Towards an XBRL-enabled Corporate Governance Reporting Taxonomy

An empirical study of NYSE-listed Financial Institutions

by Dirk Beerbaum

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Faculty of Business, Economic and Law
Surrey Business School

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I Declaration of Originality

This thesis and the work to which it refers are the results of my own efforts. Any ideas, data, images or text resulting from the work of others (whether published or unpublished) are fully identified as such within the work and attributed to their originator in the text, bibliography or in footnotes. This thesis has not been submitted in whole or in part for any other academic degree or professional qualification. I agree that the University has the right to submit my work to the plagiarism detection service Turnitin UK for originality checks. Whether or not drafts have been so assessed, the University reserves the right to require an electronic version of the final document (as submitted) for assessment as above.

A handwritten signature in black ink, appearing to read 'Dirk Beerbaum', with a long horizontal stroke extending to the right.

Dirk Beerbaum, July 2015

II Abstract

Corporate Governance failures of large corporations such as Lehman Brothers have evoked a plethora of calls for changes in Corporate Governance Principles. Despite the fact that after the financial crisis, a number of transnational institutions have called for wide-scale changes related to Corporate Governance Principles by further protecting shareholders' rights, it has been proven that theoretical extension and reform of Corporate Governance Principles is not enough, because it does not ensure successful implementation. According to a report from Isaksson (2009), corporate disclosures were not in line with OECD principles on good Corporate Governance. Moreover, according to Isaksson (2009), the financial crisis can also be traced back to incomplete Corporate Governance disclosures.

One major implementation topic involves Corporate Governance Reporting, which is very complex for multinational companies, as it involves statutory compliance with multiple rules and laws, coping with heterogeneous "Systems of Corporate Governance" (Weimer and Pape, 1999; Leuz *et al.*, 2003; Tylecote and Visintin, 2007) and additionally the compilation of codes (Cadbury, 1993) and industry-specific standards (Mach *et al.*, 2006; Bebchuk and Spamann, 2010). Extensible Business Reporting Language (XBRL) is assumed as a benchmark related to interactive business disclosures (Chen and Sun, 2009; Debreceeny *et al.*, 2010; Alles and Piechocki, 2012). Does XBRL have the potential to help to reduce the complexity of companies' Corporate Governance Reporting (Alles and Piechocki, 2012)? In the academic literature, there are many articles which conclude that it is possible for XBRL to enhance transparency and improve Corporate Governance for financial reporting (Abdullah *et al.*, 2009; Roohani *et al.*, 2010; Alles and Piechocki, 2012; Müller-Wickop *et al.*, 2013): therefore, an additional question is whether the application of XBRL to the non-financial reporting of Corporate Governance can also contribute to enhanced transparency.

XBRL will become mandatory based on the legal requirement of the Security and Exchange Commission (SEC) for Foreign Private Issuers (FPI) that are listed on the NYSE (Debreceeny *et al.*, 2010). Investors demand the extension of XBRL-enabled reporting to other financial reports, including CGR (Arnold *et al.*, 2012), because within the peer group of listed Foreign Private Issuers on the New York Stock Exchange, comprising Financial Institutions, there is no adequate Corporate Governance framework to reflect Corporate Governance Reporting. Therefore, in this doctoral thesis, a taxonomy on Corporate Governance will be developed which can be put into practice for Corporate Governance Reporting.

III Acknowledgements

This thesis is grounded on my personal research and many years of experience as Vice President of Corporate Disclosures working for several banks in Germany and as a consultant in the area of Finance Transformation, Disclosure Management and Business Process Reengineering.

One of the main triggers for this thesis was my direct experience of the financial crisis, as it showed that many principles and assumptions that were believed to be “carved in stone” were challenged overnight. Investors lost confidence as Corporate Governance turned out to be very poor in reality, although companies consistently declared in their disclosures that they followed good Corporate Governance guidelines.

“The foundation of any structure in Corporate Governance is disclosure”: this quote from Sir Adrian Cadbury (Iskander, 2000, p. vi) can be regarded as the guiding principle of this thesis, as it emphasizes the important role of disclosure and transparency for Corporate Governance (Iskander, 2000).

The finalization of this thesis could not have been realized without the backing, the encouragement and the comments from my supervisors Professor Jean Chen, University of Southampton, Dr Laura A. Costanzo, University of Surrey and Dr Dimitrios Gounopoulos, University of Sussex, to whom I am very thankful. Furthermore, I am also very thankful to my wife Nora Beerbaum and my family for their support and commitment during the research work.

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VI Abbreviations

AECA	Spanish Association of Accounting and Business Administration
ACCA	Association of Chartered Accountants
ACM	Absorption Capacity Model
APRA	Australian Prudential Regulatory Authority
CA	Content Analysis
CEO	Chief Executive Officer
CFA	Certified Financial Analyst
CG	Corporate Governance
CGR	Corporate Governance Reporting
CGP	Corporate Governance Principles
CIFAR	Centre for Financial Analysis and Research
CSR	Corporate Social Responsibility
DBA	Doctor of Business Administration
DOI	Diffusion of Innovation
DVFA	Deutsche Vereinigung für Finanzanalyse
ECGI	European Corporate Governance Institute
Eds.	Edition
e.g.	Exempli gratia
et al.	et alii
EU	European Union
XML	Extensible Mark-up Language
FASB	Financial Accounting Supervisory Board
FPI	Foreign Private Issuer
FR	Financial Reporting
FRAT	Financial Reporting Taxonomy Architecture
GAAP	General Accepted Accounting Principles
GL	General Ledger
GPCGD	Guidance on Good Practices in Corporate Governance Disclosure

GRI	Global Reporting Initiative
HTML	Hyper Text Mark-up Language
IASB	International Accounting Standard Board
IT	Information Technology
i.e.	id est
IIF	Institute of International Finance
IIRC	International Integrated Reporting Committee
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IR	Investor Relations
ISAR	International Standards of Accounting and Reporting
IS-FESG	Integrated Scoreboard for Financial, Environmental, Social and Corporate Governance Information
MB	Management Board
MD&A	Management Discussion and Analysis
NASDAQ	National Association of Securities Dealers Automatic Quotation System
No.	Number
NYSE	New York Stock Exchange
OECD	Organization for Economic Cooperation and Development
p.	Page
pp.	Pages
SB	Supervisory Board
SEC	Security Exchange Commission
SOX	Sarbanes Oxley Act
TAM	Technology Acceptance Model
UN	United Nations
US	United States
Vol.	Volume
XBRL	eXtensible Business Reporting Language

1 Problem statement and purpose

1.1 Increased implication of Corporate Governance

CG has developed into a dominant critical business issue in the last decade and has been controversially discussed in public policy debates and in the academic literature for various reasons. Although the issue of CG has been discussed since the early days of corporations, CG soon becomes a matter of public concern whenever giant corporate failures and scandals break out. Several such shocking high profile corporate scandals and the bankruptcy of several large companies in the western hemisphere at the beginning of the twenty-first century have stimulated public discussion on good governance (Nix and Chen, 2013).

Owing to these corporate accounting fraud scandals, particularly Enron in 2001 and WorldCom in 2002, CG reforms were enacted in several countries, constituting main new laws, regulations and guidelines: the US Sarbanes-Oxley Act (2002), the OECD Guidelines of CG and their implications for Non-OECD Countries (2004), the EU Transparative Directive (2005), the EU Transparency Law for Corporate Executives (2006) and the US NYSE CG Standards (2008).

When Lehman Brothers had to announce its bankruptcy on September 15, 2008, resulting from huge losses in the subprime mortgage market and fuelled by the global financial crisis, it became obvious that prior reforms to CG (Akinbami, 2010) had failed (Cioffi, 2010). Many academics and business professionals share the opinion that the turmoil required a re-examination of CG (Akinbami, 2010; Ramos *et al.*, 2012; Fridson, 2013; McNulty *et al.*, 2013) and a search for opportunities to improve CG (Baker and Anderson, 2010). Companies are often criticized for only following a box-ticking approach to CGR without disclosing the true reality of their governance (PwC, 2013).

According to a report by Isaksson (2009), corporate disclosures, specifically those related to risk management and remuneration, did not comply with OECD principles on good CG and the financial crisis can be traced back to incomplete CG disclosures.

To be compliant with the principles of CG issued in 2004 by the OECD (OECD, 2004), corporations should provide information to the investor about CG that represents a realistic view of the financial and non-financial position of the firm's governance. The OECD therefore demands that a CG framework should be set up to "ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company" (OECD, 2004, p. 22). These OECD objectives become obvious in the rapidly increasing concept that CG's key task is to "create accountability and transparency for stakeholders and shareholders".

The role of CG in enhancing accountability and transparency can also be traced back to the definition of the Association of Chartered Accountants (ACCA), which is a member of the British Association of Authorised Public Accountants.

ACCA recently developed a framework in response to the reaction to the financial crisis (Solomon, 2011), which defines three main purposes of CG. The objective of CG should be to ensure that:

- "the board, as representatives of the organisation's owners, protects resources and allocates them to make planned progress towards the organisation's defined purpose" (ACCA, 2009, p. 4);
- "those governing and managing an organization account appropriately to its stakeholders" (ACCA, 2009, p. 4);
- "shareholders and, where appropriate, other stakeholders, can and do hold boards to account" (ACCA, 2009, p. 4).

Inherent in all three of these factors is the requirement to transparently disclose the CG structure, processes and issues faced by the company.

Organisations need to demonstrate their authentic commitment to these values with the aim to create and keep investors, stakeholders, and society as a whole confident.

Reconciliation on global capital markets is founded on sophisticated communication networks between companies and investors and there exist information intermediaries which serve as mediators between these key actors (von Westarp *et al.*, 1999).

Shareholders request transparency in corporate reporting (AKEU, 2010), as each investment decision requires the investor to be enabled to assess the risk and return of their investment. Studies show that investors are committed to paying additional margin for good CG (Newell and Wilson, 2002). This has also been confirmed by Patel and Dallas (2002). Academic empirical studies from Gompers *et al.* (2003) for the US capital market and Drobetz *et al.* (2004) for the German capital market confirm that the value of a company is strongly influenced by its CG. Resulting from that, companies, including financial institutions, are induced to improve their CGR.

Stakeholders such as debtors or suppliers to the corporation require the same quality of information about the company's CG as shareholders to be in a position to evaluate their financial relationship to the corporation (Velamuri and Venkataraman, 2005). According to a user-centric model developed by Bovee *et al.* (2003), information quality is influenced by four essential attributes: accessibility, interpretability, relevance, and integrity. The model defines accessibility in terms of the usefulness of the information and interpretability in terms of its clarity and meaningfulness. Relevance implies that the information provided to the shareholders and stakeholders is of interest in the given context. Integrity means that the information is believed to be "free from defects" (Bovee *et al.*, p. 6). This model is extrinsic, as it focuses on the user's perception of the given information; however, information quality is also dependent upon intrinsic quality. Even for institutional investors with their own research

teams, it is a challenge to assess the intrinsic quality of CG and perform peer analysis based on low quality reporting about CG (Bushee and Noe, 2000). Reporting about CG becomes an important information source to eliminate asymmetries between the internal and external available information demanded by shareholders and stakeholders. Due to increasing information search requirements from international investors, the impact and the implications of CG disclosures of corporations keep on growing (Cadbury, 1999).

Corporations should be committed to high quality CGR and it should be in their interest to follow high international minimum quality standards on CGR, which underpins the rapid worldwide publication and implementation of codes on best-practice CG. According to Aguilera and Jackson (2003), companies have significant flexibility in implementing CG bundles and could internationalize their CG practice.

However, the question arises as to how investors can perceive that companies are really committed to high quality CG standards, focusing on the information disclosure of CGR and additionally on how investors can make efficient comparisons between different corporations related to the implementation of high standards for CG.

1.2 Increased relevance and complexity of Corporate Governance Reporting

“The foundation of any structure in Corporate Governance is disclosure.” This quote from a foreword in a World Bank report (Iskander, 2000, p. vi) written by Sir Adrian Cadbury, who developed the Cadbury Code in the United Kingdom, underlines the important role played by disclosures in relation to CG. During the last twenty years, a technological wave of development has taken place, supported by the widespread diffusion of the internet. With regard to corporate disclosures, this trend has also generated the creation of Extensible Business Reporting Language (XBRL), which many accounting experts expect to revolutionize corporate disclosures, since it enables corporate disclosures to be aggregated, transferred, analysed faster and in more detail, and enhances transparency (Bovee *et al.*, 2003; Alles and Piechocki, 2012; Mihaela, 2013). Despite this positive impact of XBRL, which is confirmed empirically (Peng *et al.*, 2011; Yoon *et al.*, 2011), and considering theoretical studies (Christopher, 2007; Lester, 2007; Pinsker, 2007), to date attempts have not been made to apply XBRL to non-financial corporate disclosures, including Corporate Governance Reporting (CGR).

Disclosures are a means of communicating performance and governance (Healy and Palepu, 2001). There are several reasons why CG systems and the quality of public disclosures have become increasingly important to business. Sustainability is becoming an ever more critical business issue and stakeholders have started to pay more attention to the content of the report and the way in which it is presented. The global financial crisis pinpointed the accountability of CG and expectations around transparency have increased. Instead of the release of CG details or policies following a passive role, comprehensive and proactive disclosures from forward-thinking organizations are demanded. Healy and Palepu (2001) assume that two different external publication policies related to companies can be identified. The first involves ongoing communication based on an integrated CG policy. Contrary to this ap-

proach, there are corporations which pursue isolated or single issue-based communication. However, there are also organisations which recognize the benefits of increasing disclosures on CG as a clear signal for higher transparency.

The quality and quantity of external disclosures directly impact the transparency of an organization's CG systems, thereby revealing its strengths and weaknesses. Such transparency has grown in importance for stakeholders, shareholders and management for a number of reasons. Accountable CGR and expectations around transparency have resulted in more comprehensive disclosures and more disclosures on a voluntary basis from larger global organizations, in contrast to the publication of CG details or policies in a less transparent retrospective approach.

Nevertheless, there are still many corporations that only disclose what represent the minimum requirements. At the same time, investors regard greater transparency in company reports as a signal and an equal result of more sound CG. In the experience of the author, the current systems, processes and culture behind the financial reporting embedded in the reporting calendar are major obstacles to a proactive CG environment.

CGR has become very complex for multinational companies in recent years, as it involves statutory compliance with multiple rules and laws, coping with heterogeneous and even non-unitary systems of CG. Additionally, CGR also involves compliance with codes and industry-specific standards. The increasing complexity makes it progressively harder to achieve the goal of ensuring transparency and reducing information asymmetries between investors and management (Möllers and Kernchen, 2011).

The increased complexity means that annual reports including non-financial information are greatly increasing in terms of quantity of information without providing improved quality of disclosures (Paredes,

2003). Paredes (2003, p. 416) uses the metaphor “blinded by the light” to illustrate this development, as people are exposed to too much information, and therefore reach information overload and become increasingly confused. This issue has been reflected in organizational development, accounting and information science (Eppler and Mengis, 2004) and the debate over a substantial disclosure reform with the aim to solve the issue of information overload is ongoing and is discussed by several Accounting Standard Boards with different jurisdictions, including the IASB (Heffes, 2014) and the SEC (Lynch, 2013), and in several academic articles and books (Casey Jr, 1980; Stocks and Harrell, 1995; Speier *et al.*, 1999; Möllers and Kernchen, 2011).

Several articles analyze the impact of cross-border transactions on CG (Bris and Cabolis, 2002; Martynova and Renneboog, 2008; Erel *et al.*, 2012). Improvements in CG resulting from cross-border transactions – the so called spillover effects – are explained with enhanced regulatory regulations from the bidder compared to the target (Martynova and Renneboog, 2008). Cross-border transactions for financial institutions during the 1990s led to very large financial institutions with multiple types of financial services in multiple nations (Berger *et al.*, 2000).

“Disclosure overload” (Johnson, 1992, p. 101) is a term that refers to “information overload” in connection with the publication of financial reports such as annual reports for year-end. “Information overload” (Grether *et al.*, 1986, p. 277) is an issue that has been discussed in various contexts within academic research for more than fifty years. This paradigm mainly addresses the effect of variation in information on individual decision-making. Researchers came to the conclusion that the quality of the decision is proportional to the information perceived, but only to a limited point (Eppler and Mengis, 2004). For management research, the main focus for the theory of information overload has been accounting (Schick *et al.*, 1990). Information overload is associated with excessive information, which prevents someone from making a decision.

The regulators have reacted to cases of corporate corruption, including Enron and WorldCom, with stricter regulatory requirements (Hermalin and Weisbach, 2012). The Sarbanes-Oxley Act (SOX) requires that the management performs an evaluation of its internal control system for financial reporting and additional disclosures related to CG.

The following are additional reasons for the increasing complexity of CGR for financial institutions:

- Increasing pressure from the regulatory side on capital requirements (Basel II and Basel III);
- The fierce global competition has been followed by an increase in cross-border transactions, so that transparency has become even more critical in the eyes of the shareholders and stakeholders (Luo and Tung, 2007; Bris *et al.*, 2008);
- Globalization of financial markets requires increased financial market communication and transparency;
- Increasing public pressure on what is perceived as good CG practice as financial institutions are on the spot due to the financial crisis.

1.3 Corporate Governance Reporting for Financial Institutions

Financial institutions have specific extended needs with regard to CGR. According to Adman and Mehran (2003), financial institutions face additional CG issues, as CG for financial institutions differs from that of non-financial or industrial companies. According to Mehran (2011), financial institutions deal with several more stakeholders than nonfinancial firms. This results from the fact that financial institutions have more stakeholders which do not have legal relationships but might enter into such depending upon the CGR. Additionally, the business is more complex and the rate of change is much higher within financial institutions compared to nonfinancial firms (Mehran *et al.*, 2011).

Although many studies exist on CG and industrial companies, the number of studies that address CG and reporting for financial institutions has historically been low (Levine, 2004; Caprio *et al.*, 2007, Macey, 2003). However, this changed considerably after the financial crisis, as financial institutions' CG became the topic of many academic works (Erkens *et al.*, 2012, Faleye, 2010; Minton *et al.*, 2014). One main area of focus was the risk-taking of banks. According to Shapiro, the SEC chairman, "many of the problems leading to our economic crisis can be laid at the door of poor CG. Too many boards failed in their primary function of diligently overseeing management. As a result, too many managers took on too much risk and made decisions that were too focused on the short-term" (Grabar *et al.*, 2010, p. 90).

