employees, trade associations and trade unions. The various stakeholders have different needs, form of influence, degree of influence and the relationship between the firm and a stakeholder can change over time (Friedman & Miles, 2002). The stakeholder theory suggests that a company's performance lies in satisfying all its stakeholders (Freeman & Reed, 1983). Consequently, Donaldson & Preston (1995) argue that the stakeholder theory has a managerial behaviour/character as it influences the attitudes, structures and practices of management. Therefore, this section will discuss the different theories following the existence and importance of stakeholders. Section 3.1 describes corporate governance, and its implementation into the stakeholder model by Freeman & Reed (1983). Section 3.2 explains the risk management of organizations and section 3.3 continues with the explanation of risk disclosure behaviour. Section 3.4 concludes the literature review and builds on the two hypotheses.

3.1 Corporate Governance

The origin of corporate governance literature is mostly based on the theoretical framework described by Jensen & Meckling (1976) and Fama & Jensen (1983), also known as the agency theory. They define the agency relationship as *'a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent' (p. 308)*. They state that both parties will maximize their utility, which will probably lead to the claim that the agent sometimes will act in their interest, which not always benefits the principal (Jensen & Meckling, 1976). This relationship can be used for different settings, yet the most frequently used context is the organizational setting (Eisenhardt, 1989). Jensen & Meckling (1976) continue that the theory is not limited to firms with equity, but it exists for every firm with contractual relations with parties as employees, suppliers, customers and creditors. First, the successive literature has been concerned with the relationship between managers and stockholders, however, later studies also applied the relationship between managers and other stakeholders (Freeman & Reed, 1983, Hill & Jones, 1992; Jegers, 2009). In short, the agency theory is also applicable to

non-profit organizations (Jensen & Meckling, 1976; Jegers, 2009). Further, Fama & Jensen (1983) discuss that the board of directors of non-profit organizations have the responsibility to guarantee that the contributions will be done in the donors' best interest and won't be expropriated. In addition, Jegers (2009) outlines that every stakeholder can act as a principal in a principal-agent theory of non-profit organizations, as example the government and the subsidized organization. Conversely, Glaeser (2002) states that the relationship between management and its stakeholders is less pronounced, because non-profit managers do not inherently optimize the objectives of either investors, donors or society as a whole. Given these points, it is less clear what drives the decisions of non-profit organizations and boards (Glaeser, 2002; Keating & Frumkin, 2003).

The information asymmetry plays an important role when the agent and principal have different levels of information (Hall, 2011). The agent benefits from the insider knowledge, because as an insider they have the means to filter or manipulate the disclosed information to stakeholders (Smith & Watts, 1983; Hill & Jones, 1992). Hence, information asymmetry can affect the relationship between the principal and agent by two problems. First, the potential agent can conceal negative but relevant information, resulting to adverse selection. Second, when unobserved, the agent may act not in the principal's agent, also known as moral hazard (Jegers, 2009). In order to restrict the agent from maximizing his interest, the principal should make some costs, also known as agency costs. These costs are the sum of monitoring cost, bonding cost and the residual loss (Jensen & Meckling, 1976). For this reason, Van Puyvelde et al. (2012) gives two options to make sure the agent works in the best interest of the principal: the principal should monitor the agents or give incentives to the agent to act in the best interest of the principal. This last option is not suitable for the non-profit sector as performance cannot be measured reliable and variable payments (shares) are not possible (Van Puyvelde et al., 2012). Accordingly, stakeholders use accounting information to monitor financial performance (Jegers, 2002). The monitoring and oversight are still difficult to organise for the non-profit sector due to the absence of commonly accepted indicators of performance (Miller, 2002)

In consequence, corporate governance is designed to deal with the different aspects of the agency theory, such as the information asymmetry, uncertainty and the risk preference between the principal and the agent (Schleifer & Vishny, 1996; Picou & Rubach, 2006). Picou & Rubach (2006) argue that the corporate governance guidelines are mechanisms to ensure the alignment of the interests of the board of directors and the suppliers of capital, in order to reduce agency

costs. Following Merchant and Van der Stede (2007), corporate governance controls the behaviour of top management, by which all employees are indirectly controlled. Merchant & Van der Stede (2007, p.577) include other stakeholders in their definition of corporate governance "*the sets of mechanisms and processes that help ensure that companies are directed and managed to create value for their owners while concurrently fulfilling responsibilities to other stakeholders (e.g. employees, suppliers, society at large)*" This paper will use the definition of Merchant & Van der Stede (2007) as it confirms the importance of stakeholders. Freeman & Reed (1983) combine corporate governance with the stakeholder model, since they also argue that organizations are responsible for stockholders as well as other stakeholders.

3.2 Risk management

Following the agency theory, management and stakeholders have different preferences regarding the risk appetite (Eisenhardt, 1989). Previous literature argues that among stakeholders the risk preferences also differ as they have various needs, influence and degrees of influence (Friedman & Miles, 2002). Likewise, Kleffner, Lee & McGrannon (2003) concludes that risk management plays an important role in corporate governance. Risk is originally defined as '*the possibility that an event will occur and adversely affect the achievement of objectives*' (COSO, 2017). Nowadays, both negative and positive sides of the risk are acknowledged (Linsley & Shrives, 2006). The Dutch guidelines for annual reporting state that risk comprises the risk on losses but also the risk of gains (RJ 940). Considering the different preferences, risk management should be applied. Solomon et al. (2000) demonstrates that risk management contributes to the maximization of profit and limits the probability of financial failure. In addition, Cabedo & Tirado (2004) argue that risk information can help for change management, lowering the cost of capital and enhances long term vision. In their risk management guideline, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) defines enterprise risk management as "*a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.*" (COSO, 2017). This includes aligning the entity's risk preferences and strategy, enhancing risk response decisions, reducing operational surprises and losses, identifying and managing multiple and cross-enterprise risks, seizing opportunities and improving deployment of capital (COSO, 2017).

3.3 Risk disclosure

The demand for disclosure and financial reporting originates from information asymmetry and the agency relationship between the managers and stakeholders of the firm as the stakeholders need information to limit adverse selection and agency costs (Healy & Palepu, 2001; Campbell et al., 2014). Hutton (2004) specifies that managers have more availability to information than outside stakeholders, who are likely to not understand the underlying risks completely (Deumes, 2008). Linsley & Shrives (2006) and Dobler (2011) agree on the fact that risk disclosure will reduce the information asymmetry between the manager and stakeholders by providing the stakeholders information on the risks and risk management. Hence, different stakeholder groups demand by regulators for protection from information asymmetry (Bamber & McMeeking, 2016; Elshandidy et al., 2018). Consequently, the valuation of non-financial information, especially risk disclosure, by investors increased significantly in the recent years (Bozzolan & Miihkinen, 2019). Kravet & Muslu (2013) explain that the textual risk disclosures are different from other disclosures because they describe particularly the scope of future activities and other than the level of future activities. Prior accounting research regarding risk disclosure is categorised in three strands: content analysis of the disclosure, whether the disclosure is beneficial for stakeholders and the last strand studies which factors will influence the risk disclosure behaviour (Höring & Gründl, 2015).