The main research question asks whether common attributes of CG for financial institutions during the financial crisis can be identified which contributed to high risk-taking behaviour. As part of these studies, the following attributes were considered: the relative proportion of independent directors (Minton *et al.*, 2014), the board size (Faleye and Krishnan, 2010), the experience of the executives (Fernandes and Fich, 2013), the risk committee (Ellul and Yerramilli, 2013), executive compensation (Cheng *et al.*, 2010) and institutional ownership (Laeven and

Levine, 2009). According to Laeven and Leveine (2009) and Ellul and Yerramilli (2013), financial institutions with existing institutional investors have higher risk appetite.

Financial institutions are defined in compliance with Berger *et al.* (1999) and Achleitner (2014) as companies working in the financial service industry: Financial services comprise products and services offered by financial institutions, which are also banks and insurance firms. Those products consist of credit-related loans, advisory and money management for individuals as well as investment banking-related products such as sales and trading or money markets targeted at institutional clients. Among the organizations that have such products in their portfolios are banks, insurance companies, private business clients, consumer banks, investment funds, cooperative banks and savings and loans companies.

Furthermore, banks usually consist of 90% debt, compared to about 40% on average for nonfinancial companies, because stakeholders have a much more pivotal implication in banks compared to nonfinancial companies. Above all, banks take over a crucial role related to the function of the financial system, so that insolvency might cause systematic failure of the system. As a consequence, banks become regulated in different ways from nonfinancial companies and governments even become stakeholders in the banks. Further differentiators between nonfinancial and financial companies include the usage of leverage. For nonfinancial companies, it is a source of financing, while for financial companies it is basically a source of revenue generation.

Additionally, the business models and the business in which banks operate are extremely complex and are subject to dramatic shifts (Mehran *et al.*, 2011). According to Levine (2004, p. 2), "In banking, loan quality is not readily observable and can be hidden for long periods. Moreover, banks can alter the risk composition of their assets more quickly than most non-financial industries and banks can readily hide problems by

extending loans to clients that cannot service previous debt obligations.” The growth in complexity is also, according to Mehran *et al.* (2011), attributable to the fact that financial institutions have grown in size and expanded into other businesses, while new competitors in the “shadow banking” sectors have been created and have intensified competition. According to Levine (2004), another fact that changes governance mechanisms for financial companies is that governments are often stakeholders of banks even in countries that intervene very little.

1.4 Framework of research

XBRL has evolved as the benchmark for electronic disclosures (Cohen *et al.*, 2005; Chen and Sun, 2009; Debreceeny *et al.*, 2010; Alles and Piechocki, 2012; Liu *et al.*, 2014). There are many articles within the literature which conclude that XBRL has the capability to enhance clarity and improve CG for financial reporting (Roohani *et al.*, 2010; Alles and Piechocki, 2012; Müller-Wickop *et al.*, 2013). Can XBRL contribute to enhancing transparency when applied to CGR? In the academic literature, there is very little research about the usage of XBRL for CGR (Urdari *et al.*; Alles and Debreceeny, 2012). This not only represents a research gap, but also has practical implications, which justify the present research, as investors demand an extension of XBRL-enabled reporting to CGR (Arnold *et al.*, 2012).

Nonfinancial reporting consists of reporting on environmental, social and governance aspects; however, the terminology is used in different contexts: risk valuation, socially responsible investing or corporate responsibility (Bassen and Kovacs, 2008). Within the literature about nonfinancial reporting, it is stated that the main issue was that the companies could not submit standardized tags in XBRL and therefore only a manual mapping could enable a direct comparability. As a result, the non-standardized reporting elements for nonfinancial reporting needed to be replaced by a taxonomy. The Global Reporting Initiative started to develop a sustainability framework, which was translated into an XBRL taxonomy (Moreira and da Silva, 2013).

The universal objective of the research is to focus on the disclosures related to stock-listed financial institutions within the scope of CG. Applying an empirical study, this thesis intends to contribute to the academic stream on CG through the systematization of CGR of financial institutions by means of a taxonomy, which can be used for the purpose of XBRL filings. XBRL filings are interactive data enabling automatic processing of business information by software (Debreceeny *et al.*, 2009).

The development of this taxonomy has been undertaken for several different reasons. First, according to the academic literature on XBRL, the non-availability and the incomplete knowledge about non-financial taxonomy development is a major obstacle to the transformation of XBRL to narrative information, including CGR. Secondly, the development of a taxonomy also enables the classification of CGR to better understand similarities and differences. Thirdly, the quality of XBRL is inevitably connected to the design of an adequate taxonomy.

In recent years, CGR for multinational companies has been characterised by increasing complexity. Could XBRL potentially help to reduce the complexity of companies' CGR (Alles and Piechocki, 2012)?

Moreover, according to Beattie *et al.* (2004), business reporting models should be expanded to “serve the changing information needs of the market” (Beattie *et al.*, 2004, p. 28) and disclose the “information required for enhanced corporate transparency and accountability” (Beattie *et al.*, 2004, p. 28). Can XBRL become an enabler of the enhanced corporate transparency and accountability requirements brought by the fluctuating requirements of the market on corporate information? XBRL, according to Piechocki *et al.* (2009, p. 224), is regarded as an enabler of additional transparency, and the contribution of this thesis is to consider this assumption for CGR.

Since the 1990s, a magnitude of literature has been published about CG, which can be categorized into three generations of studies: national country-by-country studies, international studies and performance studies.

As many companies have published fraudulent reports in recent years (Enron, WorldCom and others), the accountability, transparency and reliability of CGR has been questioned by market participants. This thesis intends to make a contribution to the academic literature with regard to CG to increase the transparency and reliability of CGR (Piechocki *et al.*, 2009).

A sequential exploratory mixed model, with a qualitative and then a quantitative approach, will be applied. This thesis is based on the institutional and principal-agent theory, as the theoretical prepositions help to understand a corporation's disclosure policy to both its shareholders and stakeholders.

This thesis addresses a real working issue and is grounded on my personal research and many years of experience as Head of Corporate Disclosures working for several banks in Germany and as a consultant in the area of Finance Transformation, Disclosure Management and Business Process Reengineering. I have conducted empirical research regarding CGR concepts and the design of XBRL taxonomies. This provides me with broad practical as well as theoretical knowledge for the development of a CG taxonomy which is relevant for financial institutions.

This thesis intends to close research gaps with regard to the following main topics.

The main motivation for this thesis is that in the academic literature there is very little research into the usage of XBRL for CGR (Urdari *et al.*; Alles and Debreceeny, 2012). Despite the existence of several taxonomies with regard to IFRS, U.S. GAAP, Sustainability Reporting (GRI) and Integrated Scoreboard (IS-FESG), to the researcher's knowledge there is no CGR taxonomy that could be used for financial institutions.

Moreover, within academic CG research, a global theory on governance remains to be developed, so that the existing theory has limitations in explaining CG mechanisms, including the CGR reporting of global corporations (Carver *et al.*, 2005). According to Williams and Aguilera (2008), disclosure research faces different challenges, the most severe of which is that there is disagreement about a unifying theory.

According to Roohani and Furusho (2009), the development of further taxonomies is expected due to the lack of existing taxonomies. The chosen topic is a practical use case and it intends to close existing gaps within the practical research field of CGR.

The following is a short summary of existing taxonomies: Several institutions have developed XBRL-enabled taxonomies for application within companies; however, CG is not part of their scope. The IASB in London focuses on the development of an XBRL taxonomy for its IFRS accounting standards. The FASB follows the same approach for the US GAAP XBRL taxonomy, as the focus is on the legally required Financial Reporting (Graham *et al.*, 2005). The Global Reporting Initiative (GRI), which further develops reporting on sustainability, has also issued an XBRL-enabled taxonomy. Although there are reporting elements covering disclosures on CG within the GRI XBRL taxonomy, these elements do not cover the full reporting spectrum of CG, as the main objective for GRI is the measurement of sustainability and the development of key performance indicators (Butler *et al.*, 2011). Due to this inadequacy, the development of an XBRL-enabled CGR taxonomy follows the objective to support investors, auditors and analysts to obtain information about CG more quickly and simply.

This thesis intends to answer the following research question: Can XBRL be applied to CGR by developing a taxonomy for financial institutions as foreign private issuers?

The answer can be used to formulate several hypotheses or propositions about the issues involved in developing a taxonomy for non-financial disclosures, which fulfils the XBRL specifications. In order to answer the question, several steps have been followed which lead to a framework for the development of an XBRL-enabled taxonomy.

1.5 Research objectives

The overall objective of this dissertation is to analyse in detail the disclosures of stock-listed financial institutions relating to CG. To better explain corporate reporting disclosure transparency, a globalizing taxonomy will be developed using an inductive approach.

The DBA thesis therefore pursues the following two main objectives, which contain practical as well as theoretical aspects:

1. To develop a taxonomy that allows a holistic coverage of the spectrum of CGR of Financial Institutions (Roohani *et al.*, 2009), to cut through the increasing complexity (Paredes, 2003) and to identify common reporting elements (Cicon *et al.*, 2012), which could also bring about a cohesive world theory with regard to corporate governance (Schiehl *et al.*, 2014). This research project shall provide the basic framework for a voluntary implementation of XBRL-enabled CGR. Therefore, the taxonomy implies a classification scheme (Liu, 2013) that provides an implementation-oriented framework for financial institutions planning to convert to XBRL reporting, by providing main categories and reporting elements. The CG literature lacks studies on basic CGR elements and how they are reported (Stiglbauer, 2010b). The majority of the literature is focused on explaining CG divergences of core elements with country-specific de-jure requirements and the underlying embedded systems (Barker, 2010). Very few studies focus on XBRL for CGR (Roohani *et al.*, 2010), although XBRL is regarded as a promoter of transparency (Müller-Wickop *et al.*, 2013), which is seen as a main deficit of financial reporting within the financial crisis (Isaksson, 2009). XBRL embedded in CGR could also have the potential to enhance monitoring of external stakeholders, investors, auditors, customers and suppliers, as the comparability of CGR could be improved. As CGR provided

in a non-computer-readable format requires manual conversion by financial intermediaries such as rating agencies, financial data providers or analysts, XBRL has the potential to diminish or even abolish data conversion steps (Alles and Piechocki, 2012). Data conversion also bears the risk of misinterpretation and human errors, while XBRL enables automated processing of disclosures (Piechocki *et al.*, 2009).

2. To identify a bundle of determinants for CGR. Considering voluntary disclosure literature, there are two basic determinants within financial reporting, which are either mandatory or voluntary determinants (Coffee Jr, 1984). This study aims to derive a multitude of explanatory factors, which is a prerequisite for XBRL-reporting preparation (Piechocki *et al.*, 2009) and should also provide more transparency within the wide landscape of CGR. In line with taxonomies for Financial Statement Reporting such as IFRS or US-GAAP XBRL (Kurt and David, 2003), requirements, including preferences and definitions, will be analysed to identify whether there are common characteristics, which can be summarized as de-jure, codex/principle and common practice/industry standards. If, in the context of the research project, it becomes apparent that they are not sufficient, they will be extended further.

As taxonomy development plays an important role with regard to XBRL implementation, this thesis also aims to enhance the understanding of which methods can be used to create or engineer a taxonomy, considering a scientific approach, a method of inquiry which is based on practical evidence. Additionally, it addresses the practical issue that although many corporations are willing to enhance transparency and accountability, they are hesitant towards voluntary implementation of additional disclosure practices such as XBRL exceeding legal requirements. The study intends to close gaps with regard to academic studies on

Corporate Reporting. The need for research is based on the existing literature. There are studies which conclude that converting complex narrative, including CGR disclosures, into XBRL also implies additional benefits with regard to information access (Arnold *et al.*, 2012).

In line with the segregation proposed by Bushman *et al.* (2004), the researcher will focus on CGR as one aspect of corporate reporting besides financial disclosure.

According to Kaplan (2011), it should be an objective for any accounting scholar to learn to understand the upcoming drivers for the application of accounting. Moreover, any accounting scholar should understand how advances and improvements in analytical tools in accounting can be implemented to improve the practice of external reporting (Kaplan, 2011). The analytical tools also refer to taxonomy engineering, for which contemporary exploratory factor analysis is applied, adapted to the bespoke CGR framework.

The quality of a taxonomy can be assessed using the criteria of completeness and interoperability (Zhu and Wu, 2010). The taxonomy prepared in Japan is too rudimentary with regard to the criteria of completeness to satisfy the needs of multinational FPI in the financial service sector. The Japanese taxonomy is too general, as it does not cover most of the CGR requirements. As a result, its interoperability, or in other words the degree of comparability, is low, as companies that follow this taxonomy will not be in a position to disclose in a way that makes them comparable to other corporations. Currently, based on the performed literature review, empirical studies about the implementation of XBRL for the CG Report for corporations listed on the Tokyo Stock Exchange are not documented in academic journals. However, in light of an article by Mitsui in 2011 about the Japanese experience, the author concludes that the way XBRL was provided by Japanese companies revealed that there were many errors.

1.6 Overview of the structure of the thesis

The increasing implications of CG, not only caused by the financial crisis, are described within the first chapter, “Problem Statement and Purpose”. The background of CG from an institutional perspective, which, despite its growing implication and diffusion, is still new within the academic disciplines, is explained. This section is superseded by disclosures on CG and the explanation of increasing associated complexity from a company perspective. Finally, the purpose of the DBA and the research problem with expected limitations are revealed.

In the second chapter, as part of a literature review, CG and disclosures on CG are defined and differentiated, including taxonomy and XBRL, as these three represent the main topics within this thesis.

As part of this literature review, theoretical underpinnings to explain the issue of CG are explored. As the research aims to analyse empirical international data on CGR, the theoretical part includes a wide spectrum from principal-agent, transaction-cost, stewardship, property-rights, stakeholder and institutional theory. This section completes a critical assessment of the underlying theories. The theoretical propositions are followed by an analysis and overview of empirical studies on CGR.

For XBRL adoption, theoretical explanatory patterns are revealed, as XBRL still represents a recently developed technology within Financial Reporting. In the consecutive Chapter Three, the design of the research and methodology and how this is embedded in the overall study are explained. The following chapter gives an overview of the main research concepts and explains which concept was chosen for this thesis. As part of the data collection, annual reports are analysed using content analysis. In the next step, the collected data are further analysed by applying factor analysis. Data analysis and results are elaborated in the

following chapters. Based on the theoretical and empirical studies, attributes of CGR are formulated. Finally, a reflexive diary is included.

Figure 1.1: Overview of the structure of the thesis

(Source: author, 2015)

2 Literature Review

In this literature review, the researcher begins by tracing back the issue of CG within the academic literature, followed by a review of the most dominant theories to resolve the CG issue and an attempt to provide a classification within the vast existing academic literature about CG. In a second step, the researcher will narrow down the pursued research topic and provide links to the academic research about XBRL and CGR.

While the research on CG topics has grown enormously in the last ten years, with a search on Google Scholar using the term “Corporate Governance” resulting in more than 560,000 hits since 2000, there remain many unanswered questions with regard to the relationship between CGR and XBRL (Roohani *et al.*, 2009).

In general, two types of CG research can be differentiated. On the one hand, one area of focus in the CG research is the influence of CG on enterprise value. The main question is whether good CG practice and the success of a company correlate with each other. On the other hand, one important strand within the academic literature on CG is the level related to qualitative disclosures.

Despite the extensive research, a generally accepted definition of what CG actually constitutes does not exist and no unitary theory has been developed (Brown *et al.*, 2011). This is also due to the fact that CG very much depends upon the heterogeneous social systems of countries, which influence and have a strong impact on corporations' governance (Weimer and Pape, 1999).

While CG is related to the framework within which a company is managed and supervised, CGR refers to disclosures in the external reporting about shareholders and stakeholders associated with CG. Certain CG disclosures are mandatory due to regulatory or legal requirements. Yet there is heterogeneous reporting and alternative formats which companies can pursue. In general, three main sources exist in which firms report on CG: annual reports (Patel and Dallas, 2002), corporate websites (Gandía, 2008) and sustainability reports (Kolk, 2008).

Studies about recent corporate scandals have shown that in general, discretionally narrative disclosures are used for impression management rather than for incremental information purposes, and as a result, the quality of financial reporting is generally lowered (Consulting, 2003). The further outcome of such impressionist management disclosures is that adverse capital misallocation may be caused if users behave in ways that are susceptible to such disclosures avoiding a realistic view of the company (Merkl-Davies and Brennan, 2007). Based on a study by Deloitte Consulting, Enron's corporate communication became increasingly vague and ambitious during the time when the financial performance of the corporation deteriorated (Consulting, 2003).

2.1 Definitions and scope

2.1.1 Corporate Governance

CG is a label which is frequently mentioned by academics, regulators, business managers and the broader media; however, they often fail to define it (Brickley and Zimmerman, 2010). Several definitions of CG exist, but according to Dörner and Orth (2005), CG definitions are heterogeneous and not explicit. Further, “given both the multitude of theoretical perspectives available and diversity of CG practices around the world” (Aguilera and Jackson, 2010, p. 487), a universal definition remains a challenge; however, in the academic literature, consensus has been reached that no one of these definitions can explain CG adequately (Gerum *et al.*, 2007).

Several reasons can explain that a common definition is a myth (Brickley and Zimmerman, 2010): there are different views on the reason for the existence, purpose and legitimacy of corporations (Roe, 2008), different cultural and legal systems (Mintz, 2005), country-specific characteristics (Weimer and Pape, 1999) and historical path dependencies (Bebchuk and Roe, 1999).

The different definitions cover a wide spectrum, which will be elaborated in the following section:

- Shareholder vs. stakeholder approach
- Anglo-Saxon vs. continental European
- Accountability and transparency
- Power and influence
- Management style and management system
- View of the world

Shareholder vs. Stakeholder

In the shareholder-oriented CG definition, only shareholders are considered for the relationship between the investors and the management, whereas in the stakeholder definition, a broader view is applied and the spectrum of the group of constituencies is extended to stakeholders. “Stakeholders” are defined in a broad way as consisting of “any group or individual who can affect or is affected by the achievement of the organization’s objectives” (Freeman, 2010, p.46). This view is reflected in the OECD’s definition of CG: According to the OECD (2004) CG “involves a set of relationships between a company’s management, its board, its shareholders and other stakeholders” (p. 11).

Shleifer and Vishny (1997) submitted one of the most cited articles about CG (Brown *et al.*, 2011). Therein they interpret, using a narrow Anglo-Saxon-influenced definition (Shleifer and Vishney, 1997), that “Corporate Governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment” (p. 737). Shareholders can be convinced that their investments in the companies will provide a profit, and, as the management is separated from the ownership, the owners need ways to ensure that the managers do not exploit the provided capital for their own purpose. Shleifer and Vishney’s research is influenced by the agency and transaction costs (Nix and Chen, 2013). This mistrust of owners towards the managers is reflected in the principal-agency theory. One of the main principles related to this theory is the assumption that the separation of ownership and management causes issues, which relate to conflicts of interests and problems with incentives and motivation, which are attributed to agency problems based on incomplete contracts as part of the principal-agent theory (Jensen and Meckling, 1976). As there are owners who are sceptical towards the managers, this causes an increase in transaction costs. To minimize the risk of opportunistic behaviour, owners will define governance structures, implying additional costs (Williamson, 1979; Hart, 1995).

In 1999, the OECD issued “The OECD Principles of Corporate Governance” (OECD, 1999), which mainly reflected a stakeholder-oriented definition of CG as follows (Rossouw and Rossouw, 2009): “An efficient use of the capital of the corporation is reflected in a good CG regime. Characteristics of good CG are to consider interests of a wide range of constituencies and communities in which they operate. Additionally good CG implies that boards become accountable to the company including the shareholders. This, in turn, helps to ensure that corporations work for the benefit of society as a whole. Moreover, good CG is associated with maintaining the confidence of investors – both foreign and domestic – and to attract more ‘patient’ long term capital” (OECD, 1999, p. 13).

Anglo-Saxon vs. Continental European

This definition categorises CG systems and separates the world into two main systems (Heugens, 2007). This is the Anglo-Saxon CG system, which is associated with the following landmarks: there is a short-term profit orientation, shareholder rights are strongly protected, the focus is on equity finance, ownership is dispersed, active markets play an important role in capital control and there is high flexibility on the labour markets. While the one-tier system is strongly influenced by the shareholder concept, as the company mainly aims at maximising the shareholder value, the two-tier system within the continental European system also considers the interest of the stakeholder. The two-tier system represents the continental-European CG concept within the academic literature (Cernat, 2004), which is also known as the insider, pluralistic and two-board system (La Porta *et al.*, 2000; Hall and Soskice, 2006). Its key properties are extensive employee influence through work councils, co-determination, banks as major shareholders, with stock exchanges playing a reduced role, a long-term profit orientation and debt finance as the main area of focus.

Within the Anglo-Saxon CG system, the management and the controlling board of directors are integrated in one group, while in the continental European two-tier system they are separated from each other. The CG literature has developed the comparison studies into a more pluralistic view: “Anglo-American,” “Communitarian,” and “Emerging” economies (Millar *et al.*, 2005, p. 2), and “Market-Oriented” against “Network-Oriented” systems (Weimer and Pape, 1999, p. 155).

Accountability and Transparency

Demb and Neubauer (1992) include in their definition of CG the aspect of accountability and transparency: “CG is the process by which corporations are made responsive to the rights and wishes of stakeholders” (p. 187). Each company needs to justify its actions and accept responsibility for all its decisions and results, which is the concept of accountability within the definition of CG. Accountability can only be achieved if transparency is implemented, which is increasingly important for international financial institutions and their borrowers, lenders and national authorities (Steger and Amann, 2008; van Greuning and Bratanovic, 2009; Solomon, 2011). Transparency refers to an environment in which information on existing conditions, decisions and actions can be reached and understood by all investors. Disclosure relates to the questions of how and what should be submitted as information and which aspects are made public (van Greuning and Bratanovic, 2009). Stakeholders and shareholders have high expectations for risk management, especially due to the magnitude of corporate scandals and failures: the emphasis of the business community has shifted towards internal control and risk management. This shift in expectation becomes evident in the Cadbury report:

“To meet these responsibilities directors need in practice to maintain a system of internal control over the financial management of the company, including procedures designed to minimize the risk of fraud. There is, therefore, already an implicit requirement on directors to ensure that

a proper system of internal control is in place. Since an effective internal control system is a key aspect of the efficient management of a company, we recommend that the directors should make a statement in the report and accounts on the effectiveness of their system of internal control and that the auditors should report thereon” (Cadbury, 1992, p. 26).

This implication of accountability and transparency also becomes visible in the OECD’s definition and explanation of CG. The OECD further describes the aim of a CG framework (OECD, 2004, p. 17 and 22):

“The CG framework should promote transparent and efficient markets, be consistent with the rule of law and clearly articulate the division of responsibilities among different supervisory, regulatory and enforcement authorities. The CG framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company.”

Management style and management system

A very general definition is provided within the Cadbury Report issued in 1992: “CG is the system by which companies are directed and controlled. The board of directors is responsible for the governance of their companies. The shareholders’ role in governance is to appoint the directors and auditors and to satisfy themselves that an appropriate governance structure is in place” (Cadbury, 1992, p. 15). Cadbury had a great impact on most of the CG codes developed worldwide (Heugens, 2007), the main aim of which was to design best practices to achieve high standards.

Power and influence

Tricker (2000) analyses common characteristics of CG issues throughout the history of academic economics in chronological order, from the Merchant of Venice to Adam Smith (1776), through Berle and Means (1932), Jensen and Meckling (1976), the Cadbury Report (1992) and Sternberg (1997), and concludes that CG practice is ancient and not a genuinely new phenomenon. CG issues arise whenever a corporate entity implements an acquisition (Nix and Chen, 2013). Based on this assumption, Tricker defines CG as “exercise of power over entities” (Tricker, 2000, p. 289). It is no surprise that this stream of CG literature also relates to the context in which the term “CG” is used. This was the case for one of the largest institutional investors, the California State employees’ pension fund CalPERS, in the late 1980s (Smith, 1996), which actively promoted Global Principles for CG. The incomplete reporting or the omission of disclosures about the management and control of stock-listed corporations hindered the shareholders’ ability to perform their investment decision, and as a result, the fund manager of CalPERS went on to benchmark CG practices in companies in their portfolio around the world. Due to the powerful influence, companies such as General Motors began to publish their own board governance guidelines (Tricker, 2000).

The power of shareholders to exercise their influence on the management is an incremental part of Anglo-American CG (Cuervo, 2002), which plays an important role as part of market control. However, market control can only be exercised if a high level of transparency through accurate, complete and correctly valued disclosures is presented for which the corporation can be made accountable (Hart, 1995). According to Turnbull, directors’ knowledge needs to be adequate to enable a playing field for internal corporate control and exercise power to be able to control management (Turnbull, 1997).

View of the world

This more holistic definition depends upon how the world is viewed (Clarke, 2004) and considers the fact that CG has been examined by scholars from different disciplines with different philosophical underpinnings (Aguilera and Jackson, 2010). Under a positivist philosophical view, CG mechanism are described, which solve the principal agency conflict, as the assumption is that there is an observable social reality which exists apart from the knower and can be observed through a careful process of data collection. This kind of research can provide generalizations comparable to those performed by scientists (Clarke, 2004).

Researchers who adhere to an interpretive paradigm judge CG as socially constructed. Considering this view, CG will be defined in the direction of how to understand organizational arrangements for different corporate participants who are related to a corporation. These participants consist of shareholders and stakeholders such as employees (Baker and Bettner, 1997; Ardalan, 2009). As a consequence, there is not a single or universally applicable CG principle which reflects institutional settings in all societies, cultures, corporations and epistemological underpinnings.

The focus of this thesis will be on the definition related to the accountability and transparency of CG. According to this stream, a high standard of CG is what promotes transparency and accountability (Steger and Amann, 2008). This research concentrates on the question of whether XBRL represents a means to enhance CG, focusing on disclosures.

2.1.2 Corporate Governance Reporting

Corporations submit disclosures through regulated annual reports, which are regarded as vehicles for the exchange of information that enables a firm to communicate with a variety of outside as well as inside groups (Guthrie *et al.*, 2004b). Annual reports are evaluated as a very important source of information (Nix, 2004). The management of companies report what embodies importance by applying the reporting mechanism (Bushman and Smith, 2003). According to Bushman and Smith (2003, p. 210), corporate reporting “involves periodic disclosure of firm-specific information on a voluntary or mandatory basis”.

Voluntary disclosures result from management disclosure decisions. The literature about voluntary disclosures prioritises the information role of disclosures and assumes that despite the existence of efficient markets, managers possess superior information to outside investors. In the literature, motives and forces of voluntary disclosures are explored (Healy and Palepu, 2001). Many companies are very proactive in submitting additional communication on a voluntary basis. Different reporting products are used for this: for instance, analysts' presentations. The voluntary disclosures are additionally reported to the mandatory disclosures related to the financial statements. What is often very difficult for the external investor and reader of the financial and non-financial communication is to identify mandatory or voluntary disclosures, as they are not explicitly flagged by the company. This lack of transparency can be addressed by XBRL, as XBRL automatically highlights whether the disclosure is mandatory or voluntary.

Standard components of CGR include disclosures regarding:

- the importance of good governance as part of the company-wide strategy of a leading organization;
- the board of directors (ownership, responsibilities, independence, structure, background of members, division of powers);
- committees (remuneration, audit, governance, risk management and associated charters);
- Terms of reference, codes of conduct and related policies (integrity and ethical behaviour, whistle-blowing, compliance, anti-corruption, risk management, transparency and continuous/market disclosure).

The research will focus on disclosures regarding CG.

Figure 2.1: Components of financial reporting

(Source: author, 2015)

CGR is not part of the Financial Statements. In most of the companies analysed (Section 4.2.1.1), CGR is included in a separate report titled “Corporate Governance Report or Statement”. In a broader definition, all external disclosures that make it possible for the suppliers of the financial report to follow and evaluate the governance policies, structures and distinctiveness in the practice of the corporation can be summarized as CG disclosures. According to the terminology definition of the Centre for Financial Analysis and Research (CIFAR), CGR comprises disclosures about major shareholders, management, boards and directors, officers’ remuneration, and directors’ and officers’ shareholdings (Bushman and Smith, 2003).

In a narrow definition, which is also in accordance with Junarso (Junarso, 2006), CGR encompasses only specific disclosure topics, which are directly associated with the CG mechanisms (Daily *et al.*, 2003a). These are as follows:

- Shareholder ownership and behaviour rules for shareholders, which do not hold a majority stake;
- Board of Directors;
- Assessment of independent directors, including related party transactions;
- Composition of specialized committees;
- The current level of excellence for CG and the deviation to relevant codes;
- Plan and measurements to improve CG.

Figure 2.2: Components of CGR

(Source: author, 2015)

Disclosures on CG can be separated into financial and non-financial information, while the narrative communication without quantitative information is viewed as the crucial element to improve the quality of corporate disclosures (Beattie *et al.*, 2004).

Disclosure, accounting and CG are predominantly regarded as separate concepts in the academic CG literature and there are many studies about the interrelationship between disclosures and corporate governance (Bushman and Smith, 2001; Brown *et al.*, 2011). In a broader definition, disclosure relates to all information provided by companies with regard to CG. This information can either result from mandatory laws and regulations or alternatively companies can report disclosures on CG matters on a voluntary basis with the intention to improve their reputation (Anand, 2006).

The supply of disclosures related to CG is explained by information asymmetries and agency issues between the managers and the owners (Baek *et al.*, 2009). In the CG literature, country studies try to derive common attributes of CG systems of different countries and to identify correlations between CG determinants, such as the degree of investor protection in relation to the economic success of corporations (La Porta *et al.*, 2002). CGR represents an important value driver on capital markets, as countries with enhanced investor support, investor protection and greater transparency of CGR are accounted to have increased enterprise value (La Porta *et al.*, 2002).

CGR belongs mainly to narrative disclosure and has become longer and more sophisticated in recent years. According to Smith and Taffler (2000), narrative annual reports contain almost double the amount of information compared to basic financial statements. This growing importance of descriptive sections in corporate documents requires the corporations to clearly define a disclosure policy and structure for their narrative disclosures.

The extent and position of CG-related disclosures can vary substantially in practice, as they are usually not prescribed in the annual report. As a result, this makes analysis and comparison much more difficult (United Nations, 2006).

2.1.3 XBRL and Taxonomy

In the last twenty years, a technological reversal has occurred, supported by the widespread diffusion of the internet. With regard to Financial Reporting, this trend has also led to the development of XBRL, which many accounting experts expect to revolutionize financial and non-financial reporting information.

The XBRL initiative started in 1998, influenced by the AICPA (the American Institute of Certified Public Accountants). As a result of this project, XBRL.org was created, and has subsequently become an independent organization called XBRL International that supports XBRL standards and does not intend to earn money from a legal perspective. It has over 170 members and sets XBRL specifications which are royalty-free and freely licensed to any user (Deshmukh, 2004).

XBRL provides the following advantages:

- Allows participants in the financial supply chain to improve the foundation, exchange and comparison of business reporting information (Piechocki *et al.*, 2009).
- Provides users with a standardized format, enabling software applications to exchange information more easily (Alles and Debreceeny, 2012).
- Enables the automatic processing of information with the help of software applications (Matherne and Coffin, 2001).
- Automated comparison of financial and non-financial information involves less cost, as comparison between companies, which is currently performed on a manual basis, can be processed automatically (Jones and Willis, 2003).
- Facilitates the access to more granular data, including the source for the concept, e.g. the accounting standard (Müller-Wickop *et al.*, 2013).

- Consists of meta data including specifications about the reporting entity, which is required for the monthly management report and the interpretation of the information (Zabihollah *et al.*, 2001).
- Multi-language support as well as all existing recognized international taxonomies (Kurt and David, 2003).
- User has the possibility to extend reporting elements for company-specific reasons, which are called extensions (Debreceeny *et al.*, 2011).
- Implements the core information needs of the user. XBRL does not require specification of text formatting, as the instance file is coded and not human readable (Branson, 2002). There exist viewers such as the SEC XBRL viewer, which enable conversion of the instance file and allow the report to be displayed in a standardized format.

Taxonomies, dictionaries and thesauruses have in common that they enable the classification and organization of information within knowledge management systems, which will be further explained as follows (Makoto Koizumi, 2013:

*“Taxonomy is a set of elements that allows several different items of information to be represented in an XBRL document” (Bonson *et al.*, 2009, p. 47).*

“Dictionary is an alphabetically organized list of words associated with their meaning and their pronunciations” (Makoto Koizumi, 2013).

“Thesaurus is a word-association list generically structured to enable indexers and subject analysts to describe the subject information of a document to the desired level of generality or specificity at input and to permit searchers to describe in mutually precise terms the information required at output” (Henderson, 1966, p. 72).

“Directory is a list of associated pieces of information with a very flat classification allowing a user to look up lists of related objects” (Makoto Koizumi, 2013).

“Ontology is considered a key technology enabling semantic interoperability and integration of data and processes” (Davies *et al.*, 2008, p. 3).

Developing a taxonomy, which is a synonym for classification, has a long history and can be traced back even to the origin of human language. The word “taxonomy” has its origin in the Greek verb *taxis*, which means ‘classification’, and the noun *nomia*, which can be translated as ‘law’. Combined and interpreted, it means ‘laws of classification’ (Sharma *et al.*, 2008). The classification of living organisms such as vertebrates and invertebrates was developed by Aristotle. Later, the term was used to refer to the science for the classification of living things developed by the Swedish scientist Carl Linnaeus in the 18th century. One of the most popular examples of a taxonomy is Linnaeus’s “classification of living creatures” (Anderson, 2009, p. 132).

There is virtually no limit, as almost anything could be part of a classification under some taxonomic group. A taxonomy implies that “children (lower level elements)” could lead to several “parents (upper level elements)” (Piechocki, 2007b, p. 81). The taxonomy is comparable with a chart of accounts or a disclosure list, whereas the main difference is that the XBRL taxonomy has a fixed pre-defined standard structure, so that all XBRL software can process the data (Piechocki, 2007b).

Additionally, as this chart of accounts represents a standardized reporting framework for corporations, corporations have to map their reporting requirements to this framework, and as a result of this development, XBRL has a strong impact on standardization. The existing technologies, such as PDF or Word, treat all disclosures as a block of text; however, XBRL prepares an identifying tag for each item which enables the

file to become an electronic application. XBRL belongs to XML, which enables machine-processable descriptions (Davies *et al.*, 2008).

McComb (2004) was one of the first authors to recognize the chart of accounts as a general taxonomy based on the accounting domain. Several categories exist within business and accounting entries. The main categories are assets, liabilities for the balance sheet and revenues and expenses for the profit and loss. They represent the core reference data of each financial reporting system and enable the application of consistent accounting methods and disclosure rules. Within the taxonomy, several sub-classes of accounting entries exist, such as liabilities or provisions, which are mapped to the main categories.

Figure 2.3: XBRL Taxonomy breakdown

(Source: author, 2015)

Taxonomies can be separated into different dimensions. The first dimension consists of different concepts within a taxonomy, which are intra-taxonomy differentiations. According to the IASB (Servais, 2012), with regard to IASB taxonomy, there are five different concepts:

- Core disclosure requirement concepts
- Guidance and example concepts
- Common practice/industry concepts
- Local/ regulatory concepts
- Company concepts

The second dimension is the inter-differentiation of taxonomies, as taxonomies can in general have very different perspectives. One element is the underlying accounting regime, the US GAAP, IFRS or HGB taxonomy. Multiple entry points are industry or country specifications such as the UK or Dutch taxonomy.

An additional group comprises corporate taxonomies. According to Sharma *et al.* (2008, p. 7), “Corporate taxonomies are dynamic and need constant refinement and update since organizations need to adapt to a changing environment, competition, threats, etc., which force them to modify their knowledge flows.”

2.2 Theories on Corporate Governance

According to the literature, many theories have been developed for CG and several articles and books provide an overview of these theories and their implications (Shleifer and Vishny, 1997; Stiglbauer, 2010a; v. Werder, 2011; Weißenberger *et al.*, 2011).

According to Nix and Chen (2013), who performed a study on the academic CG literature written between 2005 and 2009, the three major theories about CG mentioned were principal-agent theory, the stewardship theory and the stakeholder theory. This thesis has extended these three theories to add transactional cost, property rights and institutionalism, as the assumption is that CGR encompasses many different aspects of CG theories. Moreover, CG, due to its complexity, requires a multi-theoretic approach (Daily *et al.*, 2003b).

The following six theories – principal-agent, stakeholder, stewardship, transaction cost, property-rights and institutionalism theory – provide theoretical underpinnings of CGR. In the forthcoming sections, each theory is first summarized and then its impact on CGR is outlined.

Figure 2.4: CG theories

(Source: author, 2015)

2.2.1 Principal-Agent theory

The Principal-Agent theory plays a dominant role (Nix and Chen, 2013) within the research on CG. “Despite the diversity of theories, their share in the debate varies and the principal agent theory plays a dominating role in the overall debate” (Dühnfort, 2008, p. 424). The principal-agent theory is based on specific assumptions about economic decision-making – bounded rationality, opportunistic behaviour and methodological individualism – and its basic concept is of a contractual relationship in which maximizing utility, the existence of asymmetric information and hidden action are assumed. The associated agency-costs need to be considered for the optimal design of contractual agreements. Due to the fact that stock-listed corporations consist of a variety of different interest

groups, the principal-agent theory is a particularly meaningful theory for those corporations.