Importance

The accounting theory indicates the existence of a significant information gap between firms and their stakeholders, especially regarding the entity's risks (Linsley & Shrives, 2006). As previously discussed, monitoring the firm is an important factor for non-profit organizations (Miller, 2002; Keating & Frumkin, 2003; Glaeser, 2012). In addition, Jegers (2009) states that the organization's principal, the stakeholders, will benefit from the financial statements as they can use it to monitor financial performance and it reduces uncertainty. Moreover, the increasing complexity of regulations, operations, and business strategies results in investors having difficulties with understanding the financial information (Beretta & Bozzolan, 2004). The main goal of mandatory risk disclosures is to inform investors and the markets (SEC, 2005). Disclosure is defined as "*any deliberate release of financial (and non-financial) information, whether numerical or qualitative, required or voluntary, or via formal or informal channels*" (Gibbins, Richardson & Waterhouse; 1990). Miihkinen (2012) describes risk disclosure as "*the information that describes firms' major risks and their expected economic impact on future*

performance". The risk disclosure represents 11% of the total words disclosed in the annual report (Campbell et al., 2014). Risk disclosure is beneficial for current and potential investors in two ways. First, more risk information decreases the risk of investors (Akerlof, 1970). In other words, risk information helps investors to determine the risk profile of a company and the market value (Beretta & Bozzolan, 2004). Second, the disclosure provides direct information to investors affecting the organization's future economic performance (Dobler, 2005; Hassan, 2014). Next to investors, Miihkinen (2012) adds that employees, customers and other stakeholders will benefit from risk disclosure. Different stakeholders need information to reduce adverse selection and agency costs (Bozzolan & Miihkinen, 2019). Additionally, Hassan (2014) argues that risk disclosure enables the company to improve risk management and risk signalling process.

Disclosure behaviour

One the one hand, managers are encouraged to disclose risks. In general, Healy & Palepu (2001) argue that financial reports and disclosures are "*potentially important for management to communicate firm performance and governance to outside investors*". Following Abraham & Cox (2007), managers will use (voluntary) risk disclosures to reduce agency cost, resulting in limited information asymmetry. Above all, managers' incentives to withhold bad news is offset by potential legal penalties (Filzen, 2015). Skinner (1994) finds as well that litigation risk motivates managers to disclose bad news earlier. On the other hand, there are different factors which obstruct managers in their risk disclosure. Abraham & Shrives (2014) argue that outside parties (e.g., competitors or pressure groups) may use the information in a harmful way. Hence, management weighs the costs and benefits of disclosure when deciding whether to disclosure a certain risk (Filzen, 2015). According to Verrechia's (2001) disclosure theory, in order to maximize their personal wealth, managers are likely to withhold bad news when there is a change that the negative outcome won't be realized. In other words, managers are likely to delay potential bad news disclosures, as they hope that the position of the firm will improve and the bad news disclosure won't even be necessary (Graham et al., 2015).

Usefulness

Overall, standard setters and academic literature agree on the fact that risk disclosures remain too general and contain insufficient information regarding the specific risks (Campbell & Slack, 2008; Höring & Gründl, 2011; Kravet & Muslu, 2013). The US financial regulatory agency, the SEC, expressed its concerns about the '*too broad and generic*' risk information, and

explained it should be '*more-targeted*' as they can be applied to any firm nowadays (CFO, 2010). In fact, the results of Abraham & Shrives (2014) document that managers are more likely to provide symbolic than substantive disclosures. On the other hand, the studies of Miihkinen (2012) and Campbell et al. (2014) find that certain risk disclosures do include firm-specific risk information. The problem with general disclosures is the fact that the information related to risks faced, the risk profile and the risk appetite is hard to obtain for stakeholders (Abraham & Shrives, 2014). The use is limited when the disclosures are non-specific or when they only describe the risk management policies (Linsley & Shrives, 2006). General risk disclosures may eventually distract from other useful information (Abraham & Shrives, 2011). Finally, disclosures could be ignored by the users of the financial statements as they are evaluated as unhelpful (Abraham & Shrives, 2014).

Regulations

Standard setters and regulatory authorities require increasing narratives to support the primarily quantitative financial statements. Especially after the recent financial crisis, the pressure to disclose information about the riskiness of the firm increased (Dobler et al., 2011; Heinle & Smith, 2017). According to Albring et al. (2016), the SEC's (regulatory authority in the U.S.) intent was to improve the form and the flow of disclosed firm-specific risk information. However, not all empirical risk-reporting studies do agree whether regulations are beneficial for risk reporting as overregulation may constrain on the flow of information (Marshall & Weetman, 2007).

Studies which promote the increasing regulations argue that regulations influence voluntary risk disclosure positively (Marshall & Weetman, 2002; Abraham & Cox, 2007). Firms with greater compliance to mandatory regulations are more likely to make voluntary risk narratives as well (Elshandidy et al., 2013). Dobler (2008) finds that even in high-regulated environments, managers still have motives to disclose more about the risk information. Mandatory and voluntary risk reporting are rather complementing than substituting each other (Elshandidy et al., 2018). Linsley & Shrives (2000) reason that firms already had the chance to disclosure voluntary risk information, yet only a few firms have done so. Along with these argumentations, the empirical studies of Höring & Gründle (2011), Miihkinen (2012) and Heinle & Smith (2017) found that the increased regulations resulted in the quality of risk disclosures for Finnish, U.S. and European firms.

On the other side, studies against highly regulated narratives argue that the regulations may result in 'boxticking' disclosure behaviour and 'boilerplate' language, which will crowd out the idiosyncrasies (Abraham & Cox, 2007). The results of Malafronte & Starita (2016) show that due to new regulations, European insurers concentrate on quantity rather than the quality of disclosures. Roulstone (1999) argue that the implementations of the risk disclosure regulations are still lacking in transparency and clarity. Furthermore, Filzen (2015) finds no evidence whether the regulations influence management to include potential negative outcomes in the risk narrative. The study of Solomon et al. (2000) documents that institutional investors don't prefer an environment with regulated risk disclosures. Deumes & Knechel (2008) state that in a low-regulated environment (in this study: the Netherlands), incentives for voluntary internal control reporting are more likely to exist.

3.4 Hypothesis development

Altogether, there is mixed evidence whether high or low regulated environments are more likely to result in more quality of risk disclosures. Miihkinen (2008) concludes that disclosure regulation is only one part of reducing information asymmetry, and other factors which could affect firms' transparency should be studies. Similarly, Elshandidy et al. (2013) argue that imperfect markets require some degree of mandatory risk disclosure to mitigate information asymmetry and to protect investors, however there will always remain incentives and disincentives for managers to disclosure information voluntarily. This results in the suggestion that risk disclosure is a function of regulation and management's motives linked to institutional and cultural environment and firm-specific factors (Dobler, 2011; Bozzolan & Miihkinen, 2019).

Following the governmental evaluation reports regarding the performance of Dutch housing associations (2019), it becomes clear that the tenant's organizations, one of the main stakeholders, still experience an information gap. Given the points, this study will test whether the reformed regulation did result in more informational disclosures. As different studies find that only the quantity increased due to additional regulations the first hypothesis is states as follows:

H1 The reformed housing act of 2015 caused an increased quantity of the disclosed risk information in the financial statements of Dutch housing associations.

Beretta & Bozzolan (2004) argue that the use of quantity as a proxy only is not sufficient, because the disclosure should present the management's view on the firm's situation and perspectives, therefore the quality should of the disclosure should depend on the quantity and on the richness of the information. In their widely used study 'Quality vs. Quantity' (2008) they find that the disclosure quality is more positively associated with the accuracy of earnings forecasts by financial analyst than the disclosed quantity. Additionally, Campbell & Slack (2008) and Abraham & Shrives (2007) argue that the quantity of risk disclosure doesn't tell anything about the usefulness of the information for users of the financial statements. This results in the following hypothesis:

H2 The reformed housing act of 2015 caused an increased quality of the disclosed risk information in the financial statements of Dutch housing associations.

Both hypotheses will be tested only one-sided as there is a clear direction in which the relation should behave.