According to Jensen and Meckling, in any organization, the determination of how risks and rewards are allocated among its participants will depend upon the contracting. "It is important to recognize that most organizations are simply legal fictions, which serve as a nexus for a set of contracting relationships among individuals" (1976, p. 313).

Based on this assumption, according to Jensen and Meckling (1976), each contract represents "an agency relationship under which one or more persons (principals) engage another person (the agent) to perform some service on their behalf which involves some decision making authority to the agent" (p. 305). The issue related to the principal and the agent arises from the fact that both are supposed to maximize its utility, and therefore, according to Jensen and Meckling (1976), "there is good reason to believe that the agent will not always act in the best interest of the principal" (p. 308). According to Jensen and Meckling (1976), a limitation of principal agent conflict evolves when the principal starts to provide incentives to the agent to better align the agent's interest with the principal's by incurring additional costs. Moreover, to prevent the agent from acting against the interest of the principal, the principal will monitor the agent's behaviour, which will increase costs.

The interest divergence between the principal and the agent results from the fact that individual actions cannot be predicted and therefore contracted. Applied to annual report submission, the source of this is moral hazard on the one hand, and on the other hand, incomplete information exchange or asymmetries with regard to corporate disclosures available between the manager and the investor (Hölmstrom, 1979). Moral hazard can be explained as missing effort on the agent's side. Different kinds of situation can be identified in practice. Upon the completion of the contract, the principal is not aware of all characteristics of the agent (Hidden Characteristics), the agent's behaviour can

only partly be observed by the principal (Hidden Action) or even if the actions can be observed by the principal, the real underpinnings of the agent are not visible (Hidden Intentions). Based on these reasons for information asymmetries, the principal has the risk of adverse selection of agents, which are not capable of delivery of the expected results. Additionally, there might arise situations in which the principal is unable to suppress or prevent moral hazard (hold-up). The third basic type of information asymmetry is quality uncertainty. This concept was originally developed by Akerlof (Akerlof, 1970), who used the automobile market to describe the relationship between uncertainty and quality. Quality uncertainty means, in the context of corporate reporting, that an investor has the risk that he will invest in a lemon, as the company excludes or omits bad information on its CG. Impressionist management would also imply that the narrative disclosures about the CG of the corporation do not reflect firm reality (Merkl-Davies and Koller, 2012). The company as the seller of its own car has an information advantage in the assessment of the real characteristics of the firm-specific CG. Therefore, the information asymmetries and agency costs with regard to this quality uncertainty between the Agent, the reporting company and the investors (principals) can be reduced as long as the agent discloses information and provides proof of the high standards of CG. The preparer of the corporate reporting signals this superiority through greater transparency (Rutherford, 2003).

According to Healy and Palepu (2000), one way of solving the information asymmetry issue between the investor and the company is by providing full transparency about its private information. Healy and Palepu also refer to two other remedies to solve the lemon information problem, namely regulatory obligation and information intermediaries – for instance, analysts as well as rating organizations. For this thesis, only the first potential solution, “transparency”, will be further considered.

According to Fama (1980, p. 294), corporations are forced by market competition to solve the agency problems: “individual outside directors are in their turn disciplined by the market for their services ~ which prices them according to their performance as referees”. This is also known as the CG mechanisms (Ernstberger and Grüning, 2013), which can be separated into internal and external mechanisms: while the market represents an external mechanism, the company is dependent outside the firm.

Fama and Jensen (1983) explain that companies in general differentiate between the conduct and the supervision of the decision. They refer to the important role of outside independent managers in corporate boards, who solve agency problems by monitoring the actions of management to ensure that decisions follow the objectives of shareholders. “The outside board members act as arbiters in disagreements among internal managers and carry out tasks that involve serious agency problems between internal managers and residual claimants, for example, setting executive compensation or searching for replacements for top managers” (Fama and Jensen, 1983, p. 315).

The question of what makes an outside manager independent is an ongoing debate, which has led to mandatory CG disclosures and legal requirements for companies to give proof that the independence of their outside directors is guaranteed (Brooks *et al.*, 2009).

2.2.2 Transaction-cost theory

In contrast to the Principal-Agent theory, the Transaction-cost theory explains those CG problems with a multitude of contractual risks, as companies are regarded as a combination of several contracts, which require different governance structures. Coase (2007) has already explained the existence of companies as a result of transaction costs and describes a company as a system of contractual relationships.

There are three characteristics that have an impact on the extent of transaction costs: these are the degree of uncertainty (Akerlof, 1970), the frequency of transactions and the degree to which investments are idiosyncratic (Williamson, 1979). "Idiosyncratic goods and services are thus ones where investments of transaction-specific human and physical capital are made and, contingent upon successful execution, benefits are realized" (Williamson, 1979, p. 241). According to Williamson (1975), the discipline market capability as regarded by the Principal-Agent theory is not seen as a solution to the CG problem from the transaction cost point of view, as only internal measurements and mechanisms by the corporation to efficiently minimize transaction costs are seen as remedies for such problems. Transaction cost theories argue that transactions need to be governed. This also explains that in order to decrease transaction costs, corporations intend to increase their output by keeping the costs stable, which is the concept of economies of scale, and take advantage of economies of scope related to growing learning curve effects.

The transaction cost theory further separates the costs into ex-ante (before the contract is signed) and ex-post (after the signing has taken place). Ex-ante costs relate to search, analysis and information costs and also include costs of negotiating contracts (Milgrom and Roberts, 1990). Monitoring, controlling and enforcement costs are mainly ex-post associated costs.

For CGR, transparent reporting can help to reduce search and information costs for the investors. Ex-post monitoring costs can be reduced, as investors can continuously evaluate the CG of the company.

Opportunistic behaviour can evolve if there are information asymmetries between different contractual parties. The implementation of internal CG guidelines can reduce the risk of the development of opportunistic behaviour within the company. Additionally, transaction cost theorists recommend further specification of contracts to reduce ex-post monitoring costs. However, there is one stream within the transaction theory which concludes that in fact, contracts are always incomplete. “In a world where it was costless to think about, plan for, and write down provisions for future events, parties engaged in trade would write a ‘comprehensive’ contract, which specifies precisely what each of their obligations is in every conceivable state of the world. [...] The idea is that if the contract the parties write is incomplete, there must be some mechanism by which the gaps are filled in as time passes, residual rights of control” (Hart, 1988, p. 121 and 123). Incomplete contracts are caused by unexpected and unpredictable future events.

According to Hart (1995), additional reasons for incomplete contracts are complex external conditions and missing cognitive capabilities. According to the theory of incomplete contracts, corporations in large companies face the issue that they have too many small owners who can exercise control over the operational daily business. As a consequence, the tasks of completing these contracts are taken over by the highest CG body: for instance, the board of directors. Additionally, monitoring costs are too high in proportion to the value of the stakes of many shareholders. “In view of the managers’ ability to pursue their own agenda, it is obviously important that there exist checks and balances on managerial behaviour. A major part of CG concerns the design of such checks and balances” (Hart, 1995, p. 681). The main objectives of CG are therefore seen as: to define those mechanisms of checks and balances, to guarantee that all stakeholders’ interests are considered by

the managers and to identify early any gaps and missing provisions in contracts, which can be partially closed ex-post after renegotiation.

2.2.3 Stewardship theory

The stewardship theory is based on the alternative models of man derived from psychological and sociological traditions. While the principal-agent theory assumes human economics to be opportunistic, self-interested and self-serving, as each individual strives to maximize his or her utility, the stewardship theory, based on sociological and psychological approaches, presumes cooperative, pro-organizational and trustworthy behaviour of the agent (Davis *et al.*, 1997). Considering stewardship, "the model of man is based on a steward whose behaviour is ordered such that pro-organizational, collectivistic behaviours have higher utility than individualistic, self-serving behaviours" (Davis *et al.*, 1997).

However, that does not mean that the steward works without incentive and for free. A steward intends to maximize shareholder value, as he is aware that if he succeeds in doing so, he will be rewarded by the most groups of the organization. His personal needs can be increased more by supporting organizational collective objectives than individualistic, self-serving behaviour. This completely opposite model of man also challenges the necessity of control and monitoring of the agent. Contrary to that, the principal enables more autonomy to the steward by providing adequate resources to follow the organizational objective (Argyris, 1964). Control is regarded as counterproductive, as it does not support the pro-organizational behaviour of the steward, as his or her motivation is reduced (Argyris, 1964, p. 31).

The stewardship theory reveals several opposing assumptions and findings in comparison to the principal-agent theory. The most important aspects may be summarised as follows:

- Motivation: the principal-agent theory focuses on extrinsic motivation, including tangible exchangeable commodities, while the stewardship theory assumes intrinsic motivation – self-actualization, achievement and affiliation.
- Identification: the principal-agent theory assumes a very low identification with the organization, while the stewardship theory assumes that managers identify with the organization's goals.
- Use of Power: Principal-agent relationships use institutional power, including reward and legitimate power, whereas in principal-steward relationships, personal power is used as a basis for influencing others.
- Management Philosophy: control-oriented management tend to become agents, whereas in an involvement-oriented management context, managers are likely to become stewards

Although the stewardship-theory is almost fifty years old, it seems to be enjoying a current revival, as the IASB has decide to include stewardship as an objective alongside decision usefulness in its new framework: “Stewardship refers to the efficient administration of resources and the execution of plans for conserving and consuming them” (IASB, 2005, p. 2).

2.2.4 Property-Rights theory

This theory assumes the abstraction that trading belongings and duties is similar to the exchange of bundles of property rights. Property rights are rights of individual ownership. There is an important shift in the viewpoint from the firm as a whole to the individual decision maker with assumed utility maximization, who is influenced by the existing legal restrictions on the use and trade of goods (Furubotn and Pejovich, 1972). "The allocation of scarce resources in a society is the assignment of rights to uses of resources [...] the question of economics, or of how prices should be determined, is the question of how property rights should be defined and exchanged, and on what terms" (Furubotn and Pejovich, 1972 , p. 1139).

The basis of CG conflict is the separation between ownership and property rights in large stock-listed corporations (Jensen and Meckling, 1976). A main characteristic of such firms is that property rights are transferred from the owner to the management; however, the owner has the right to sell and to profit from the success of the company. According to Stiglbauer (2010), due to the existence of different stakeholders, the associated costs of this transfer of property rights in large public-listed companies are very high. Due to these costs, the owner has to carefully decide which specific ownerships will be transferred, how the monitoring and control of the management will take place and to what extent opportunistic behaviour can be expected. The transfer of ownership rights to more than one chief executive officer decreases the costs; however, the possibilities to act become limited (proliferation). According to De Alessi (1983), property rights will be reallocated to their highest-valued use regardless of their initial assignment, as long as the marginal utility is higher than the marginal costs.

2.2.5 Stakeholder theory

As early as 1932, Berle and Means demanded the consideration of different stakeholders within the large public listed corporations for the CG framework of the company (Berle and Means, 1932). They came to the conclusion that stakeholders such as employees might not adequately be considered by the corporation and asked “in whose interests should the quasi-public corporation be operated?” (Berle and Means, 1932, p. 333).

The stakeholder theory assumes that all stakeholders who participate in the company with legitimate interests have the same universal rights (Donaldson and Preston, 1995). According to Donaldson and Preston (1995, p. 68), “all stakeholder relationships are depicted in the same size and shape and are equidistant from the ‘black box’ of the firm in the centre”. According to the stakeholder theory, managers have to establish and monitor what is the best interest of all groups who have a direct or indirect stake in the business. Stakeholders are relevant if they have a legitimate interest in the company, which is not only dependent upon their capital investment and consists of, but is not limited to, the following groups: shareholders, employees, customers, suppliers, external consultants and other groups (Freeman, 1984). “The stakeholder approach is about groups and individuals who can affect the organization, and is about managerial behaviour taken in response to those groups and individuals” (Freeman, 1984, p. 48). Managers should learn to understand the needs of their stakeholders and strategically manage them. The stakeholder theory has found its managerial equivalent in the balanced scorecard (Jensen, 2001, p. 298). Shareholder primacy alone is not supported by the stakeholder theory; however, shareholders can exert specific rights such as voting rights, which stakeholders are not granted. Stakeholder rights are not protected, as legal systems do not involve such stakeholders (Blair and Stout, 1999).

However, stakeholders try to put pressure on the corporations so that their interests are considered. According to Frooman (1999), the stakeholder influence very much depends upon the connection between the stakeholder and the firm. A high level of dependence implies that the welfare of the firm is closely tied to the welfare of the stakeholder. In line with the resource dependence theory, after the stakeholder has provided resources to the firm and has power to influence, the stakeholder will influence the firm to withhold those resources.

Stakeholders are often separated into internal and external stakeholders, with employees, owners, supervisory board members and management board members being internal while suppliers, customers, banks and insurance providers are defined as external stakeholders.

Several studies focus on the question of whether there is a hierarchy with regard to stakeholders' importance. Some studies lead to the finding that the influence of all stakeholders has an intrinsic value and none of them represent a dominant interest (Clarkson, 1995; Donaldson and Preston, 1995). Other studies assume employees to be the most crucial in holding an internal stake in the company, while the customers are the most important external stakeholders, and conclude that there is a hierarchy with regard to the importance of stakeholders (Wentges, 2002; Brönnimann, 2003).

What makes it more complex is the fact that stakeholders can belong to several groups: a customer or an employee might also be a shareholder or a bondholder. Therefore, it becomes even more important for the management to identify and cluster its most important stakeholders.

2.2.6 Institutional theory

The stakeholder theory is extended by the institutional theory, which considers that direct stakeholders are not the only possible parties to put pressure on the company. Institutional theory assumes that companies have to adjust to general norms of institutions (Coffee, 1991). Consider sociological parameters, Davis (2005) assumed that strong, convincing and relevant CG research tries to provide reasons for institutional organizations and their interrelationship to other entities. This is in contrast to the agency or transaction cost perspective, which identifies conflicts of interests. Deeg and Perez (2000) concluded that standardisation of the existing CG also contributed to the harmonization of institutions within the European Union. As part of the scientific discipline of economics, Groenewegen (Groenewegen, 2004) concluded that institutional economics adapt their main interest from companies to institutional macroeconomics with the aim to better understand CG configurations and practices.

Derived from the increasingly relevant systems theory, institutional theory assumes that the basis of organizations is more sophisticated than merely production in markets, as culture and the social environment play an increasingly important role. This theory concludes that legitimacy is a dominant driver of organizations and organizational actors do not only compete for scarce resources (Chizema, 2010).

As a consequence, companies have to respond in their CG disclosures, as the pressure of the institutions is so high that the management's opportunistic behaviour is influenced. The academic literature agrees that listed companies compete for capital and the rules of the game are that CG is very important for investors' investment decisions (Nestor and Thompson, 2000). In our increasingly global economy, a whole country is often viewed from the perspective of its CG practices (Johnson *et al.*, 2000).

2.3 Theories on Corporate Governance Reporting

Referring to the last chapter, investors' quality uncertainty about the company's internal management skills and governance mechanisms can be regarded as one of the main reasons for the CG issue. Due to this information asymmetry between the internal company's perspective and external stakeholders and shareholders, companies intend to increase transparency by providing additional disclosures on CG matters. As regulators have increasingly demanded additional disclosures in recent years, it has become increasingly difficult to separate those additional mandatory disclosures from additional voluntary disclosures. Mandatory disclosures with regard to the financial statements are aligned to the application of standards from an accounting standard board. The following paragraph therefore considers theories on disclosures on financial reporting.

2.3.1 Full disclosure theorem

This theorem assumes that companies will disclose all available information, as they intend to increase their value. There are many good reasons why additional disclosures might cause an increase in the value of the firm. Company insiders have an information advantage compared to outside investors. Additional disclosures of the insiders' information lower information asymmetries (Hermalin and Weisbach, 2012, p. 195). Securities offerings could be supported by this, with a consequent decrease in the cost of capital. The first authors to formalise this positive impact of additional disclosures were Diamond and Verrecchia (1991). The two researchers created a model that shows that disclosures improve the liquidity of a firm's security by reducing the price impact (Diamond and Verrecchia, 1991). Empirically, this was supported by a study from Leuz and Verrecchia (2000), considering a selection of corporations with German origin converting from German national accounting to IFRS, which led to a decrease in bid/ask spreads as well as increased trading volumes. In this study, it was shown that increased

disclosures have a significant influence, as the cost of capital is decreased. As in Akerlof's "lemon" model, dated back to 1970, asymmetrical information between the "seller", which is the provider of the CG report, and the "buyer", the information receiver, causes uncertainty about the true quality of the product and therefore the trade can be damaged (Akerlof, 1970, p. 499).

As there seems to be no doubt about the value-increasing impact of increasing disclosures in the past and in recent academic literature (Berle and Means, 1932; Leuz and Verrecchia, 1991), the main question that arises is why corporations do not seek to increase disclosures on their own and why lawmakers have to enforce regulations on increased disclosures.

According to this theorem, no restrictions exist with regard to costs, timing and information availability. This theory is based on the assumptions that the immediate release of all private disclosure information to the capital market is the equilibrium strategy, which is applied by the companies (Grossman, 1981; Milgrom, 1981; Wagenhofer, 1990). Companies are therefore willing to release all their private information on a voluntary basis. Mandatory disclosures subject to regulation are redundant, as there is no inducement for corporations to withhold relevant disclosures from the public. However, mandatory disclosures have increasingly been introduced by regulators and governments. What is the underlying reason for this? Moreover, are there circumstances in which a company might not choose to disclose all private information? Companies will not seek the equilibrium strategy, reporting all information, due to the existence of associated reporting costs. This decision is also a consequence of the fact that increasing disclosures also imply more information for competitors, which could have a negative impact after the publication of increased disclosures.

2.3.2 Discretionary disclosure theorem

Discretionary disclosures are defined as voluntary disclosures which are not based on legal requirements (Verrecchia, 1983). According to the discretionary theory, regulation of disclosures is needed for a number of reasons. First, intervention by regulators supports the maximization of social welfare and prevents investors from only maximizing their individual capital gains (Pigou, 1938). Disclosures about CG activities bear the risk that the companies will try to omit the disclosure, as management does not intend to distress investors. Additional information about companies' investment opportunities enables the investors to invest capital in those projects which lead to higher returns and growth perspective. The lack of transparency can lead to misallocation of capital. Introducing mandatory disclosures by regulators can lead to optimization of the capital allocation, as a company without these regulations will not provide such information to investors, otherwise jeopardizing its own profit by supporting competitors' information aspirations.

Secondly, regulatory interventions are also supported by providing incentives for companies to follow higher quality CG. Even if companies are willing to implement higher quality standards of CG, it may happen that over the long run they change their commitment. Regulatory intervention implies that companies are forced on an ongoing basis to implement a high quality of CG.

Verrecchia (1983) and Wagenhofer (1990) began to introduce costs of disclosures that companies face if additional voluntary disclosures are provided. According to Verrecchia (1983), those costs arise as corporations need to prepare and disseminate the disclosure information. Due to the existence of costs, Verrecchia (2001, p. 60) therefore assumes that managers prepare voluntary disclosures on a discretionary basis. They will choose those disclosures that are favourable for the company and prevent bad news. Therefore, instead of a full disclosure, only partial disclosure equilibrium will be the outcome (Verrecchia, 2001, p. 60).

The voluntary disclosure literature is full of articles describing the circumstances and the conditions for such partial disclosure equilibrium. Managers' withholding of information was explained in the literature according to Verrecchia in terms of three main issues: 1) dependence on exogenous proprietary costs; 2) dependence on objective disclosures submitted by corporations; and 3) dependence on the objective of the manager to increase the company's shareholder value (Verrecchia, 2001).

2.3.3 Quality of disclosures and taxonomies

The extent of information provided externally by companies can have a great influence on the investor's investment decisions (Singhvi and Desai, 1971). However, quality of disclosures is a rather intangible concept and is difficult to clearly define. The criteria for quality of disclosures and the capital market consequences are the basis of many studies on disclosures (Li and Rong, 2010; Miihkinen, 2012; Abraham and Shrides, 2014). Worldwide regulators assume that narrative disclosures are important to increase the decision usefulness of disclosures (Core, 2001). Researchers in social science have in the last years focused on investigating disclosures in connection to the financial crisis (Kothari and Lester, 2012; Verrecchia, 2012; Abraham and Shrides, 2014). According to Dragu and Tiron-Tudor (2013), the financial crisis can be assumed to be the root cause of the increased demand for corporate reporting transparency. To reach transparency, corporates need to provide the information requested by the market, and to reflect accountability, these disclosures have to be provided consistently (Beattie *et al.*, 2004).

Disclosures to the stakeholders are made public in different ways. Healy and Palepu (2001) differentiate disclosures into three separate categories: The most popular form of disclosure is the legally binding financial report, which includes the audited financial statements, comprising the footnotes and, depending upon the jurisdiction, the management discussion or management report (Krawitz *et al.*, 2005). As an example, according to section 264 number 1 of HGB (German Commercial Code), the management report has to be audited and is mandatory in addition to the financial statements for large corporations (Weißenberger *et al.*, 2011).

Second, there are additional non-mandatory voluntary disclosures, such as management forecasts within analyst presentations and information

on the corporate websites, which have become partly mandatory in the past (Healy and Palepu 2001).

Finally, there is a group of disclosures provided by information middlemen such as analysts, the financial press and journalists, which follow the aim to analyse the primary disclosures submitted by the corporates (Cohen *et al.*, 2012).

In 1971, Singhvi and Desai investigated the characteristics of the corporations that they treated as the population of their research. Based on empirical evidence, they concluded that quality of disclosures refers to the following criteria: completeness, accuracy and reliability. In this respect, it is possible to conclude that XBRL might lead to more qualitative disclosures, since it can enhance those characteristics: this issue will be addressed in the empirical literature review.

Attribution theory also explores how maximization of the manager's utility leads the management to avoid disclosing bad news. According to this theory, the managers try to transfer the responsibility associated with negative news to external uncontrollable events or variables (Abrahamson and Park, 1994). This enables them to blame those uncontrollable events for management failures. According to the previous conclusion (Beretta and Bozzolan, 2004), this attribution behaviour occurs if management submit bad risk news. Therefore, the conclusions can be drawn that the magnitude of good or bad risk-related news made public will thus be volatile and that it is not possible to assess reliably the distribution of good and bad corporate disclosures according to the academic disclosure theory.

The quality of a taxonomy can be assessed using the criteria of completeness and interoperability (Zhu and Wu, 2010). Completeness describes the extent to which all reporting disclosures in terms of depth, breadth and scope are covered by reporting elements in the taxonomy. If company-specific extensions are not required for companies using

this taxonomy, the taxonomy obtains complete coverage. Interoperability is defined as the possibility to exchange financial reporting information between different organizations applying one data standard. The greater the interoperability, the more the data standard is advanced (Zhu and Wu, 2011).

Data quality is a multidimensional concept that has several dimensions, of which completeness and relevance have the highest impact (Zhu and Wu, 2011). Early indications of XBRL filings (Boritz and No, 2008) have shown that the quality of XBRL filings is impacted by many errors and inadequate tagging of elements, which is even confirmed in empirical studies covering later XBRL findings (Debreceeny *et al.*, 2010). Quality also relates to questions of whether the taxonomy is correctly applied, whether extensions are necessary or whether the mapping from the disclosure elements to the reporting elements of the taxonomy is performed correctly.

Due to the fact that XBRL has been submitted for only a short period of time, longitudinal studies are still not yet widespread. According to Efendi, who analysed voluntary application of XBRL for a longer timeframe, there is a clear indication of a learning curve effect for XBRL filers (Efendi *et al.*, 2011a), as their XBRL filings improve over time.

2.3.4 Relationship between Corporate Governance and Corporate Reporting

In general, CG seeks to identify mechanisms that are expected to decrease issues caused by the separation between control of capital and ownership of capital. In general, corporate governance seeks to identify mechanisms expected to reduce these agency problems and develop organizations from which public traded corporations can benefit (Walsh and Seward, 1990). Internal as well as external CG mechanisms rely very much on credible information. Credible information is defined within the accounting literature as accurate, complete and useful information, which enables a realistic impression of the corporation's net assets and financial position (Needles and Powers, 2010).

Performance and success of management is monitored by boards considering financial and non-financial indicators based on accounting-related information. They rely on the credibility of such indicators to provide a realistic impression of the corporation's net assets.

In many jurisdictions, the auditor is mandated by the board of directors to perform audit procedures, testing and process analysis to finally prepare an audit opinion, which will be become publically available in the annual report. As part of these tasks, the investor is informed of material misstatements as well as inadequate internal controls with regard to the process of preparation of financial statements. The auditor's task is also to validate the financial indicators, which are used for monitoring by the supervisory board.

The implication of non-financial indicators has increased in the past, as studies indicate that corporate failures very much depend on management skills (Lin *et al.*, 2008). In the study from Lin and Chiu, it is shown that the combined use of both financial and non-financial features leads to a more accurate prediction of financial distress. In contrast, a study

by Farber in 2005 reveals that fraud firms have poor governance and less extended financial and non-financial disclosures (Farber, 2005).

The literature on accounting for Governance has so far very much focused on the financial effects for the CG mechanisms (Bushman and Smith, 2003). Recent studies conclude that markets would benefit if companies extend non-financial disclosures (Cohen *et al.*, 2012); however, the level of detail varies considerably among companies (Holder-Webb *et al.*, 2008) for this type of disclosure. According to Patel and Dallas (2002), disclosures on governance are among the main items that allow companies to differentiate from each other with regard to annual report disclosure rankings.

2.4 Empirical studies on Corporate Governance

Since the first article about managerial agency problems was issued, a magnitude of different empirical national and international studies have been made public. They can be classified from either a “de-jure” study perspective or a “de-facto” research approach. “De-jure” studies are those that provide an analysis based on the legally required CG “rule of the games” (Barker, 2010). “De-facto” studies investigate the actual implementation of CG in corporate reality. National studies about CG focus on country-specific CG frameworks and international studies have a broader scope. Finally, a third overall differentiation variable is the degree of complexity: i.e. whether these studies rely on less complex single parameter analysis or if they consider multi-parameter or holistic CG systems. Another common criterion for classification with regard to CG is the differentiation according to generations (Denis and McConnell, 2003).

First-generation studies are those which have a focus on “de-lege” or “de-facto” requirements and analyse CG specifications on a country-by-country basis. Second-generation research consists of international research studies. The third generation takes into account multiple parameters such as the CG index studies or the rating-based research studies. These third-generation studies also consider reverse causation, e.g. good CG not only leads to performance but performance might also have an impact on good CG.

The following figure summarizes the systematic classification of the CG literature.

Figure 2.5: Classification of CG literature

(Source:*Denis and McConnell, 2003 , **Demsetz and Villalonga, 2001)

2.4.1 First Generation Studies

Those national-oriented empirical CG studies mainly direct the focus on the question of whether the assumption that a company is compliant with a CG code implies a direct positive impact on the firm's performance. There are no clear results, as research concludes that a similar correlation between the company's profit and compliance with CG and other studies cannot confirm those findings (Bhagat and Bolton, 2008).

Table 2.1: Empirical CGR studies based on national CG codes

Study	Methodology and Results
Patel and Dallas (2002)	Analysed mandatory filings (10-Ks, annual reports, and proxies) made public by S&P 500 companies in 2001. The study compares financial with non-financial disclosures and observes that most detailed corporate reporting information is committed to financial issues. The volume of disclosures on non-financial issues is much more volatile than that of financial disclosures. The authors observed that the least detailed disclosures pertained to share-holdings, possibilities for investors to exert influence, management, board structures and processes. Based on the relative importance of these items to shareholders, the researchers conclude that non-financial disclosure in annual reports requires improvement.
MacNeil and Li (2006)	Study of corporations in the UK that are not in line with the Combined Code UK; performance does not deteriorate when companies deviate from the CG Code.
Kolk (2008)	A CG section is disclosed by 81 percent of the financial reports from the global Fortune 250, while 55 percent of corporate responsibility (sustainability) reports include disclosures on CG.

(Source: Stiglbauer, 2010)

2.4.2 Second Generation Studies

Much of the work in this research stream has mainly analysed dissimilarities in countries' legal systems, including the enforcement mechanisms and their impact and relationship to how economies and capital markets perform (Bebchuk and Weisbach, 2010). The research that is the basis for this second generation is associated with La Porta *et al.* (1998). According to this author, the level at which investor rights are backed by countries' laws, including enforcement, are essential characteristics for countries' development of CG. Their empirical evidence provides an indication that significant differences exist across countries with regard to the extent of investor protection. Countries which imply a low level of investor protection are often linked to concentration of equity ownership within firms and weakly developed public equity markets.

One of the main focuses of the comparative CG research was on identifying differences with regard to country governance. Moreover, an increasing number of articles about US firms indicate that company dissimilarities in governance lead to a significant impact on corporate value and success. One of the most cited articles in the academic literature on CG is an empirical study from Gompers *et al.* (2003). The main finding was that a governance index (the G-index) based on 24 disclosures does not correlate with corporate value. Based on that, the conclusion could be drawn that disclosure does not always positively influence corporate value.

Due to the increasing number of international CG studies, the following table gives an overview of the most cited studies. These international studies have mainly in common that a positive effect between CGR and corporate performance can be found.

Table 2.2: Empirical CGR Studies based on international CG codes

Study	Methodology and Results
Gompers <i>et al.</i> (2003)	Study of 1500 US companies based on a CG Index involving 24 provisions; portfolio of companies achieve higher performance on Tobin Q, Earnings per share and stock return
Larcker <i>et al.</i> (2007)	Study of 2106 US corporations related to different CG variables; no effect between performance and CGR
Aggarwal <i>et al.</i> (2007)	Study of 5259 corporations, 64 CG attributes; positive effect between CGR and firm performance, measured as Tobin Q
Bauer <i>et al.</i> (2008)	Survey of 356 Japanese corporations based on 500 criteria of the GMI Governance; significantly higher stock performance for corporations with higher degree of CGR compliance

(Source: Stiglbauer, 2010, adapted by author, 2015)

2.4.3 Third-Generation Studies

The third generation of CG studies takes into account that CG not only has implications for performance, but also that there is a reverse effect from performance on CG. Performance can drive governance: for instance, if a private informed insider asks for share awards before high profitability is made public as part of CGR. According to Becht *et al.* (2003, p.10), this approach is called the “third generation approach”, which is based on “vastly improved econometrics”, as multi-equation models instead of single-equation models are used.

Table 2.3: Empirical CGR Studies based on international CG code with reverse cause effect

Study	Methodology and Results
Demsetz and Villalonga (2002)	511 corporates from all sectors of the US economy for which there were data about ownership. Two equations with performance to CG and ownership by management were formulated while performance is measured with Tobin's Q. Result: the single equation model is biased. The two equation model does not confirm that variation in ownership results in systematic variations in observed firm performance.
Stefanescu (2011)	Compliance with OECD CG principles in European Union member states was analysed. Survey applies another method for analysing the quality of disclosures (Jaccard's similarity coefficient) compared to studies from earlier periods. The codes coming from various economic fields issued in collaboration with several institutions achieved a high score with regard to quality of disclosures. Codes which were developed by industry or institutions could not reach the same level of transparency.
Agrawal and Koeber (1996)	<p>Several different mechanisms were studied:</p> <ul style="list-style-type: none"> • shareholdings of employees who dispose of strictly confidential information • directors who are not employed by the company • strategy for the issuance of debt • institutional investors • shareholders with large amount of shares • market for the employment of managers <p>A relationship was found only between firm performance and four specific mechanisms: insider shareholdings, outside directors, debt and corporate control.</p>

(Source: Stiglbauer, 2010, adapted by author, 2015)

The research project can be classified as belonging to the third generation of CG literature, as it involves international CG studies.

2.5 XBRL and taxonomy

2.5.1 Theories about XBRL adoption

Extensible business reporting language (XBRL) implies a computer language which facilitates the communication of financial reports, which are exchanged electronically, as instead of mapping the manual data, an automatic processing becomes possible. XBRL has the potential to rectify current financial reporting problems (Weber, 2003). It is used end-to-end within the process of financial reporting and mainly enables the seamless electronic interchange of corporate disclosures between different electronic networks (Troshani *et al.*, 2014). By standardizing the form in which financial data are exchanged, XBRL can integrate information flows within communities of diverse organizations that can generate enormous efficiencies (Deshmukh, 2004; Debreceeny, 2007; Locke and Lowe, 2007; Pinsker and Li, 2008). Furthermore, XBRL has the advantage that it is extensible, particularly as it enables the addition of specific features and thus enhances its usability without replacing existing accounting standards (Locke and Lowe, 2007; Boritz and No, 2008). The next section gives an overview of existing theories with regard to the usage and diffusion of XBRL.

2.5.1.1 Innovation diffusion theory

According to Troshani and Rao (2007), XBRL is an arising innovation that enables the interchange of corporate disclosures. The understanding of innovation, information technology and its diffusion are crucial for projecting the adoption of XBRL. Information technology adoption behaviours exist as an important issue among academics and practitioners alike. As a result, the past decade has witnessed considerable research activity which focuses on understanding the processes underlying such behaviour. According to Rogers and Shoemaker, when their article “Communication of Innovation: A Cross-Cultural Approach” was

published in 1971, there were already 1500 publications dealing with the communication of innovations (Rogers and Shoemaker, 1971).

Roger's book "Diffusion of Innovations" (Rogers, 2003) provides the basis for the foundation of a theory about the diffusion of innovation. Much research within the information system field has applied this theory to provide research on the diffusion of information technology innovation (Attewell, 1992; Taylor and Todd, 1995; Fichman and Kemerer, 1997). This theory is applied to XBRL, which can be traced back to several academic publications about XBRL (Pinsker, 2007). Diffusion is defined according to Rogers (2003) as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5). Based on empirical results, a lot of these studies have analysed different situations in which a new technology has started and the varying degrees of its successful implementation are associated with its overall diffusion. The adoption of XBRL is comparable to these kinds of acceptance issues. The idea of combining XML with standardized business transaction can be considered as an innovation compared to the usual business actions. There is progress from a document-based to a paperless digital environment; however, the utility is higher if more businesses participate in this development.

2.5.1.2 Technology Acceptance Model

According to Al-Gahtani (2001) the main focus for the analysis of technological innovations has been to identify the role of potential users' perception of the adoption of a technology. TAM describes the intention to agree to or support a technology, while the Diffusion of Innovation (DOI) theory, in contrast, undertakes an assessment of current system usage (Davis, 1989). Considering the multitude of earlier studies on TAM, actual adoption could be identified as being closely interrelated to the intention to adopt an IT (Pinsker and Wheeler, 2009).

One of the key tenets of the TAM is that perceived usefulness and attitudes toward technology adoption can serve as predictors of the adoption of IT (Pinsker, 2007). According to Pinsker (2007), it is probable that corporations will adopt XBRL if a favourable opinion exists and if it is regarded as a provider of user advantage.

Moreover, according to Al-Gahtani (2001), empirical evidence is provided that the TAM can be applied for corporations outside of North America. Concluding from that, the TAM can be regarded as an adequate theoretical model for projecting technology adoption, including XBRL.

2.5.2 XBRL impacts and issues

The literature review is structured in such a way that existing systematic literature reviews are considered, followed by a review of individual articles that relate to the specific research question. In 2010, Roohani *et al.* provided a first systematic analysis of articles about XBRL in academic and trade journals between 1998 and 2008 (Roohani *et al.*, 2010). Based on this study, there have been a total of 53 studies, which were published in a total of 28 academic journals summarized between 1998 and 2008; however, the predominant number of articles was published in trade journals, with about 1600 editions in the same period. The majority of the 53 published articles are constructive and use a deductive methodology. As more countries have started to implement XBRL, the frequency of XBRL-related articles has been increasing steadily since 2006 (Roohani *et al.*, 2010, p. 141) and the methodology has changed to an inductive method based on empirical data. The global XBRL mandates and the increasing diffusion stimulates more interest in XBRL among the academic community. Roohani *et al.* conclude that in the future, research will include CG and integration of financial and non-financial information (Roohani *et al.*, 2010, p. 143).

In 2011, Urdari *et al.* published a literature review in which they concluded that despite thirteen years of research around XBRL, the num-

ber of articles is still low; however, the research questions are increasing as researchers become interested in the topic (Urdari *et al.*).