As previously described, Dobler (2011) and Bozzolan & Miihkinen (2019) argue that risk disclosure is not only driven by regulations and management's motives but also linked to the environment and firm-specific factors. Examples of environmental factor which are used in prior literature are industry-type (Beretta & Bozzolan, 2004; Hassan, 2014), country-level (Malafronte et al., 2016), the financial crisis (Elbannan & Elbannan, 2015; Malafronte & Starita, 2016) and the adoption of IFRS (Taylor, Tower & Neilson, 2010). However, the most consensus in prior literature is found in the influence of firm-specific factors. Most empirical studies confirm a positive relation between size and the level of disclosure (Linsley & Shrives, 2006; Abraham & Cox, 2007; Beretta & Bozzolan, 2008; Miihkinen, 2012; Malafronte & Starita, 2016; Elshandidy et al., 2018). Following the signalling theory, larger organizations are better able to distribute firm information due to greater dispositions and capacity (Elshandidy & Neri, 2015, Abraham & Shrives, 2014). Besides, larger firms are more likely to be able to disclose information to stakeholders at a reasonable cost (Elshandidy & Neri, 2015). Alexander & Weiner (1998) states that the size effect is also pronounced for non-profit organizations, as larger non-profits are more likely to structure governance along corporate lines. Another important firm-specific factor is the profitability. Elbannen & Elbannen (2015) and Miihkinen (2012) find that the profitability influences the risk disclosures. The last firm-specific factor is the leverage of the firm. Hassan (2014), Elshandidy et al. (2013) and Taylor et al. (2010) find that the leverage influences the risk disclosure behaviour. Campbell et al. (2014) and Kravet &

Muslu (2013) show that firms with high leverage are more likely to discuss more debt-risk factors. While Lajili and Zeéghal (2005) and Linsley & Shrives (2006) don't find a significant association.

Other than control variables used in prior empirical studies, this study will use control variables distinctive for the Dutch social housing sector. Elshandidy et al. (2018) describes how risk reporting regulations may be more beneficial in certain more complex circumstances. Hence, certain industry specific variables are expected to increase the risk disclosures. First, housing associations had the choice to separate their social and commercial activities in three options: legal separation, mandatory separation and a lighter regime. The legal separation entails the separation of activities among different entities. The commercial activities will be located to the subsidiary, which is totally owned (100%) owned by the housing association. Only the subsidiary is allowed to perform commercial activities. When using the administrative separation, the housing association differentiates the balance sheet and the income statement per social or commercial domain. The less strict regime only applies for smaller housing associations. It isn't mandatory for them to separate, legal or administrative, the activities. However, they should differentiate the revenues and costs from the social and commercial activities in their bookkeeping (Min. BZK, 2018). The governmental evaluation report of the implementation of the new housing act (Min. BZK, 2019), states that multiple involved parties didn't see any improvements in risk management and safeguarding the socially intended capital due to the mandatory separation between the activities with a social and a commercial purpose. Additionally, housing associations encounter the most effective results using the legal separation whereas municipalities and tenant's organizations favoured the administrative separation. The separation resulted in two beneficial unintentional side effects: stakeholders perceived more structured transparency and housing associations invested in the professionalization of their business and business reports (Min. BZK, 2018).

The second industry specific control variable has to do with the newly implemented regulatory agency, the AW. The AW is able to impose sanctions to housing associations in case they don't focus on their core activities or when there is financial mismanagement. The authority imposed 36 warnings since the foundation in 2015 (AW, 2019b). In addition, they can intensify the supervision. End 2019, five housing associations are placed under stricter supervision. The last industry specific variable indicates whether the specific firm borrows money from the industry-guaranteed fund, the WSW. The main goal of WSW is to provide housing associations loans

against the lowest costs possible so that housing associations can realize their activities. As they guarantee the loans, they also evaluate the separation between the social and commercial housing stock, because it influences the risks within the firms. In order to optimize their job, it is important that the amount of legal separations are less as possible. The legal separation will cause increased risk for the commercial part of the firm. Therefore, they promote the administrative separation (Min. BZK, 2019)

4 Research Design

In this section, the research design will be explained. This will be divided in three section. The first section describes the sample selection process. The second section describes the method for analysis, which includes a brief discussion of content analysis and the operationalization of the construct quality. Finally, the third section will provide the variable measurement, sample composition and the descriptive statistics.

4.1 Sample

In the end of 2018, the total population of Dutch housing associations consisted of 312 housing associations. The execution of a content analysis is time consuming. Therefore, a random sample is selected. The sample is obtained using the following steps. The sample is selected using the '*verantwoordingsinformatie woningcorporaties*' database of the Dutch government regarding the accountability information of housing associations, which is mandatory for housing associations to submit (Min. BZK, 2020). The data of 2018 is used to prevent selecting firms which are merged or acquired by other housing associations. Table 1 provides the criteria of the sample selection, and its results. The selection resulted in 70 randomly chosen firms, which represent 420 firm-year observations. Of those 70 firms, their annual reports of 2013 until 2018 are manually searched on their websites, and when they were not available, the firm was contacted and asked to share the annual reports. During the manually search, when it turned out that the firm in question was a result of a merger during the sample period, it was removed from the selection sample, in total this was the case with four companies (hence 24 firm-year observations). Another 48 firm-year observation are removed from the sample, because the firms didn't provide the annual statements of that year. Following the collection of annual reports, the annual reports of 60 firms were retrieved, resulting in 348 firm-year observations. The annual reports are used to extract the risk disclosure. This will be discussed more extensively in the next section. Additionally, all observations with missing values are also excluded from the sample. This process yield a sample of 319 firm-year observations, which is in line with the minimal sample size given a 5% confidence (Krejcie & Morgan, 1970).

Selection criteria	Firms	Firm-year observations
Randomly selected firms	70	420
Less: firms lost due the result of a merge	(4)	(24)
Less: firms which didn't provide their annual reports (online and when contacted)	(6)	(48)
Intermediate sample of released annual reports	**60**	**348**
Less: firm-years with missing financial data	(2)	(29)
Final Sample	**58**	**319**

The table provides the criteria used for the sample selection, starting with the observations of 70 randomly selected firms over six years, 2013-2018. Due to mergers and unavailability of data, this declined to a sample of 319 firm-year observations.

Table 1. Sample selection

Subsequently, additional databases are used to gather the control variables. The Dutch government database is used to extract additional information about the firms, such as the total book value, equity, debt and whether the firm is borrowing money from the guarantee fund. The website of the regulatory agency, Authority Housing Associations, provides information about which firms are under stricter supervision.

4.2 Method for analysis

For both hypotheses the risk disclosure section of the financial statements is used. Linsley and Shrives (2006) describe the risk disclosure as the narrative which informs the reader about any opportunity or about any danger, threat or exposure that may impact the company in the future or already had impact the organization. Dobler (2008) states that regulations generally require two types of risk disclosure: detailed financial risk disclosure in the notes to the financial statements and a more comprehensive narrative in the management report. This is also the case in the Dutch institutional environment. As previously described, the Dutch regulator requires that board report should contain a description of the main risks and uncertainties which the firm faces. Prior literature particularly only studied the determinants of the risk descriptions within the management or board report as the regulations are less detailed, thus firms have the possibility to use their own interpretation. Additionally, the risks disclosed in the notes to the financial statements only discuss financial risks. In order to take all risks a firms faces in account and to be able to compare with other studies, the content analysis will be done on the risk section of the board report, mostly named as 'risk management', 'risk', 'risk analysis', 'risk paragraph' or 'most important risks'.

Content analysis

Both hypotheses require a form of content analysis. Risk disclosures mainly include non-financial and qualitative narratives, and content analysis will capture the volume and the extent of such disclosures (Laijili & Zeghal, 2005). According to Krippendorff (2004), content analysis is described as the research method which enhances making valid and replicable inferences from narratives in relation to the context. Content analysis is the most used method for measuring the quality of narratives in annual reports, however there are many different categories of content analysis (Elshandidy & Neri, 2015). To illustrate, Linsley & Shrives (2006) measure the quantity of risk disclosed in certain categories: financial, monetary, good or bad news, historic and forward-looking. In the same way, Abraham & Cox (2007) use the following categories: total, business, financial and internal control. In the case of Berreta & Bozzolan (2004), the words or phrases which include any density, depth or future plans are measured. The use of content analysis has increased due to machine-readable data (as example the structured submission of the 10-K in the U.S.) and the development of automated content analysis software which makes the content analysis less time consuming (Elshandidiy et al., 2018). Hope et al. (2016) use an automatically Named Entity Recognition technique, however this only works for English narratives, therefore this study will analyse the narratives manually. Krippendorff (2004), however, states that humans still have a better ability in understanding the meaning of certain words or phrases in a specific context. On the other side, human raters are prone to the researcher bias (Krippendorff, 2004).

Specificity

As previously mentioned, academic literature and standard setters criticize that many firm's disclosures include general risks and are too boilerplate which can be applied to any firm (Abraham & Cox, 2007; CFO, 2010). As nonspecific risk disclosure limits its usefulness, standard setters and researchers promote the disclosure of specific firm information (Abraham & Shrives, 2007; Kravet & Muslu, 2013). Consequently, literature tries to find research methods, certain content analysis, which measure the firm-specific risk factors of the disclosure.

The analysis method of Hope et al. (2016) measures the quality of risk disclosures by its specificity. Hope et al. (2016) argue that more precise disclosures enclose more information content while less precise information may result in more difficult information extraction, evaluation and verification for stakeholders. Additionally, they state that greater specificity will result in more precise information. They use "*the number of specific words or phrases*

conveying specific information relevant to the disclosing firm, divided by the number of total words in the risk-factor disclosure section (Item 1A)". Specific information contains more idiosyncratic details, in other words it includes more peculiar or individual information. There are seven categories of specific words: names of organizations, names of persons, names of locations, dates, times, money values (in euros), and quantitative values. In other words, specific names of organizations contain more information that words as 'firm' or 'stakeholder'. For example, "In the neighbourhood *Crooswijk*, we expect increasing nuisance problems caused by our vulnerable tenants upcoming *5 years*" contains more information than "increasing nuisance problems in neighbourhoods" (example derived from annual report Steadion 2018). The latter sentence is less relevant because it can be applied to many other housing associations. Appendix A provides several examples of the content analysis of risk-factor disclosures with high and low specificity.

In the conceptual framework of International Accounting Standards Board (2018), the quality of information is defined as a function of two fundamental characteristics (relevance and faithful representation) and four enhancing determinants (comparability, verifiability, timeliness and understandability). These factors are also considered in the measurement. First, the use of specific information contributes to the stakeholders' understanding of the relevance of the risk. Secondly, the use of precise information, such as names, values or times, will enhance the reliability as it is possible to check it. Schrand & Elliot (1998) argue that the use of quantitative values in risk disclosure improves the credibleness and makes it easier to verify afterwards. This is also the case when other idiosyncratic details are disclosed, such as names of organizations, persons or locations. This argument applies as well to the comparability and verifiability of the information. The timeliness of a certain risk will be more visible when more dates and times are given. Ryan (1997) argues that specific risk information should help investors to determine the current risks and the realization of past risks. Finally, the understandability, Miihkinen (2012) argues that only firm-specific risk information will mitigate the information asymmetry between managers and stakeholders.

4.3 Variable measurement

The independent variable, the implementation of the new housing act, will be measured through a dummy variable, REGULATION. The years before the implementation, thus the annual

reports of the years 2013 - 2014, will assigned a zero. The years after the implementation, the annual reports of the years 2015 - 2018 will be assigned as one. The annual report of 2015 will be included in the after-group as most of the measures were implemented in July 2015 (Min. BZK, 2015c). For the first hypothesis, the dependent variable is quantity. The advantage of measuring the quantity of the risk disclosure, rather than the quality, mostly measured as the length of the item, is the objectivity (Marston & Shrives, 1991; Dobler, 2011; Miihkinen, 2012). The quantity of the disclosed risk information will be measured using the logarithm of the total words used for the risk paragraph, in order to minimalize the effect of large outliers (Miihkinen, 2012). The number of words is used rather than the number of sentences because using sentences may result in dilution of risk related information (Beattie et al., 2004). In practice, risk disclosures contain many different graphs or tables which are hard to measure as a sentence. For the second hypothesis, the measurement of quality is defined as the total number of specific words or phrases conveying specific information divided by the total number of words. This ensures that it measures only the quality and not the quantity. The other variables, control variables, used in the study are as further specified in Appendix B. Some variables include firm-specific factors, such as the profit, debt, total book value. Other variables are specific for the Dutch housing association sector.

The previous steps, the sample selection and variable measurement, provide the following sample. Panel A of Table 2 describes the sample composition sorted by year. The sample is distributed evenly across year. The table shows that the length of the risk disclosure and the amount of specific words increases every year. However, the increase in the number of specific words is less pronounced. Therefore, the percentage of specific words used fluctuates over the years. Although 2018 provides the longest risk disclosures, the length does not drive the level of specificity. The following panels of Table 2 provide the different industry-specific determinants. In Panel B the sample composition is sorted by the way the organization separated their social and commercial activities. The sample is smaller as the separation is mandatory since 2017. The distribution of the sample is in line with the distribution of the population. The regulatory agency reported that in 2018, 201 organizations used an administrative separation and only three housing associations used the legal separation. In addition, 124 associations were allowed to use the easier regime as they had minimal commercial real estate property (Min. BZK, 2019). Panel C shows that of our sample only 10 firm-year observations aren't borrowing money from the industry guarantee fund. Panel D provides the sample sorted by firms which have tightened supervision by the Authority Housing Associations due to insufficient internal

control. It comprises 14 firm-year observations, which have the lowest specificity score over the sample.

	# Words	# Specific words	% Specificity	Observations
Panel A: Sorted by year				
2013	485.61	10.88	1.51	49
2014	551.80	10.76	1.68	50
2015	1005.17	15.54	1.77	54
2016	1156.33	18.39	1.71	54
2017	1236.88	19.97	1.62	57
2018	1320.11	20.56	1.47	55
Panel B: Sorted by separation				
Administrative	1357.19	21.55	1.52	83
Legal	1737.01	23.50	1.35	2
Light version	999.52	16.04	1.64	27
Panel C: Sorted by guarantee fund borrowings				
No	355.60	9.60	2.47	10
Yes	995.66	16.21	1.60	309
Panel D: Sorted by tightened supervision				
No	982.93	16.45	1.65	305
Yes	815.79	11.07	1.18	14

This table provides the overview of the sample composition sorted by different characteristics (n=319). It shows the total amount of words of the risk disclosure (# Words), the amount of specific words or phrases in the risk disclosure (# Specific words) and the percentage of specific words by the total words (% Specificity). Panel A provides the sample sorted by year, which indicates that that increase in total words is more pronounced that the increase in specific words. Panel B, C and D show specific characteristics for the Dutch social housing industry. Panel B shows the sample composition sorted by the way the housing associations have separated their social and commercial activities. Panel C provides an overview of the firms which do borrow money from the guarantee fund (Yes), and the firms which don't (No). Panel D illustrates the differences between the firms which encounter tightened supervision (Yes), and the firm which don't (No).

Table 2. Sample composition

The hypotheses will be tested using a cross-sectional multiple regression with numerous controls motivated by prior research or by reports of the Dutch standard setter. The regression models are estimated as follows:

$$Quantity = \beta + \beta_1 REGULATION + \beta_2 Size + \beta_3 ROA - \beta_4 Leverage$$
$$+ \beta_5 SeparationAdmin + \beta_5 SeparationLegal + \beta_6 Dwsw + \beta_7 Daw$$
$$+ Time\ Fixed\ Effects + \varepsilon$$

$$Quality = \beta + \beta_1 REGULATION + \beta_2 Size + \beta_3 ROA - \beta_4 Leverage$$
$$+ \beta_5 SeparationAdmin + \beta_5 SeparationLegal + \beta_6 Dwsw + \beta_7 Daw$$
$$+ Time\ Fixed\ Effects + \varepsilon$$

Where regulation is the dummy variable of the regulations, with a value of 0 before the implementation and 1 after the implementation. Size, roa and the leverage are firm-factor control variables, where Separation, Dwsw, Daw are industry-specific.

5 Results

The following section provides the results and the discussion. In the first section, the model assumption and the correlation coefficients will be discussed. The second and third section will provide the results regarding the hypotheses. Finally, the last section will discuss the results and compares it with prior literature.