In 2013, the most recent and comprehensive literature review was made public, which included a review of 93 articles about XBRL considering impacts and issues (Müller-Wickop *et al.*, 2013). Müller-Wickop *et al.* concluded that there is a “great deal of speculation in literature regarding the potential impacts and issues of XBRL” (Müller-Wickop *et al.*, 2013, p.13). The authors identified four main benefits: quality, development, efficiency, and flexibility:

- **Quality**

- *Increased comparability:* Comparability has two main directions: the first one encompasses the level of standardization, which enhances the comparison of financial and non-financial data among corporations and/or subsidiaries. The second direction focuses on firm-level taxonomies, which decrease the possibility of comparing financial and non-financial data (Alles and Piechocki, 2012). Therefore, standardized taxonomies bear the advantage of using common terminologies and similar concepts for mapping elements (Plumlee and Plumlee, 2008). Additionally, it can be concluded that XBRL supports a continuous representation of detailed corporate disclosures (Debreceeny and Gray, 2001). Additionally, XBRL enables interoperability between different taxonomies (Debreceeny *et. al.*, 2009), as it represents a data standard with an identical structure.
- *Increased transparency:* According to Mihaela (2013), XBRL enhances transparency by enabling access to detailed information provided by organizations, including easy access and the possibility to process information, even if it is reported in multiple languages or is dependent upon dissimilar regulations. (Mihaela, 2013). XBRL ena-

bles a consistent representation of aggregated data that multiple divisions/ subsidiaries provide, as each underlying business transaction can be traced (Valentinetti and Rea, 2013).

- o *Increased accuracy:* As information is standardized and therefore can be exchanged between different applications and systems, the complexity of integrating different processes is reduced (Piechocki, 2007b). The frequency of errors decreases, as mapping or reconciliation of information due to incompatible applications is no longer required. XBRL improves the accuracy of corporate disclosures presented (Debreceeny and Gray, 2001). An incentive is provided to develop homogeneous reporting processes including internal controls (Higgins and Harrell, 2003).

Based on the literature review, another positive impact of XBRL is that auditors can upload and perform audit procedures in a timely manner, as financial data are standardized (Robert, 2003). According to Grasegger and Weins (2012), continuous audit improves the overall audit quality and XBRL supports the requirements of continuous audit.

- o *Improved analysis:* Many authors within the literature on XBRL agree that access to relevant financial information is enhanced by XBRL (Debreceeny and Gray, 2001; Troshani and Rao, 2007; Alles and Piechocki, 2012), resulting in major improvements to search, reporting and analysis functionalities. The development of value adding is facilitated, as less time is spent on data mapping and analysis and decision-making can be further prioritized.

- **Efficiency**

- *Time savings:* In the literature, it can be often found that XBRL enables process improvements for the close of reporting, as the electronic creation, processing and electronic communication of financial information via XBRL encounters a reduced cycle time (Valentinetti and Rea, 2012; Enachi, 2013). Thus, numerous authors conclude that XBRL enables faster reporting (Gomaa *et al.*, 2011). As a consequence, this would support timely decision-making.
- *Improved market efficiency:* Many authors conclude that XBRL has the potential to indirectly reduce information asymmetries on financial markets (Efendi *et al.*, 2011a). Investors benefit from the improved transparency and the power of information providers is reduced. Throughout the academic literature, it can be found that corporates filing in XBRL support the aspirations of investors, while the availability of XBRL submissions implies advantages for the investors (Jones and Willis, 2003). As a consequence, the general efficiency of the financial market is improved.

- **Uncertainty**

- *Software support:* The success of XBRL very much depends upon the availability and development of software programs, as the whole process is otherwise very much error-prone and not manageable without a reliable software application. However, the software vendors, which provide solutions, are still at an early development stage (Piechocki, 2007a). The current state of available software application is still poor compared to other standardized reporting tools (Miloš and Zuzana, 2006). Several reasons for the limited offerings of XBRL tools are stated within the literature: demand by investors is low, associated with XBRL's high complexity, incomplete know-how and XBRL-enabled software, which is available as free shareware (Boyer-Wright *et al.*, 2010). Furthermore, existing solutions are independent XBRL applications, which do not offer integrated solutions for the whole financial statement process. There are signs that the larger Enterprise Resource and Planning vendors such as SAP (Cohen, 2009) and Peoplesoft and the larger Financial Reporting solutions providers such as IBM have identified a missing application in their product portfolios and therefore have acquired smaller XBRL vendors. SAP purchased Cundus XBRL Solutions in 2010 (SAP, 2010) and IBM acquired Clarity XBRL Solutions in 2010, which confirms this trend.

Standardization issue: XBRL can have the reverse impact on standardization, according to Wagenhofer (2003). As long as disclosure practices vary due to country-specific and firm-specific differences, XBRL can only make those differences transparent. XBRL in general differentiates between elements of the taxonomy and extensions, and for each element, this needs to be defined by the XBRL user. This has the impact

that a large number of national variations in rules for calculation and dimensions are required, including increasing standardization effort for taxonomy design (Roohani *et al.*, 2009). Although XBRL enables the extensibility of taxonomies, corporations need to consider the trade-off that extending the taxonomy also encounters more firm-specific information and this has the reverse effect that less standardization of firm content and decreased cross-sectional comparability is achieved. This trade-off is referred to in several articles in the academic literature (Piechocki, 2007b; Swanson *et al.*, 2007).

2.5.3 Selected empirical studies about XBRL

This section will give an overview of the available literature with regard to benefit assessment and advantages, which XBRL is expected to reveal if implemented by corporations. Different performance indicators are chosen to evaluate whether XBRL adoption has a positive impact on information quality. These studies have in common that they are based on empirical data, as companies ex-post XBRL implementation are compared to companies ex-ante XBRL. Different indicators for measurement are selected by the researchers to evaluate whether XBRL implementation helped to increase the decision usefulness of the company's disclosures.

The first group of articles apply the concept of accruals, which often reflects the "degree of earnings management" of the company (Peng *et al.*, 2011, p. 110). The second group considers information efficiency, change in stock return volatility and event return volatility. In the study with the largest sample ever collected, performed by Joung *et al.* (2012), several findings with regard to XBRL implementation could be identified. Post-XBRL introduction, increasing information efficiency, decreasing event return volatility and decreasing stock returns volatility for 428 firms (1,536 10-K and 10-Q filings) could be observed. The third group focuses on the analyst and investor. According to Ly (2012), regression analysis reveals significant increases in analysts' coverage and the quality of their earnings forecasts after XBRL adoption.

Finally, Yoon *et al.* (2011) focus on more general indicators to assess the overall development of information asymmetries before and after the adoption of XBRL. The authors of the study apply various statistical methods consisting of t-tests as well as multiple regression analysis with the aim of analysing the influence of XBRL adoption on information distribution related to the capital market. The main finding with regard to the study is that a material negative correlation between XBRL application and information asymmetry can be measured, which implies that XBRL improves the information distribution (Yoon *et al.*, 2011). This positive effect can be measured to a higher extent for companies with higher revenues and employees (Yoon *et al.*, 2011).

Table 2.3: Overview of existing empirical studies about XBRL

Focus	Main Findings	Sample/ Country	Author of Study	Method
Mandatory XBRL Filings	Level of accruals decreased post-XBRL; information acquisition costs are lowered	Shanghai Stock Exchange and Shenzhen Stock Exchange, China	(Wang and Seng, 2014)	Statistical analysis of Financial Statements ex and post-XBRL implementation
Comparison of Taxonomies	Comparison of commercial and industrial taxonomies: XBRL reports are about 90 to 95% accurate.	67 companies consisting of commercial and industrial corporations which prepare their financial statements under US GAAP	Bovee <i>et al.</i> (2002)	Theoretical model
Quality assessment of XBRL Filings	Metrics are developed for the evaluation of completeness and relevance of the XBRL standard. Results show quality issues in the taxonomies	Study based on 500 companies' US GAAP taxonomies	Zhu and Wu (2011).	Empirical
Corporate Governance	Voluntary filers with the SEC using the XBRL format are associated with superior CG and operating performance relative to their peers	Authors use a CG index to rank companies.	Bhattacharya (2008)	Empirical

(Source: author, 2015)

Table 2.4: Overview of existing empirical studies about XBRL

Focus	Main Findings	Sample/ Country	Author of Study	Method
Investor Perception of XBRL	Does XBRL change the view of potential investors? XBRL can help to increase transparency, as information is directly available without the necessity to read and collect it.	Experiment with ninety-six second-year MBA students, who represented non-professional financial statement users.	Hodge <i>et al.</i> (2004)	Experiment
Voluntary XBRL Filings	Voluntary XBRL filings have incremental information content. 1.2% to 8.0% of the general information content in earnings disclosures is related to XBRL filings	Voluntary Filing Program SEC; Sample: 342 Filings from 2005 to June 30, 2008	(Efendi <i>et al.</i> , 2010)	Non-directional test to detect market reactions based on Pattell (1976)

(Source: author, 2015)

Table 2.5: Overview of existing empirical studies about XBRL

Focus	Main Findings	Sample/ Country	Author of Study	Method
Long-term Analysis	Rate of Voluntary Adoption is very low, at 2%. Voluntary filers appear to have characteristics consistent with being leaders or innovators relative to their industry. Efficiencies in filing annual and quarterly reports appear to be implemented progressively over time.	Sample consists of 137 companies, which participated in the SEC Voluntary Program (2005-2008)	(Efendi <i>et al.</i> , 2011b)	Empirical
Delphi investigation	Study to explain voluntary adoption of XBRL. The study's finding was that the two reasons were important for a non-mandatory adoption of the standard: to get superior intellectual capital related to XBRL and to give proof for the achievement of an innovative first mover.	Sample consists of 137 companies, which participated in the SEC Voluntary Program (2005-2008)	(Ponte <i>et al.</i> , 2009)	Panel expert interviews based on Delphi.

(Source: author, 2015)

Nevertheless, a multitude of studies conclude that XBRL was a failure, as the original idea of a standard for the whole financial supply chain including XBRL GL and FR could not be achieved. XBRL diffusion is mainly attributable to regulatory interference for external financial re-

porting (Locke and Lowe, 2007, p. 604). In this context, XBRL is a disadvantage for corporations, as it represents just another regulatory burden involving higher costs. This is a fundamental conversion, as the original idea was to save costs for corporations by standardizing the exchange of financial and non-financial information, primarily by cutting mapping and interfaces for converting data.

Further disadvantages are that the acceptance of XBRL mainly depends upon the existence of software that is sophisticated and user-friendly, as XBRL is not something corporations will deal with directly. XBRL software development is still at an early stage. Current applications still involve a lot of manual work and errors can easily be caused by users, as XBRL is often created at the end of the financial reporting cycle, which is still the dominant method, as XBRL is not embedded within the transaction capture and recording, but in most cases starts in the last step of the process of preparation of the financial statements.

Researchers from different disciplines around the world have analysed XBRL since its first development in 1998 by Charles Hoffmann. A wide range of research topics have been considered by focusing on XBRL from different angles: technical components, market behavioural aspects, empirical evidence from XBRL filings, benefit analysis and diffusion and adoption.

With regard to the data methods and research design, a variety of methods have been applied: quantitative, qualitative and mixed methods. However, compared to the existing literature available for CG, the spectrum and the quantity are relatively low: therefore, it is possible to focus on the majority of the available literature written in the scholarly journals.

Despite the obvious advantages of XBRL, its relevant importance for companies remains questionable, as companies have not voluntarily implemented XBRL on a wide scale. The SEC initiated a voluntary XBRL-filing program between 2005 and 2008. Only 137 out of the total

sample of 10,000 companies realized their commitment to participate in the dry run, representing only 1.37% (Bonson *et al.*, 2009). A similar development can be noticed in Germany: since 2006, the electronic gazette, which all German listed companies need to use as a platform for filing their annual reports, has permitted XBRL on a voluntary basis instead of an XML conversion, but only five companies out of thousands have finally elected XBRL. The reasons for this are not clear, as studies show that voluntary early adoption of XBRL-based reporting signals superior CG and operating performance (Premuroso and Bhattachary, 2008).

While XBRL will become mandatory for foreign Private Issuers' (FPI), audited annual statements (non-US NYSE listed companies) in the US beginning in 2013 under the condition that the SEC accepts the IFRS Taxonomy (SEC, 2011), which is by the date of July 2015 has not happened yet. In the European Union it is expected that the EU will require that financial statements are provided in XBRL until 2018 (Solsbach *et al.*, 2014) and investors are already demanding an extension of XBRL-enabled reporting to other parts of non-financial information, including Reporting on CG (Online, 2011). Investors search for more "relevant information than just the financial statements and the footnotes" (International Audit networks, 2006, p. 16). As long as regulatory bodies do not require CGR in XBRL, companies need to decide whether they will provide CGR in XBRL on a voluntary basis. Multinational companies focus their attention on the increasing importance of XBRL, which can be concluded from several case studies (Drysdale, 2011; Tyagi, 2011).

There are several trends which support the assertion that multinational corporations are turning to and adopting XBRL:

- Increasing regulatory pressure to increase transparency and improve CG;
- The increasing quantity of business data internally and externally;

- Competition from BRIC countries (Brazil, Russia, India and China), that urges the US, Europe and Japan to take advantage of sophisticated information technology.

A further reason for this is that XBRL has become the standard not only for financial reporting, but also for other reports such as tax reporting (eBilanz in Germany, HMRC in UK) and regulatory reporting to the EBA (FinRep). According to (Maguet, 2014) there are fifty country XBRL projects altogether and companies simply cannot ignore this trend, as the standard is in a “stage of vast expansion” (Maguet, 2014, p. 12).

What are the further reasons why corporations might consider extending the XBRL filing to CGR? Corporations have invested in XBRL technology for the mandatory filing of their financial statements. As the technology can be used without incurring additional costs for remaining financial reports, corporations have an incentive to implement XBRL-based reports for non-financial information.

In 2008, the SEC initiated an advisory committee to improve financial reporting for investors. One of the recommendations was to use “new technology to get important information to investors faster, more reliably, and at a lower cost by requiring companies to provide financial information using interactive data [...]” (SEC, 2008, p. 1). Additionally, the Pozen Committee recommended the extension of Interactive data, which is a synonym for XBRL, to all parts of financial reporting, thus not limiting XBRL to the core financial statements (SEC, 2008).

2.5.3.1 Impact on the financial supply chain

XBRL is still a new technology, as its origin goes back to 1998, when it was invented by a CPA named Charles Hoffman, relying on the already available computer language Extensible Mark-up (XML). XBRL is the abbreviated form of eXtensible *Business Reporting Language*. In the last ten years it has evolved as the de-facto standard for the electronic exchange of business information. According to Debreceňy (2009), XBRL was based on the World Wide Web consortium's XML standard and is freely licensed by XBRL International Inc. (XII). XII is established as a not-for-profit organization, which consists of a consortium of 550 companies and agencies worldwide. XBRL is defined by XII as "a language for the electronic communication of business and financial data, which is revolutionizing business reporting around the world. It provides major benefits in the preparation, analysis and communication of business information. It offers cost savings, greater efficiency and improved accuracy and reliability to all those involved in supplying or using financial data" (Debreceňy, 2009, p. 37).

XBRL is a standard technically based on XML for transferring business information and related meta-data. According to XBRL, taxonomies consist of metadata and facts that are important to stakeholders. Metadata are data that describe the data. An example is that according to CGR, the compensation of the management board is made public and it consists of the fact compensation, which is a text attribute, and a figure, which is an instant attribute. The existing reporting format does not provide such meta-data.

Under XBRL, a taxonomy can be defined as a "relevant term for a given universe of discourse [and] creates a network of relationships between the terms, optionally defining presentation, definition and calculation relationships" (Debreceňy, 2009, p. 16).

The following is the XBRL Financial Reporting Framework with its specific detailed elements:

Figure 2.6: XBRL Financial reporting framework

Source: Piechocki (2007)

An XBRL taxonomy represents a huge collection of taxonomy schemas and linkbases. Linkbases are collections of links. An XBRL schema is used to store business facts about taxonomy reporting elements, such as their labels, meta data and other attributes (Piechocki, 2007b). Another description is a “container where a list of unrelated elements and references to linkbase files are described” (Piechocki, 2007b, p. 82).

Figure 2.6 provided a summary of the different elements of the XBRL taxonomy, which consists of the following three sub-categories (Khandelwal), 2008):

- Relation linkbases, which describe the relations between the elements within the taxonomy and specifically provide an overview of the hierarchy of the reporting elements (Piechocki, 2007);
- Label linkbases, which contain text labels in various languages (Piechocki, 2007);
- Reference linkbases, which connect the reporting element with the legal requirements (Piechocki, 2007).

Looking at the aforementioned definition, the taxonomy schema contains the names of the reporting elements (Piechocki, 2009).

A Definition Linkbase interrelates concepts with other corresponding concepts using various roles to express relations.

A Calculation Linkbase has the objective to control for consistency of values appearing in an instance document.

A Label Linkbase supports human readable strings for concepts.

A Presentation Linkbase enables a user interface to the user such as rendering or visual display.

A Reference Linkbase contains citations from authoritative literature.

The existing taxonomies can be separated into closed and open taxonomies: closed taxonomies have to be submitted by the company without limitations and the open taxonomy enables the definition of company-specific elements, which are also called “extensions”. The closed taxonomy has the advantage that it ensures that corporations really follow the standardized framework; however, if the standardized taxonomy is rather thin, corporations will find it difficult to map due to industry and/or company-specific attributes. The open taxonomy shows advantages

with regard to the coverage of industry and/or company-specific attributes, whereas open taxonomies bear the risk that submission leads to incomplete comparability, as not all corporations might follow the standard. Given the aims of the research project, the researcher would prefer the development of a closed taxonomy.

XBRL has the potential to significantly enhance the efficiency of the reporting supply chain (Alles and Piechocki, 2012), as it has the following advantages and positive impacts:

- Investors can automatically retrieve information from financial reports, without the need to convert data.
- Auditors and regulators will also have direct access to financial reports and can easily compare with peers and even other industries, as companies not only provide financial reports but also explain how these financial reports relate to requirements and how the corporations interpret these requirements. With the help of XBRL, the SEC could, for instance, detect the scandal associated with options price backdating (Alles and Piechocki, 2012).
- Issuers of Financial Reports can provide assurance that the information is reliable.
- Reports can provide a true as well as realistic impression of the company's net assets, its financial performance and other additional disclosures.

In a recently issued paper from the European Commission it is stated that “The fact that the same information is reported through multiple channels to different regulators and governments creates an unnecessary administrative burden in terms of economic activity, inconsistency of data and confusion of markets. In order to provide greater efficiency we believe we have the answer: the answer to this is: XBRL” (Klinz, 2012, p. 2). With regard to the financial supply chain, there are basically two main approaches. The first regards XBRL as a standard that can be

used for any exchange of business and considers all internal and external exchange within the financial supply chain.

The second approach focuses on specific parts of the supply chain, with a major focus on external reporting. The attached figure illustrates the second approach.