5.1 Correlation analysis

In order to be able to make inferences about the relation between the variables using a regression model, it is necessary to test whether the regression model assumptions hold. Appendix C provides the results of the different tests. First, in order to ensure that the linear regression is suitable for examining the sample, it is important to test whether the data set is normally distributed (Nieuwenhuis, 2010). Appendix C shows the visual overview of the different variables using histograms. Secondly, the distribution will be tested using the Shapiro Wilk test for each variable. The visual overview and Table 7 in Appendix C indicate that most of the variables do not follow a normal distribution, as most of the P-values are below 0.5. However, the sample size is large enough to apply the central limit theory. This theory states the sample with more than 30 observations will still follow a normal distribution, irrespective of the non-normality (Nieuwenhuis, 2010). In order to use the variables for the linear regression model in the next sections, there should not be multicollinearity between the variables (Nieuwenhuis, 2010). In other words, the different variables shouldn't be linearly related to each other. In that case, it becomes more difficult to draw conclusions because the beta estimates become less reliable. In order to test the multicollinearity among the variables, the variance inflation factor (VIF) is used. In the literature, a VIF value higher than 10.00 is considered as a threat of multicollinearity. Table 8 in Appendix C provides the results and it indicates that there is no threat of multicollinearity as the highest individual value is 2.16 and the mean value is 1.57. These results indicate that it is possible to use the data set in the regression analysis.

Table 3 provides the descriptive statistics for the variables used in this study. The mean length of the risk disclosure is 975 words, however the sample ranges between a non-existence risk disclosure and one of 3,596 words. The mean for the risk disclosure quality is 1.63. This indicates that, on average the risk disclosure of firms include approximately 2 words or phrases describing specific idiosyncratic information. Hope et al. (2016) find a mean score of specificity

of 5.4%, hence their finding is much higher. However, they exclude stop-words and therefore the amount specific words compared to the amount of total words is higher. The average size of the housing corporation expressed in number of rental units is 10,690. The biggest housing association in the sample is Vestia in 2013, which had 95,997 rental units at the time. The smallest housing association in the sample only has 170 rental units.

	Mean	Std	Min	Max	P25	Median	P75	N
Disclosure indicators								
Quantity	975.53	725.62	0	3596	400	885	1470	319
# Specific words	16.21	16.91	0	124	4	12	21	319
Quality	1.63	1.22	0	7.50	0.83	1.46	2.20	319
Industry specific indicators								
# rental units	10,690	14,812	170	95,997	2236	6480	12650	319
Firm-specific indicators								
Profit before tax	61.1*	183*	-344*	1390*	0.20*	7.10*	55*	319
Equity	560*	1030*	1.11*	9260*	46*	240*	690*	319
Book value	1000*	1660*	9.22*	11200*	146*	515*	1100*	319
Debt	441*	904*	0.42*	6950*	62*	209*	484*	319
ROA	.04	.062	-.138	.508	0.01	0.04	0.07	319
Leverage	.477	.236	0.027	.999	0.29	0.42	0.66	319

* indicated value x 1,000,000

This table provides the descriptive statistics for the different variables used in the study, notably mean, standard deviation, minimal value, maximal value and number of observations. The definition and measurement of the variables is provided in Appendix A. Risk disclosure narratives are collected from 2013 to 2018. All variables are measured at the end of the year unless defined otherwise.

Table 3. Descriptive statistics

This study particularly focuses on the impact of the regulation in 2015, however it is interesting to see whether there are other influences for the quantity and quality of risk disclosures, especially industry specific influences. Table 4 provides the correlation coefficients for the multiple variables considered interesting. The table shows that the quantity of risk disclosure is positively associated with the regulation, size, profitability and the guarantee fund, while it is negatively associated with the leverage and separation of activities the firm. The quality of the risk disclosure is only significantly associated with the guarantee fund. The amount of specific words is highly correlated to the length of the risk disclosure, which is in line with the expectations. However, the quality per 100 words is not correlated with the length of the narrative. Prior literature finds mixed evidence about the correlation between risk disclosure quantity and quality. The correlation results of this study are in line with the findings of Berretta & Bozzolan (2008) who state that the quality and quantity of the risk disclosure are not associated. On the other hand, Miihkinen (2012) and Bozzolan & Miihkinen (2019) find that the quantity is one the main drives of quality. Another notable variable is size, which is the most agreed variable in prior literature. Table 4 indicates that besides the quantity of the risk

disclosure, the size also correlates with the industry-specific factors, WSW and AW. The first means that the firm size is associated with whether the firm borrows money from the guarantee fund. In other words, housing associations which borrow money are larger, which is logic. Secondly, larger firms are more likely to encounter more stricter supervision by the regulatory agency. This is in interest of the public as larger firms could make more damage in case of mismanagement or bankruptcy. The regulation variable is significantly correlated with the size, ROA and leverage, which is in line with the expectations. The new regulations also introduced other valuation models for real estate of housing associations, which lead to the increase of fixed assets while the debt remained the same.

	Quantity	Spec Words	Quality	Regulation	Size	ROA	Leverage	Separation	WSW	AW
Quantity	1									
SpecWords	.756***	1								
Quality	.039	.447***	1							
Regulation	.423***	.214***	.016	1						
Size	.354***	.208***	-.096	.186***	1					
ROA	.198***	.039	-.027	.480***	.220***	1				
Leverage	-.27***	-.180***	-.070	-.552***	-.204***	-.461***	1			
Separation	-.216**	-.134	.062	-	-.700***	-.240***	-.148*	1		
WSW	.154***	.070	-.124**	-.043	.234***	-.090*	.237***	-.337***	1	
AW	-.047	-.065	-.078	.011	.172***	-.012	.146**	.076	.039	1

Correlation coefficients between the risk disclosure quantity and quality and the different incentives to disclose risk information (n=319).

t-statistics are in brackets. ***, **, * indicate significance at the 1, 5, and 10 % levels respectively (two-tailed)

Table 4. Correlation coefficients

5.2 Impact of the regulation on quantity

Table 5 provides the results of two regressions regarding the regulation and the length of a risk disclosure. The first model (1) conducts a regression without any control variables but with the year fixed effects. In the second model (2), the control variables as discussed in previous sections are included. The adjusted R-square in Model 1 is equal to 18,41%, whereas the adjusted R-square of model 2 equals 26,72%. In other words, the explanatory power of Model 2 is higher than Model 1. Both models are significant as the p-value for both models is 0.000.

The impact of the regulation is in both models significantly positive. However, the coefficient is less pronounced in the first model. This means that after the introduction of the regulation, the average risk disclosure included 604.53/791.7 more words than before. Following these results, the null hypothesis, stating there is no difference in quantity, can be rejected. The reformed housing act of 2015 did cause an increase of the length of the disclosed risk

information in the financial statements of Dutch housing associations. In Model 2, the size and the AW variables are also significant at the 5% level. The coefficient of size is 132,18, however this includes a log transformation. This means that when the book value of the firms increases with 1 euro, on average, the size of the risk disclosure increases with log(132.18), equals 1.69.

	Expected sign	(1)		(2)	
		Coefficient	P-value	Coefficients	P-value
Intercept		551.8	0.000	-2452.02	0.000
Regulation	+	604.53	0.000	791.7	0.000
Other incentives					
Size	+			132.18	0.000
ROA	-			-1163.42	0.155
Leverage	+			99.40	0.668
Separation					
Admin	+			-2.68	0.986
Legal	+			285.68	0.537
WSW	+			400.57	0.071
AW	+			-374.49	0.039
Time fixed effects		Yes		Yes	
Model F-value		15.35		10.66	
Prob > F		0.000		0.000	
Adj. R-square		0.1841		0.2672	
N		319		319	

This table provides the results for the regression between regulation and the risk disclosure quantity. The definitions of the variables is given in Appendix B. Model 1 only tests the impact of regulation on the quantity of the disclosure using time fixed effects (in years), where Model 2 also includes other reporting incentives derived from prior empirical literature and governmental reports.