Figure 2.7: The effect of XBRL on the financial supply chain

(Source: author, 2015)

In a paper prepared by the largest audit firms in 2006, XBRL was regarded as a “revolutionary way to provide financial reporting information.” XBRL could, however, also be regarded as just another technological standard besides PDF or Word. What is the real added value provided by XBRL to call it “revolutionary”? Baldwin and colleagues have applied a study based on a group of very knowledgeable persons to identify the most likely advantages of XBRL (Baldwin *et al.*, 2006).

With regard to standardization, Baldwin and colleagues stress the advantage of XBRL: that it will enable cross-sectional comparison of companies within a special industry. This is also a result of the fact that with XBRL, the usual process of normalization of data intermediaries is no longer required. Normalization usually implies the aggregation of data into a standardized format. With this normalization, data is cleaned and distorted so that the original meaning for understanding and analysis disappears. Limitations still exist with XBRL when taxonomies of different industries are applied. The degree of specialization between industries makes it obvious that a unified taxonomy is practically impossible. This is one of the key challenges that the IASB undergoes with the development of a taxonomy based on the non-industry specific IFRS concepts.

2.5.3.2 Impact on information efficiency

The first group of articles can be categorized in such a way that the common underlying concepts of measurement for information efficiency are accounting-related setting of accruals. Accruals are often used in the academic literature as an indicator for assessing the level of earnings management and impression management (Peng *et al.*, 2011). From an accounting perspective, accruals are a general method of distributing liabilities over the duration of the obligation which is required in any accounting standard. In the academic literature, a general assumption is that management bias is assumed for the extent of accruals (Doyle *et al.*, 2007). With regard to XBRL, the accruals are used as an indicator to evaluate whether management bias has changed after the implementation of XBRL.

Continuing with the taxonomy of the XBRL performance literature, a major group consists of XBRL and the analyst and investor coverage. According to Ly (2012), analysts' coverage and the quality of their predictions, applying regression analysis, showed that there are not headwinds in analysts' coverage and the quality of their earnings forecasts after XBRL implementation (Ly, 2012).

Finally, the taxonomy can be summarized in terms of more general concepts such as its impact on information asymmetries. Yoon is a researcher of this category who has focused on the overall development of information asymmetries ex-ante and ex-post conversion to the new technological standard (Yoon *et al.*, 2011). The authors of the study undertake statistical t-tests including multiple regressions to analyse the effects of XBRL adoption on information distribution. The major outcome of the study is that a major positive relationship related to XBRL implementation and information distribution can be identified. Consistent with previous findings, XBRL leads to an improvement in the distribution of corporate information between the management and shareholders.

Changing financial reporting to transmit via XBRL does not, per se, change the underlying economic performance of an insurer's business or extend the financial reporting. In general, XBRL may change investors' information-seeking, as it:

- improves information quality, i.e. provides more accurate and less noisy public information;
- provides additional information under which basis the financial reporting is delivered, i.e. extension or company-specific reporting elements versus taxonomy-compliant reporting;
- reduces monitoring costs, as the information can be analysed and processed automatically without manual interruptions.

The second group of articles considers change in stock return volatility and event return volatility. This focus is on the market reaction or market impact and can be allocated to an external performance indicator. In the study with the largest population, which was reported by Joung *et al.* (2012), growing information efficiency, reduced event return volatility and decreased change in stock returns volatility for 428 firms (1,536 10-K and 10-Q filings) post-XBRL disclosure were demonstrated. In addition, this study also concluded that XBRL reduces market risk, especially when uncertainty is extended about the macroeconomic environment. The results obtained by the researchers have been tested for validity, reliability and generalizability. The sample consisted of 326 XBRL versus 326 non-XBRL firms (Joung *et al.*, 2012).

All these studies are based on empirical evidence and therefore can only use those samples that are already available on the market. As a consequence, the samples have to be based only on US GAAP filers. What about IFRS filers? Several reasons can be given as to why only a small number of IFRS filers have provided XBRL files. The main reason is that they simply were not obliged by laws or regulations to submit, which depends very much on country-by-country differences.

An additional reason is that due to the fact that the SEC has not yet accepted the IFRS taxonomy for foreign private issuers and XBRL has not yet been declared mandatory within the European Union overall, the availability of reporting samples for robust research is very limited. The lack of available data for XBRL in the form of instance files is a real pitfall within academic research, and also the discussion around the SEC and the adoption of the IFRS taxonomy does not support the diffusion of the standard.

2.5.4 XBRL for Corporate Governance Reporting

The existing studies of XBRL mainly focus on the conversion of XBRL with regard to financial statements and regulatory reporting, which is progressing rapidly. Financial statements mainly consist of financial information; however, due to issues within the existing taxonomy, there are few studies that analyse the benefits of tagging narrative disclosures for investors (Arnold *et al.*, 2012). When the taxonomy is improved, it involves similar benefits for XBRL for CGR. What are the disadvantages and how do companies and investors perceive the use of XBRL?

First, CGR represents business information, which is relevant for an explanation of the firm's performance and how the corporation is managed. The main advantage of an XBRL implementation should be the increased transparency, as the company would submit additional information on its CGR to enable the investor to better understand the reporting content. Secondly, the user of the XBRL would be better able to compare CG disclosures to other companies and could focus on material CG information, thus mitigating risk through information asymmetries. Considering the existing academic literature, the following sources support this. According to Arnold *et al.* (2012), investors would benefit from the implementation of complex narrative disclosures with XBRL. The authors point out that these results are applicable for other similar narrative disclosures. CGR is not explicitly mentioned by the authors; however, within the perception of investors, CGR is also regarded as a narrative complex disclosure (Campbell and Slack, 2008). Arnold and colleagues do not mention transparency as a benefit; however, they conclude that the XBRL tagged information "facilitates professional and non-professional acquisition and assimilation of narrative disclosures in assessing company risk and predicting future performance" (Arnold *et al.*, 2012, p. 1).

XBRL is already used for financial information disclosures, mainly due to mandatory regulatory requirements such as those issued in the US by the SEC for domestic American companies. However, longitudinal research on XBRL reveals that from a long-term perspective, the positive effects outbalance the negative (Efendi *et al.*, 2011a).

There are only a few empirical studies available which can provide proof of positive effects on Financial Reporting resulting from the implementation of XBRL due to the lack of available empirical data. However, starting in 2008, empirical studies began to proliferate, and the majority of findings draw positive conclusions from the implementation of XBRL. Most of the academic literature about XBRL between 2008 and 2012 refers to the Voluntary Filing Program of the SEC. According to Chou and Chang (2010), seven out of those studies were conducted with the aim of identifying reasons for the voluntary adoption, three to evaluate the characteristics of those companies that took part in the voluntary filing program and five studies focused on the impact of XBRL. This includes three studies that focused on the XBRL-tagged data, an additional three studies with the objective to analyse the transition from voluntary to mandatory status and finally four studies that focused on the taxonomy and procedures. The main result of the voluntary filing studies is that the following factors are believed to be significant in voluntary XBRL adoption in the US: innovative, larger size, high profitability, earnings quality, strong CG, high liquidity, and large analyst following (Efendi *et al.*, 2008).

One study concludes that XBRL tagging only has an influence on non-professional investors' search activity and enables a more efficient incorporation of risk information into their financial decision-making, while professional investors remain unaffected by XBRL-tagging (Arnold *et al.*, 2012). The findings from Arnold and colleagues appear surprising, as professional investors can benefit from other positive XBRL-related impacts, such as enhanced transparency.

Peng *et al.* (2011) investigated XBRL adoption with regard to two Asian stock exchanges. As a measurement criterion, the extent of all accruals pre-XBRL and post-XBRL is applied. The finding is that after the implementation of XBRL, the level of accruals is lower. As the level of accruals is a recognized measurement instrument for the ability to detect earnings management, the study concludes that XBRL adoption reduces investors' information search and analysing costs.

In 2008, the Tokyo Stock Exchange (TSE) decided to include CGR in XBRL, as investors aimed at receiving CG information in a structured way without having the obligation to read an entire chapter (Mitsui, 2011). According to an article by Mitsui in 2011 about the Japan experience, the author concludes that the way XBRL was provided by Japanese companies led to many errors (Mitsui, 2011). One main reason was that tags, although semantically correct, implied errors, as the definition within the taxonomy was not correctly considered and another tag should have been provided from the beginning. These errors are more frequent when automatic tagging is performed (Mitsui, 2011). Despite the errors, which should disappear as corporations continue to improve their reporting, Mitsui regards XBRL as a communication tool between issuers and investors. The TSE regularly issues empirical studies of CGR. In 2009, TSE pointed out in a study of CG that "The Exchange will further incorporate XBRL technology in information disclosure systems to provide a higher level of convenience for investors and users in the future" (TSE, 2009, p. 73). According to the listing requirements at the TSE, companies have to report an executive summary of their financials, main accounting policies and aims for CG. The TSE has issued three studies about CGR disclosures: in 2007, before the introduction of XBRL, in 2009 and in 2011.

Considering the companies' disclosures about their objectives for CG before and after the introduction of XBRL, the following conclusions could be drawn:

- The introduction of XBRL did not fundamentally change the way corporations regard their CGR;
- After the introduction of XBRL, there was a strong increase in awareness of the provision of information for stakeholders and an increase in the awareness of the environment and corporate social responsibility;
- The introduction of XBRL caused the text disclosures about the internal control system to increase.

The reasons TSE followed the introduction of XBRL within the Japanese capital market can be confirmed on a global level by a survey conducted by the CFA Institute in 2008, which found that XBRL can improve the depth and comparability of the financial information (CFA, 2008, p. 5).

Alles and Piechocki (2010) investigated whether XBRL reporting enhances CG and concluded that XBRL has a positive effect on CG, primarily by providing input into analytical tools. The authors did not restrict their findings to specific content, so that it can be concluded that XBRL for CGR could provide meaningful results unless a valid taxonomy is developed.

The SEC issued a rule requiring all domestic listed companies to submit their quarterly and year-end interactive XBRL filings with the SEC. Non-domestic Foreign Private Issuers are not yet required to file using XBRL unless the SEC finally accepts an IFRS taxonomy, which is currently being developed by the IASB.

However, the SEC made a clear distinction regarding the content of XBRL filing between more narrative qualitative aspects of disclosures such as the MD&A and quantitative-related disclosure such as figures and numerical information. MD&A, compensation and other disclosures are currently excluded from the mandatory SEC XBRL filing. CGR mainly relates to qualitative aspects of disclosures, although disclosures on management compensation also consist of quantifiable information such as compensation figures, incentive awards and share ownership. It is important to analyse reasons why the regulators have decided to exclude narrative information, which is comparable to CGR disclosures, as both are more qualitative-related. A concern might be that there are restrictions with regard to XBRL and qualitative-related disclosures.

Applying XBRL to CGR could result in more effective and efficient application of that information by investors. This is shown in the study by Arnold *et al.* (2012), which covers the demand for financial reporting. The study reveals that providing an XBRL for non-financial disclosures has a major impact on the investor's search behaviour. The study also concludes that primarily nonprofessional investors can benefit, as they can incorporate key information into their investment decisions with tagged and searchable narrative information. Nonprofessional investors are not on the same playing field as professional investors.

XBRL can help the non-professional investors to approximate to the playing field of the professionals, as information can be collected and used faster by non-professionals, with lower information search costs. A similar positive effect on the supply side of financial reporting is analysed and derived within the study from Peng *et al.* (2011), which mainly shows that transparency is enhanced after the implementation of XBRL. Peng and colleagues applied the indicator of accruals, which is commonly used, as the level of accruals decreased post-XBRL. Their results are based on the Chinese market, which was the first to implement XBRL findings world-wide. An additional source for the conclusion that XBRL has significant positive impact on investors, corporations and

capital markets is the research on SEC voluntary filings. In summary, XBRL provides material benefits on corporate disclosures. The next area of focus, as Roohani (2008) concluded, is CG and the integration of narratives and disclosures on numbers.

XBRL implementation for CGR is mainly criticized on the grounds that there is a current lack of feasibility due to the issue of inadequate textual information in the current taxonomies, which is confirmed by Arnold *et al.* (2012). If the companies want to prepare XBRL filings for such information, mapping of CGR information based on existing taxonomies is not achievable due to incomplete taxonomy. Regulatory bodies and transnational institutions, which are the main drivers for taxonomy development (Piechocki *et al.*, 2009), seem to have real difficulties in developing effective taxonomies. Moreover, if companies develop differing tagging strategies as they adopt taxonomies to an important standard, users will be unable to easily compare information across companies, and the value of tagging will be reduced.

In terms of the general research approaches, the empirical research on XBRL is characterized by a dominance of deductive studies. Of the eighty-eight studies, about fifty use an approach that can be classified as deductive. Comparing quantitative and qualitative research methods, the majority of the eighty-eight studies identified follow a qualitative research method. Of those authors who prefer a qualitative approach, most of them follow a single method, with only a few following the mixed or combined method.

Table 2.6: Research approach in previous empirical XBRL studies

	<i>Number of studies</i>	<i>Percentage of studies</i>
Quantitative Studies	50	60
Combinations of quantitative and qualitative studies	0	0
Qualitative Studies	33	40
<i>Experiment</i>	1	
<i>Interviews</i>	22	
Total	83	100

(Source: author, 2015)

2.5.5 Geographical diffusion of XBRL

XBRL has been implemented differently throughout the world's economies. The Australian Prudential Regulatory Authority, in 2002, was the first regulator to require XBRL in order to control the liquidity of financial institutions. China launched a non-mandatory XBRL filing program in 2003 and was one of the first countries to require mandatory XBRL reporting later.

XBRL is used all over the world as a standard for the exchange of business reporting. There are two determinants for the geographical distribution. The first determinant is regulatory requirements, as XBRL has become mandatory for different purposes, including financial reporting, tax, regulatory reporting, non-financial information and statutory reporting. In accordance with Bonson *et al.* (2009), regulators require a system of automatic conversion or mapping which can be realized with the active-push implementation model of XBRL.

On the one hand, XBRL can be regarded as a new technology, which can be compared with other technological standards that need to reach a critical mass to become accepted. On the other hand, there is a structural aspect to companies' decision to apply XBRL taxonomy, as it enables benefits in terms of reducing transaction costs. To explain the diffusion of such an Information Technology, theories including the TAM and the ACM help to understand when this technology reaches its critical mass.

According to the TAM, developed by Davis (1985), the acceptance of a technology mainly depends upon the associated benefits and the level of difficulty of its application. The ACM, developed by Cohen and Levinthal (1990), points to companies' ability to absorb and utilize outside knowledge, specifically innovations, throughout the firm. According to an empirical study from Pinsker and Li (2008), both theories are appropriate to explain XBRL adoption, as XBRL is useful for the respondents' job (TAM) as well as being regarded as a technology that can be easily

adopted (ACM). However, those theories cannot explain why XBRL has not been more widely implemented on a voluntary basis by corporations indicated by voluntary XBRL studies. (Locke and Lowe, 2007) managed to close these gaps by comparing the adoption of XBRL in their article with the diffusion of open source projects. Considering the four criteria of network externalities, intrinsic value and advocacy, the authors managed to provide more detailed explanations for the specific diffusion of XBRL. Network externalities will increase as more entities adopt the XBRL standard, comparable to the worldwide internet standard. The adoption of a standard is opposed to the user's resistance to adopt it and the substitution potential towards existing competing standards.

A big hurdle in the early stages of a standard is to convince users to adopt the standard before it is widely adopted instead of following the "wait and see" strategy. This is especially difficult before the standard has reached a critical mass. There are several examples that support the notion that companies tend to use a wait-and see strategy: when Microsoft first issued an XBRL report in 2004, it was criticized by the IR Web Report as a "bleeding edge technology", which has no practical use due to the lack of an adequate XBRL software infrastructure (Locke and Lowe, 2007, p. 604).

Moreover, network externalities are stronger if the whole financial supply chain, including internal elements, takes advantage of XBRL. At the beginning of XBRL diffusion, a holistic approach consisting of XBRL GL and XBRL FR was followed; however, at some point in time, the decision was taken to limit XBRL to external reporting. As a consequence, the straight-through processing of XBRL could not be realized due to incompleteness.

According to the research article from Locke and Lowe (2007), advocacy of individual participants can have a positive effect in achieving the critical mass of diffusion. However, in the example of XBRL, the authors blame highly exaggerated comments such as the claim that XBRL will “have consequences similar to the transition from paper and pencil to the use of spreadsheets” (Covaleski, 2000) with regard to XBRL, which created conflicts and excessively high expectations.

There were several misinterpretations and overstating comments: XBRL will become a universal translator and a GAAP converter, and will ensure compliance with reporting financial standards (Locke and Lowe, 2007, p. 606). Such comments cause conflicting claims and expectations, which XBRL cannot fulfil, as it has specific restrictions and is not the solution to all issues with regard to reporting. The intrinsic value of XBRL relates very much to its usability in corporates; however, users do not interact directly with XBRL, as they rely on software packages to create instances, edit, view and validate XBRL files, which transform business facts into interactive data. As software users are used to working with mature, sophisticated software and XBRL software packages are not at such a mature stage, acceptance of software will depend upon its functionality and not on the underlying standard. The intrinsic value is hidden within the XBRL software (Locke and Lowe, 2007, p. 607).

To better understand the diffusion of XBRL, the researcher has divided XBRL diffusion into four different focus areas. For each focus area, the geographical distribution will be elaborated.

Table 2.7: Country-related application and diffusion of XBRL

	XBRL for Financial Reporting	XBRL for Regulatory Reporting	XBRL for tax	Additional XBRL Reports
Countries	US, China, Japan, Spain, Belgium, Korea, South Africa, Canada, Ireland, Denmark	Europe, Netherland, India	eBilanz, HRMC	Japan CG
Taxonomy	US GAAP, Chinese GAAP, IFRS	FinRep	Germany, UK	Data Conversion
Year of inception	2008, 2004, 2008, 2008, 2008, 2011, 2009, 2011, 2008	2013, 2007	2013, 2010	2003 and 2008

(Source: author, 2015)

XBRL for Financial Reporting is predominantly an active or open taxonomy. Open taxonomy implies that the filing company extends the taxonomy by company-specific elements. While these company-specific differentiations are very much criticized by investors, as companies become less comparable, they are the only way to ensure that there are no deviations from the external paper-based reported Financial Reports as long as Financial Reports do not follow prescribed formats. According to Arnold *et al.* (2012), these inconsistencies mainly prevail in narrative elements of financial reports. According to Debreceňy *et al.* (2011), 40% of the extensions are not necessary, as they are used inappropriately because a semantically equivalent element already exists. Based on these findings, it is a valid assumption that high quality XBRL can also be created for narratives and is not limited to financial information.