Table 5. Regression results for the different quantity incentives

5.3 Impact of the regulation on quality

In the next table, Table 6, the results of the second hypothesis are provided. Model 3 and 4 show the regression result with the absolute number of specific words in the disclosed risk narrative. Model 5 and 6 show the results using the relative number of specific words scaled by the total words of the risk disclosure. All the models include year fixed effects. The table indicates that the models using the absolute number results in a more pronounced model, as the adjusted R-square is higher, and models are more significant. The adjusted R-squared is even negative for model 5, which means that the explanatory variables are insignificant. In Model 6, none of the different variables is significant expect the intercept, as the minimal individual p-value is 12.1% where it should be less than 5%. Therefore, the Model 5 and 6 won't be used for any further analysis. In other words, it isn't possible to make inferences about the relative quality per 100 words of risk disclosure. Nevertheless, Model 3 and 4 provide evidence for the

fact that the average risk disclosure contains more specific information after the implementation of the regulation than before. For both models the coefficient of regulation is positive (7.63 and 10.20) and significant. These results indicate that the average risk disclosure contains 8 or 10 more specific words or phrases than before the implementation of the regulation. Therefore, the alternative hypothesis H2 can be accepted, as the total quality of the risk disclosure did increase. However, it should be noted that the average quality per 100 words didn't change significantly.

	Expected sign	(3)		(4)		(5)		(6)	
		Coefficient	P	Coefficient	P	Coefficient	P	Coefficient	P
Intercept		10.76	0.000	-27.69	0.065	0.0168	0.000	0.0351	0.002
Regulation	+	7.63	0.020	10.20	0.046	0.0003	0.916	-0.0044	0.240
Other incentives									
Size	+			1.96	0.008			-0.0003	0.493
ROA	-			-52.22	0.015			-0.0113	0.480
Leverage	+			-3.33	0.668			-0.0071	0.121
Separation									
Admin	+			1.82	0.655			0.0011	0.725
Legal	+			-0.95	0.938			-0.0022	0.809
WSW	+			3.22	0.579			-0.0063	0.150
AW	+			-7.50	0.114			-0.0028	0.427
Time fixed effects		Yes		Yes		Yes		Yes	
Model F-value		3.64		3.11		0.47		1	
Prob > F		0.0032		0.0003		0.8001		0.4475	
Adj. R-square		0.04		0.0739		-0.0084		0.0378	
N		319		319		319		319	

This table provides the results for the regression between regulation and the risk disclosure quality. The definitions of the variables is given in Appendix B. Model 1 only tests the impact of regulation on the quantity of the disclosure using time fixed effects (in years), where Model 2 also includes other reporting incentives derived from prior empirical literature and governmental reports.

Table 6. Regression results for the different specific words

Additionally, in Model 4 the control variables Size and ROA are also significant. This means that when the size of the firm increases, the informativeness of the risk disclosure also increases. In contrast, when the firm is more profitable, the informativeness of the risk disclosure declines.

5.4 Discussion

The main goal of the housing act was to contribute to the transparency, risk management, supervision possibilities for regulatory agencies and standard setters (Min. BZK, 2015a). As it is hard to understand the drives of decisions made by non-profit organizations and its management (Glaeser, 2002), and housing associations especially. The results of the previous section imply that the regulation caused an increase in the quantity and the informativeness of the risk disclosure of Dutch housing associations. This is similar to the results of Miihkinen (2012), who finds that the implementation of new Finnish reporting requirements caused an increase in quantity and more extensive and comprehensive information in the risk disclosure.

Additionally, it supports the argumentation of Marshall & Weetman (2007), who state that more regulations lower the information gap between managers and stakeholders. On the other hand, the results show that the increase in total words of the risk disclosure is more pronounced than the increase in specific words. Table 2 suggests this already as the total amount of words increased from 2013 to 2018 respectively 2.72 times, whereas the total amount of firm-specific words used in the risk disclosure only increased 1.89 times in the same period. In addition, Model 5 and 6 also show that the quality per 100 words did not increase significantly due to the regulations. These results imply that the increase in quality is partially affected by the increase in quantity. Abraham & Shrives (2014) find that the firms' risk disclosure increase in length over time, however the substance of the firm-specific risks remains the same over time. Accordingly, they suggest that managers prefer symbolic than firm-specific disclosures. The results of this study are in the same direction, however less pronounced. Other studies state that the effect of firm characteristics, such as size, profitability or cost of capital, have more impact on the risk disclosure behaviour than the regulations (Hope et al., 2016; Nahar et al., 2016). This is not the case in this study, however some of the firm or industry specific control variables have a significant impact. This will be discussed in the next section.

Firm-specific factors

Prior literature mostly agrees on the positive influence of firm size on the risk disclosure quantity and quality (Linsley & Shrives, 2006; Elshandidy et al., 2012, 2018). The results of this study support this as in both models, Model 2 and Model 4, the results for size are significant and positive. Beretta & Bozzolan (2004) find that the increase in quantity of the risk narrative is primarily driven by the size. The results of this study suggest that the size indeed is a significant driver, but not that pronounced as the influence of the regulation. The results regarding the ROA suggest the profitability has a negative effect on the risk disclosure quantity and quality, however only the coefficient for Model 4 is significant. Prior literature is mixed about it as Elbannen & Elbannen (2015) find that higher risk disclosure is associated with higher profitability and Elshandidy et al. (2013) find that the risk disclosure is positively affected by dividend yield. On the other hand, Miihkinen (2012) find that the profitability negatively influences the risk disclosure. The results of this study therefore support the findings of Miihkinen. Prior studies also have shown the effect of leverage on the risk disclosure quantity and quality, however in this study no significant effect is found. Remarkable is that the coefficient for quantity is positive while the coefficient for quantity is negative. Prior empirical studies also find different signs. Kravet & Muslu (2013) and Campbell et al. (2014) find a

positive relation, where Elshandidy (2013) find a negative relationship. The results of this study support however the findings of Lajili & Zéghal and Linsley & Shrives (2006) who don't find any significant relationship. Overall, most of the results found in this study are comparable with the findings of prior empirical studies. This suggests that risk disclosures for non-profit organizations are affected by the same factors as for-profit organizations.

Industry-specific factors

In this paper, different specific factors are used which are only available for Dutch housing association, notably the mandatory separation regarding the social and commercial activities, the guarantee fund and the stricter supervision by the regulatory agency. Elshandidy et al. (2018) describes how risk reporting regulations may be more beneficial in certain more complex circumstances. Regarding the separation of activities, it was expected that the legal and administrative separation would lead to more risks disclosure quality, as those separations would ask for more enhanced reporting systems relative to the lighter version (Min. BZK, 2018). Table 4 shows that the separation choice is highly correlated with size, which is in line with the expectations as the lighter version is only available for smaller housing associations. The results indicate a changing direction, as the coefficients for the legal and administrative separation have a different direction in the models. Given these results, it is not possible to make inferences about the influence of the separation and the risk disclosure quantity and quality. The second industry-specific variable, the variable that measures whether the firm borrows money from the guarantee fund is less diversified. In the sample, only 10 firm-year observation don't borrow from the fund. Model 2 indicates that firm which do borrow money from the guarantee fund provide a longer risk disclosure, only at the 7% significance level. In the models regarding the quality, the coefficients are less pronounced and less significant. The last variable specific for the Dutch social housing industry is the tightened supervision by the regulatory agency, the AW. Table 4 indicates that the AW is correlated with the leverage and the separation. Additionally, Table 6 and 7 illustrate the negative coefficient for AW regarding the quality and quantity of the risk disclosure. Given these points, the most remarkable factor is the supervision by the AW, which is also a result of the regulations introduced in 2015. Therefore, these results are beneficial for the standard setters. Not only did the increased reporting standards result in more quantity and quality of the risk disclosures, also some of the additional factors contributed to the increase.

6 Conclusion

The remaining part of this thesis is structured as follows. The first section will summarize the research method and the most important findings. The second section describes the limitations of the study derived from the research method. The third section explains the contributions to literature, standard setters, the Dutch social housing industry and its stakeholders. Finally, the last section will provide the recommendations for further research.

6.1 Conclusions

This paper examines the effects of the new regulations, the Housing Act 2015, on the quantity and quality of risk disclosures in the Dutch social housing industry. The quality is operationalized using the specificity, in other words, the amount of idiosyncratic words or phrases used in the risk disclosure. Using the gathered data, the research model and the analysis, it is possible to answer the research questions. For the first sub-question, regarding the risk disclosure quantity, the answer is yes, which means that the quantity of the risk disclosure increased due the reformed housing act. The answer of the second sub-question, regarding the quantity, is also yes. The results of this study suggest that the overall quality of the disclosure did increase, however the quality per 100 words didn't change significantly. The last sub-question was stated as "Are there other factor which influence the quantity and quality of risk disclosures by Dutch housing associations?". The only constant factor this study finds is the positive impact of firm size on the risk disclosure quantity and quality. Further, some specific industry variables are significant, but not on every model. Hence, the supervision of AW has a negative impact on the length of the risk disclosure. Finally, the main research question, "Does the reformed housing act of 2015 improve the risk disclosure of Dutch housing associations?", can be answered with yes. The results imply that the risk disclosure increased in length and in overall quality since the introduction of the new regulations. Therefore, this study supports most of the findings of prior literature regarding risk disclosures. It confirms Abraham & Shrives (2006) and Miihkinen (2012) as it finds that regulations will result in more and better risk information however the quality increases relatively less than the quantity. Furthermore, it confirms the effect of the firm size which is also widely found in prior empirical studies. On the other hand, the results don't suggest that increasing complexity of activities (the form of separation, the leverage or the supervision by the regulatory agency) influence the risk reporting quality in the Dutch social housing sector.

6.2 Limitations

This study includes some limitations, which are mainly the result of the sample selection and the research method. The sample is randomly selected, however there still remains a selection bias as it was only possible to use the firms which shared their annual reports via their website or a response on the mail. Furthermore, the sample size of 319 observations was relatively small compared to the content analysis of Hope et al. (2016), namely 14865 observations, as they measure the specificity of English written annual reports using an automatic Named Entity Recognition application. This is primarily affected by the time-consuming process of data gathering and content analysis. However, compared to other content analysis studies, the sample is relatively larger, as example Miihkinen (2012) has a sample of 99 and Abraham & Shrives (2014) consist of 24 firm-year observations. Additionally, the total population of this study is smaller than the other studies as this study only focuses on the Dutch housing industry.

The use of content analysis involves some other limitations. The categorisation of risk disclosures causes that only certain categories will be used, in this case the information that contains specific or idiosyncratic details. The disadvantage is that other categories will be excluded (Beattie et al., 2004), such as monetary or non-monetary information, or forward- and backward-looking information. The content analysis is only applied at the risk disclosure paragraph of the annual report. While this is the most important narrative according to Campbell et al. (2014), the stakeholders may use other narratives, and even other sources, to gain more information. The execution of the content analysis may also lead to limitations. The content analysis is manually executed by humans, which contains higher risks of errors. Additionally, content analysis will always include some subjectivity. The categorisation may differ over time due to the learning curve of the coder. The categorisation should be the same over time in order to have objective observations (Beattie et al., 2004).

6.3 Contributions

Despite the limitations of the study, this thesis contributes to the information of different parties. First of all, this is the first study which conducts a risk disclosure content analysis on a debt-only firm. Previous literature and regulators mostly interested in the effect of risk disclosures on the risk perception of investors. However, the execution of this study is in line with the

growing importance of stakeholders other than investors in accounting literature and for regulators.

This study contributes to the knowledge of Dutch housing associations themselves, as it provides information about the risk disclosure quality, and how it is perceived. Firms may use this information in order to provide more informative risk disclosure to stakeholders. In addition, in order to disclose more specific risk information, firms should also think about the risk more specific, therefore it should contribute to the risk management of the firm (Hassan, 2014). Moreover, it should contribute to the professionalization of the non-profit organization (Alexander & Wiener, 1998). The preparers of financial statements within the housing associations also benefit from the results of this study as they have the duty to provide information to the stakeholders via the financial statements (Albring et al., 2016).

Furthermore, this study is important for financial statement users, in other words, the stakeholders of Dutch housing associations. As mentioned before, the major stakeholders of housing associations are tenants, debt financiers, central and local government. Nowadays, non-financial information plays a more important role, and especially the importance of risk disclosure has increased significantly (Campbell et al., 2014). The regulatory reforms in the social housing sector were meant to limit the risks (Min. BZK, 2015a), however not every stakeholder recognized significant results regarding the risk management (2019). The findings of this study imply that the risk disclosures contain more informativeness, this is beneficial for stakeholders.

Different regulators or standard setters may benefit from the practical implications of this study. Standard setters regarding the risk reporting regulations benefit as the results suggest that the regulations did result in better risk disclosures. In particular, regulators should consider the fact that the increase in length is more pronounced than the increase in quality. Especially regulators in the European Union will encounter advantage of this results, as current discussions are considering the mandatory audit of non-financial information in the annual report (Bozzolan & Miihkinen, 2019). However, taken broader, regulators recognize the importance of local and international regulation on risk reporting (Linsley & Shrives, 2006). The Dutch guidance regarding the risk reporting standards are less specific in the U.S. or U.K, therefore a greater variability in risk disclosures is possible (Deumes & Knechel, 2008)

Finally, the study also extends the existing literature about risk disclosure quality as it is the first study which examines the risk disclosure behaviour of non-profits. It supports the influence of regulations and, as control variable, size. The study additionally includes specific variables only available in the Dutch housing industry.

6.4 Recommendation for further research

There remain some factors undiscussed in this paper which are suitable for further research. First, while the stakeholders other than equity holders are gaining attention from regulators and accounting literature, this study is the first to examine the risk disclosure of non-profit organizations. Hence, there are lots of determinants undiscussed for debt-only firms, especially regarding the needs of stakeholders, even for investors. Therefore, further research should focus on how stakeholders incorporate risk information and which aspects are important.

This study particularly focuses on the regulation in the Dutch housing associations, which allows it to use industry-specific control variables. The only industry in which that is done before, is the banking industry (Hassan, 2014). However, it could be interesting for regulators to see which industry specific regulations increase the information provision for stakeholder, as it may be implemented in other industries.

Moreover, this should also be done between the difference between countries. Some prior studies examined the differences between risk reporting in the U.S. and U.K., but there is no overarching study which describes the difference per country in, for example, the European Union.

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Appendix A. Example coding

For this example, each category of specific words or phase will get assigned a special colour for extra distinction. However, during the content analysis, this is not done.

Coding colours

Names of organizations

Names of persons

Names of locations

Dates

Times

Money values (in euro)

Quantitative values

Example 1: Annual report of Centreda 017

" - Asbest: Binnen de huidige regelgeving zijn in de komende jaren geen grote saneringsmaatregelen nodig. In de plannen is verwerkt in welke complexen de komende jaren asbest wordt verwijderd om in ieder geval te voldoen aan de wettelijke eis vanaf 2024 geen asbestdaken of asbestgolfplaten meer in het bezit te hebben. Daarnaast is voor 2018-2027 ongeveer € 1 miljoen per jaar extra opgenomen, waarmee geanticipeerd wordt op een mogelijke aanscherping van de regels. Indien als uitgangspunt voor de aanscherping wordt aangehouden dat woningen helemaal asbestvrij moeten zijn, dan is dit zeer waarschijnlijk onvoldoende.

- Kwaliteit van het particulier woningbezit: Deze laat te wensen over, met name bij de 3.650 woningen die Centrada tussen 1995 en 2004 heeft verkocht. Dit kan negatieve gevolgen hebben voor de leefbaarheid en de waarde van Centrada-bezit. ⌞SEP⌝

- Investeringsvraag: Het tempo van de groei van Lelystad, ervan uitgaande dat Centrada 30% van de groei door middel van nieuwbouw sociale huurwoningen voor haar rekening neemt, is van invloed op het investeringstempo van Centrada en daarmee ook op het weerstandsvermogen. "

Total number of words: 175

Total number of words or phrases conveying specific firm information: 7

Therefore, a specificity percentage of 4%

Example 2: Annual report of Gouderak 2016

"Afgelopen jaren is duidelijk geworden welke impact de wetgever heeft op de sector. De wetgever laat zien dat het wetgevingstraject en regels vaak met een zeer korte of te korte implementatietijd worden door gezet. Het risico daarvan is dat er kinderziektes in zitten die met reparatiewetgeving moeten worden hersteld. Dergelijke trajecten vergen extreem veel energie van de organisatie en behelzen het risico van tijdverlies en hoge implementatiekosten. "

Total number of words: 67

Total number of words or phrases conveying specific firm information: 0

Therefore, a specificity percentage of 0%

Appendix B. Variable list

Name	Description
ID	Contains name + year, used to identify the individual value
YEAR	The year to which the annual accounts relate
dREG	Dummy variable where pre-regulation is 0, and after-regulations 1
Quantity	Number of words used in the risk disclosure
SpecWord	Number of specific words or phrases conveying specific information
Quality	Number of specific words or phrases conveying specific information scaled by the total number of words of the risk disclosure
Firm specific variables	
Profitability	Earnings before tax expense
Equity	Amount of equity
Debt	Amount of debt
TotAct	Amount of total activa
logTotAct	Amount of total activa scaled by log
Units	Number of rental units
ROA	Earnings before tax expense scaled by total activa
Leverage	Total debt scaled by total activa
Industry specific variables	
dWSW	Dummy variable whether the housing association borrows money from the guarantee fund
dSeparation	Variable which indicates how the firm separated the social and commercial activities
	1= administrative separation
	2= legal separation
	3= less severe restrictions
dAW	Variable which indicates which firm has tightened supervision by the. Housing Authority
	0 = No
	1 = Yes

Appendix C. Model assumptions

Visual overview
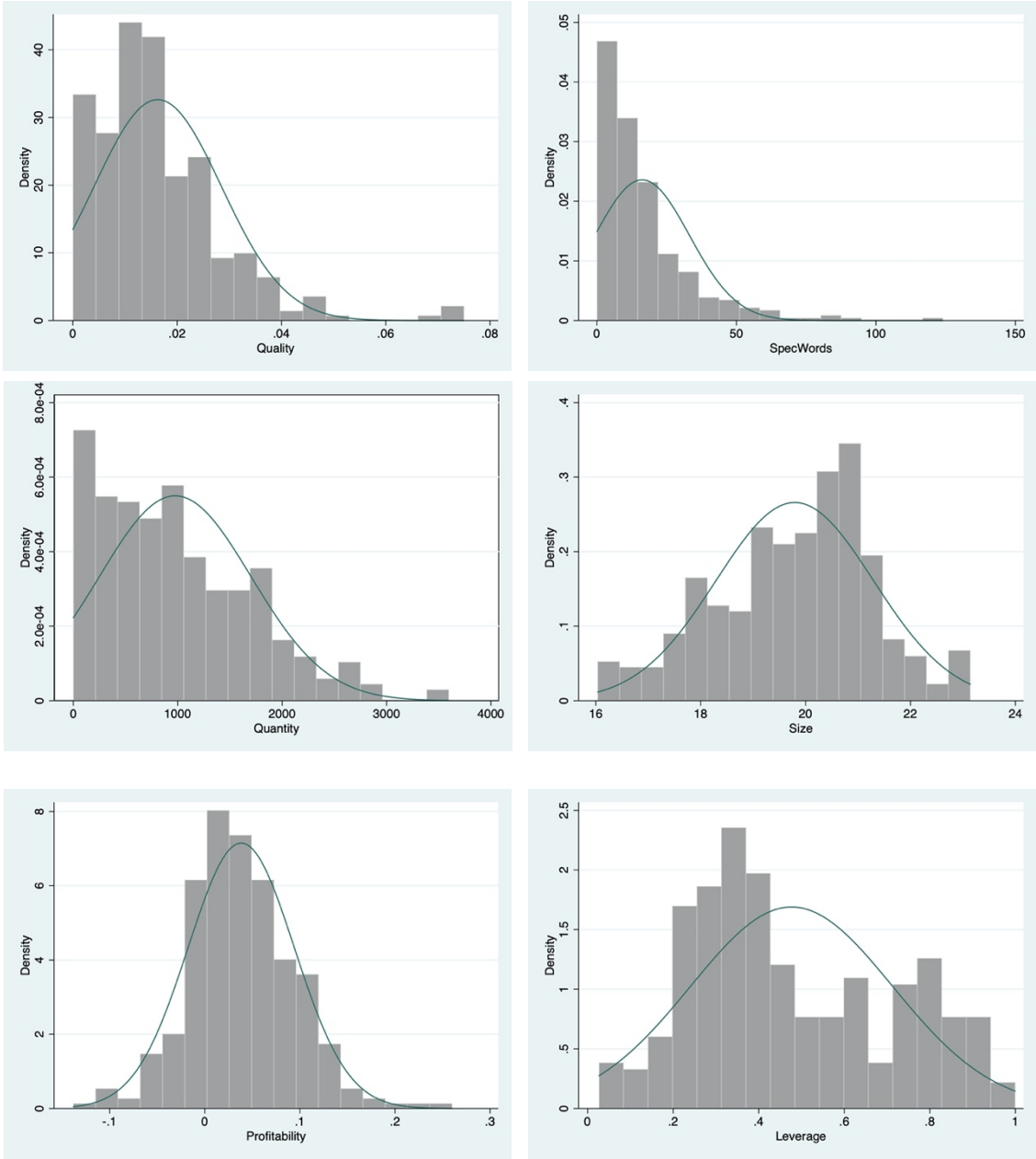
	Normality			Max	N
	Pr (Skewness)	Pr (Kurtosis)	Shapiro-Wilk		
Disclosure indicators					
Quantity	0.00	0.00	0.00	0.00	0.00
# Specific words	0.00	0.00	0.00	0.00	0.00
Quality	0.00	0.00	0.00	0.00	0.00
Industry specific indicators					
# rental units	0.00	0.00	0.00	0.00	0.00
Separation	0.00	0.08	0.01	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00
AW	0.00	0.00	0.00	0.00	0.00
Regulation	0.00	0.00	0.51	0.00	0.00
Firm-specific indicators					
Profit before tax	0.00	0.00	0.00	0.00	0.00
Equity	0.00	0.00	0.00	0.00	0.00
Book value	0.00	0.00	0.00	0.00	0.00
Debt	0.00	0.00	0.00	0.00	0.00
ROA	0.02	0.01	0.01	0.00	0.00
Leverage	0.01	0.00	0.00	0.00	0.00

* indicated value x 1,000,000

This table provides the descriptive statistics for the different variables used in the study, notably mean, standard deviation, minimal value, maximal value and number of observations. The definition and measurement of the variables is provided in Appendix A. Risk disclosure narratives are collected from 2013 to 2018. All variables are measured at the end of the year unless defined otherwise.

Table 7. Normality tests.

Variable	VIF	1/VIF
Regulation	1.27	0.79
Size	2.16	0.46
ROA	1.41	0.71
Leverage	1.43	0.70
Separation	2.11	0.47
WSW	1.27	0.72
AW	1.21	0.82
Mean VIF	1.57	

This table indicates the variance inflation factor (VIF), which is used to test for multicollinearity. The table shows that VIF value is higher than 10, therefore there is no thread for multicollinearity.

Table 8. VIF values.