For regulatory purposes, the common practice is that the regulatory body demands a standard template, which is based on the XBRL specifications; however, it is not permitted to deviate from this taxonomy, which is why it is defined as a closed taxonomy. Based on Debreceňy *et al.* (2005, p. 204), this approach can “provide consistency and reduce ambiguity”.

The first country that required mandatory XBRL filings was China. Since 2005, corporations listed on the Shanghai Stock Exchange have to provide XBRL filings for interim, half-year and year-end Financial Reports (Ramin *et al.*, 2006). From 2005, the banking authority in the US has required that banks provide XBRL filings for regulatory purposes.

The SEC has also concluded that standardization for management discussion and CG-related disclosures provides advantages; however, XBRL was not mandatorily introduced for those disclosures due to a lack of a suitable taxonomy (Schneider, 2009). This view is supported by academic research, which analyses the whole disclosure package, of which the financial statements are one part; however, CG disclosures

and management disclosures are subjects of continuing interest to the investor (Arnold *et al.*, 2012).

2.5.6 XBRL specification requirements

Reporting in XBRL inevitably involves the development of an adequate taxonomy (Kurt and David, 2003). The taxonomy development in the context of XBRL should follow the following objectives:

- Enable the preparers to comply with the demand of their regulators, in terms of disclosing regulated information and in general in terms of compliance with local and international CG codes (Piechocki, 2009).
- Enable the preparers to facilitate their financial and non-financial communication by adapting to their specifications with regard to the branch of the industry (banks, insurance etc.) and of business variations (Swanson *et al.*, 2007).
- Enable the users of corporate information to obtain technical readable and comparable information based on country-by-country or sector analysis (Arnold *et al.*, 2012).

According to Roe and Thomas (2013), there exists no standard way to build up a taxonomy. Taxonomies can be developed for several reasons (Thietart, 2001) and different approaches exist from software, knowledge and ontology development for XBRL engineering (Debreceeny, 2009). There is a best practice release by XBRL International, the “Financial Reporting Taxonomy Architecture (FRAT)” (Hamscher *et al.*, 2006), which defines modelling rules for XBRL taxonomy development (Debreceeny, 2009). However, this model focuses on technical aspects of how business rules are implemented in a specific XBRL taxonomy, and aspects of software engineering are integrated within this model. From a holistic point of view, the taxonomy development process encompasses reporting elements, technical XBRL specification and testing.

Existing approaches for the methodology of the development and engineering of a taxonomy in the academic literature share a focus on the technical aspects of the taxonomy development process via engineering models (Piechocki *et al.*, 2009) The following overview intends to integrate business-rule development into the taxonomy development.

- In the preparatory phase, it is necessary to define the reporting elements and the associated meta-data, including specifications of the taxonomy and its intended use.
- A building phase follows, during which all technical considerations and business rules should be addressed regarding the base taxonomy and the management of extensions.
- Finally, there is a maintenance and evolution phase for the management of all further evolutions of the taxonomy.

Based on the researcher's own experience and findings in the literature, the taxonomy development process should combine technical considerations and business rule-related aspects during the building phase, as there exist several interdependencies between these aspects (Piechocki, 2007). Technical validations often refer to business accounting rules such as the balance sheet equation: assets equal liabilities and owner's equity. These rules are often embedded in the filing rules of the taxonomy issuer and have a massive impact on the nature of filing, comparability, the nature of extensions and taxonomy design (Brands, 2011).

The development of a taxonomy requires both business expertise and XBRL technical expertise. Therefore, according to Hannon (2005), the team leading the taxonomy creation project should include:

- Business experts who understand the information contained in the taxonomy and the underlying regulation;
- Technical experts guiding the technical architecture and design of the taxonomy;
- An advisory body made up of business experts and users being able to validate the choices of organization and form of the taxonomy and its elements.

All taxonomy designers have to come up with a methodology to set up a classification system (Debreceeny *et al.*, 2007) and this is part of the building phase. This relates to the design decision on presentation and completeness.

This subject covers the definition considering a business perspective. According to Spies (2010), the following business-context-related factors need to be considered:

- the desired scope of the taxonomy,
- the expected use of the taxonomy,
- regulatory sources of the taxonomy (with the objective of defining the reference index throughout the construction of the taxonomy),
- the style guide or naming conventions to be adopted.

The goal for building an XBRL-enabled taxonomy is the exchange of meaningful information between business users (Abdullah *et al.*, 2008). The content of the taxonomy in this thesis relates to CGR elements. The task of the taxonomy building consists of defining all the elements that the taxonomy must contain. If the contents are considered to be too vast for the first phase of construction, it is necessary to define several phases in time to construct the whole taxonomy, templates and models

constituting the source of the elements of taxonomy (Debreceeny *et al.*, 2009). The targeting of all stakeholders in the supply chain should be addressed, including the standard setters, the preparers and the consumers of the data.

These stakeholders are (Baldwin *et al.*, 2006):

- *Standard setters* (for instance the FASB or the IASB): They set financial reporting standards.
- *Preparers of the reporting entities*: Common practices and specific industry practices of reporting entities are added to the body of reporting standards. They prepare financial reports containing disclosures specified by standard setters, regulators, industry practices and common practices. They also prepare financial reports using software created by software vendors.
- *Software vendors*: They provide software for the reporting entity and preparers of financial reports to create such reports. The software has to facilitate the ability for the report creators to determine whether they have created a “true and fair” representation of their financial information (i.e. logical and sensible; complete, correct, consistent, accurate; with fidelity, with integrity). Software for creating, reviewing, validating, analysing, and comparing the financial reports can be utilized by any of the system actors.
- *Auditors*: They may express an opinion on the financial report, issuing an audit report. An independent third-party auditor must verify that the financial report is presented fairly and complies with all regulations and laws. An internal auditor may also verify the appropriate creation of a financial report.
- *Regulators*: They receive financial reports from reporting entities and analyse information within those financial reports for consistency and adequate compliance with the standards.
- *Investment professionals*: They obtain information from: (a) the regulator, (b) the financial report creator, or (c) a data aggregator. Information of one financial report is used. Information is

compared across periods for a reporting entity. Information is also compared across reporting entities.

- *Other actors*, such as academics, accounting researchers and others: They blog, write journal articles, and create other publications which relate to financial report disclosures and other topics. Practicing accountants and auditors use these publications within practice. Accounting member organizations publish best practices related to financial reporting disclosures and other topics.

This stage includes as a first step the development of a data model to represent the taxonomy and its elements that is usable and comprehensible by the business experts.

2.5.6.1 Taxonomy development: overview

Taxonomies can be developed for a variety of different objects and reasons. Research has demonstrated that countries, for instance, can have considerable influence over the founding of CG (Nix and Chen, 2013). The comparative CG research has developed systems-based CG models: “the Anglo-Saxon systems”, “the Germanic systems”, “the Latin systems” and “the Japanese system” (Weimer and Pape, 1999, p. 152). According to the legal object classification as presented by La Porta *et al.* (2000), there are “common law” countries, “French civil law” and “German civil law” (p. 8). Civil law countries grant investors higher protection than non-civil law countries. Coffee has provided legal justification that in civil law countries, courts do not intervene, whereas the common law countries are inspired by general principles (Coffee Jr, 1999).

According to García-Castro *et al.* (2013), two national models of CG can be categorised: the outsider model, which is also shareholder-oriented, and the insider model, which is also the stakeholder-oriented model (Krafft *et al.*, 2013). Outsider configuration is specified by a large general market capitalization, a comparatively low level of employment protection and high employee investments (García-Castro *et al.*, 2013). Other authors have extended this dichotomous categorization to a multi world viewpoint (Heugens, 2007). An additional strand within the comparative CG research has used the extent of minority investor protection as a main determinant for CG models (Cronqvist and Nilsson, 2003).

Another focus area for differentiation is the boards and the main question is how these are structured. According to Aguilera and Jackson (2010), the world of CG can be systematically differentiated between one-tier or unitary and dual or two-tier boards. According to Jungmann (2006), a one-tier board represents the interests of shareholders, while non-executive independent board directors provide advice on corporate decisions and financial performance and monitor management deci-

sions (Fama, 1980). In the two-tier board, there exists an institutional separation between the management council and the controlling council, while the supervisory council exercises control over the management (Jungmann, 2006).

Besides these taxonomies, which focus on country-specific characteristics in comparative CG research, the next category comprises firm-level or enterprise-related taxonomies. For this research, determinants are not macroeconomic-related, such as the general legal system or cultural values, but are at the level of CG practices of corporations (García-Castro *et al.*, 2013).

There are also research initiatives which intend to combine taxonomies from country and firm-level perspectives (García-Castro *et al.*, 2013). They conclude that governance practices in these bundles do not always relate to each other in a “monotonic and cumulative fashion” (García-Castro *et al.*, 2013, p. 390) as this can be explained with increasing costs. Further findings are that these practices are also complementary, and are the foundation of hybrid governance forms and additionally the functional equivalence across bundles of CG practices.

Several determinants of firm-level CG have been identified in the academic research. One of the major determinants is board independence and composition, which consists of the effectiveness of the protection of shareholder interest (Bhagat and Black, 1999). On a global basis, different board systems exist with regard to firm-level CG taxonomies. The US board is characterised by a one-tier system, which implies that the management and the directors who should monitor them are part of one board. Several academic studies exist which analyse board characteristics, predominantly the number of board members and the proportion between outside and inside directors (Adams and Ferreira, 2007; Hermalin and Weisbach, 2012). The question of independence plays such an important role that in the US, the regulator has recognized this fact and imposed Sarbanes-Oxley Act (SOX) rules to increase director in-

dependence (Dravis and Law, 2007). However, mainly in Europe, two boards exist: the management and the supervisory board, which are clearly separated from each other (Wymeersch, 1998).

Employee loyalty is another microeconomic characteristic, which, according to Garcia-Castro *et al.* (2013), has a large impact on firm-level CG. Employee loyalty is defined as the extent to which employees can be retained by the company and is often measured in terms of the turnover of skilled employees leaving the company (García-Castro *et al.*, 2013). Academic studies show that country legislation and cultural aspects also have an impact on employee loyalty (Aguilera and Jackson, 2003).

According to Görgen and Renneboog (2011), compensation plays an essential role in shaping CG and is mainly connected to the principal-agent framework. There are several studies that focus on compensation and its correlation to the firm-level CG; however, the results are mixed, and are often explained with unclear definitions of CG (Filatotchev and Allcock, 2010).

Compensation disclosures comprise all disclosures related to remuneration. In the academic studies from Dalton and Dalton (2008) and Laksmana *et al.* (2012), the readability of the compensation disclosures is compared to the CEO pay, and those with CEO payments exceeding the benchmark are more difficult to read.

The following figure summarizes the determinants of taxonomies in the context of corporate reporting.

Figure 2.8: Different determinants of Taxonomies

(Source: author, 2015)

2.5.7 Catalogue of corporate reporting taxonomies

2.5.7.1 IFRS Taxonomy

The IASB explains (IASB, 2015): “The IFRS Taxonomy is the XBRL representation of IFRSs, including International Accounting Standards (IASs), Interpretations, and the IFRS for Small and Medium-sized Entities (SMEs), issued by the IASB. The IFRS Taxonomy contains tags for all IFRS disclosures.” The taxonomy is intended to closely reflect the structure, concepts and wording of the standards themselves. The design and content of the taxonomy thus mirrors the standards rather than the various practices of financial reporting by companies, but the IASB XBRL team has added to the taxonomy in recent years a range of concepts which are commonly found in company accounts and are compatible with the standards (Brands, 2012). There has been extensive discussion among the IASB as to whether the extensions of the taxonomy with common practices are in line with the standards and the objectives of the IFRS. This addition of common practice content has brought the taxonomy somewhat closer to the normal practice of company reporting (Bonsón *et al.*, 2009).

The IASB updates its taxonomy each year to reflect changes in regulations and comments from users (Brands, 2012). The 2013 version of the taxonomy for full IFRS contained a total of 3,800 elements or XBRL tags, each representing a specific concept (Debreceeny, 2009). About 1,660 of these are monetary tags representing monetary line items which might appear in accounts. It includes about 400 dimension tags, which use multidimensional elements (Debreceeny *et al.*, 2009). It has about 1,000 text tags which identify different types of textual information. This relatively large number of text tags partly reflects the very detailed way that the taxonomy categorizes textual information which may appear in accounts. Most of the remaining tags are technical ones used for organizing the taxonomy (Debreceeny, 2009).

The IFRS taxonomy contains (Debreceeny *et al.*, 2009):

- Core disclosure requirements elements that have to be disclosed (if significant) according to the IFRS and interpretations (2342 elements),
- Guidance and example elements that have to be present as described in the examples of implementation of the IFRS (393 elements),
- Common industry and practice elements that have to be present as “commonly used” by preparers of IFRS financial statements (844 elements).

The IASB taxonomy is not expected to be used in its basic form. It is expected to be extended by organisations that wish to report under IFRS in XBRL to follow their requirements (Chou and Chang, 2008).

Extension may be carried out (Debreceeny *et al.*, 2011):

- by national regulators overseeing reporting in their jurisdiction,
- by international organisations concerned with a particular type or area of reporting, or
- by individual companies which may wish to adapt the taxonomy to their individual requirements.

The IASB does not provide substantive guidance or rules on how its taxonomy may be extended. It is up to regulators or other organisations controlling filing to determine any rules that they wish to impose.

This open approach to extension reflects the fact that the IASB taxonomy may be put to a variety of different uses in different jurisdictions. It effectively provides a range of components and building blocks reflecting the standards which users may adapt.

2.5.7.2 US GAAP Taxonomy

The XBRL US GAAP Taxonomy is founded on the United States' generally accepted accounting principles and targets on domestic and non-domestic filers on the NYSE, which submit financial reports prepared in accordance with US GAAP (De La Fe Jr *et al.*, 2000). The US GAAP taxonomy is developed by XBRL US, which is one of the two dominant worldwide accounting taxonomy developers besides the IASB foundation, which is responsible for developing the corresponding accounting IFRS taxonomy (Debreceeny *et al.*, 2007).

The XBRL US GAAP taxonomy offers a broad and extensive range of financial reporting concepts and includes about 14,000 reporting elements. As the US GAAP taxonomy is based on code law and not principally based, in contrast to International Financial Reporting Standards (IFRS), several thousand reporting elements are defined, which are required depending upon the specific industry to which the corporation is attributable, such as the banking or industrial sector. As the US GAAP Taxonomy is an industry-specific taxonomy, reporting elements for the following industries, also called entry points (XBRL, 2008), are provided:

- Commercial and Industrial
- Banking
- Savings Institutions
- Broker-Dealer
- Insurance
- Real Estate
- Other industries to be added in the future

The US GAAP taxonomy delivers accounting definitions and element relationships for the annual reports of stock-listed corporations. This taxonomy is the result of the development of the XBRL US Domain Working Group.

Figure 2.9: US Financial Reporting Taxonomy

(Source: Blake, 2003)

XBRL US published a foundation taxonomy with more than 15,000 elements or discrete concepts that represent common practice and the disclosure requirements of US GAAP. This large number of elements is also explained by the fact that the developer of the US GAAP taxonomy aimed at achieving a comprehensive taxonomy and therefore added additional concepts to improve practicability. The US GAAP taxonomy has increasing practical implications due to its mandatory introduction for US domestic filers since 2010 (Bartley *et al.*, 2011).

Corporate Governance Taxonomy in Japan

One of the few models of XBRL-based CGR that is made public is in Japan, where listed companies have been required to provide such a reporting taxonomy since 2008. However, its taxonomy only constitutes five general components: basic policy on CG, the CG system, the implementation of measures for shareholders, the basic approach to the internal control system and its development and other matters against takeover defence and matters regarding takeover bids.

The taxonomy prepared in Japan is too rudimentary with regard to the criteria of completeness to satisfy the needs of multinational FPI in the financial service sector. The Japanese taxonomy is too short and non-specific, as it does not cover most of the CGR requirements. As a conclusion, the interoperability, or in other words, the degree of comparability, is low, as companies that follow this taxonomy will not be in a position to find for all disclosures reporting elements which would enable a high degree of comparability to other corporations.

2.5.7.3 Global Reporting Initiative

GRI has developed a taxonomy covering sustainability reporting. Sustainability reporting consists of the “practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development” (Global Reporting Initiative, 2011). “Sustainability reporting” is a general term which consists of reporting on economic, environmental, and social impacts (Kolk, 2008).

This taxonomy (Anonymous, 2007) was developed by the Global Reporting Initiative (GRI), a worldwide non-profit organization that founded a sustainability reporting framework that has been commonly used and applied on a worldwide basis since the 1990s (Hedberg and von Malmborg, 2003; Kolk, 2004). The taxonomy contains both quantitative and qualitative data.

The following main recommendations for disclosures are part of the GRI Framework (Global Reporting Initiative, 2013):

- Organizations should identify their stakeholders and provide disclosures explaining what actions have been taken to meet the stakeholders' expectations and interests.
- Organizations should provide an executive summary of main impacts, challenges and opportunities.
- The report should disclose the performance of the corporation in a broader framework of sustainability.
- The report should comply with the requirements that:
 - Transactions that have a significant economic, environmental and social impact are to be disclosed;
 - Aspects which might influence decisions of stakeholders are to be externally reported;
- The report should include disclosures that incorporate indicators of the organizations' performance to enable an informed evaluation of the corporation's overall performance.
- The organization should assess, prepare and report information on a consistent basis.
- The reported information should be disclosed in a way that provides stakeholders with the possibility to assess whether the organization's performance may become volatile over time and enables them to perform peer analysis.
- The reported information should comply with the criteria of sufficient accuracy and completeness, enabling stakeholders to assess the organization's performance.
- The organization should submit information continuously so that stakeholders can rely on the constant availability of information to make informed decisions.
- The organization should follow a communication strategy that considers that stakeholders have access to and are able to follow the information using the report.

- The organization should collect, store, prepare, analyse and present information related to the preparation of a report in a manner that allows it to undergo examination and establishes validation, control and materiality of the information.
- Specified standard disclosures
 - Disclosures on management approach
 - Topics by category:
 - ☐ Economic - economic business drivers, market shares, business strategy, procurement approach;
 - ☐ Environmental - emissions, pollution, supplier environment assessment, environmental grievance mechanisms;
 - ☐ Social – employment satisfaction and commitment practices, corporate volunteering;
 - ☐ Sector-specific commonly practiced disclosures.

The GRI-Taxonomy 2013 is available on the website of the Global Reporting initiative organization (Global Reporting Initiative, 2013); the taxonomy consists of seven main categories:

- Strategy and profile disclosures
- Economic category
- Environmental and labour category
- Human rights category
- Society category
- Product responsibility category

CG-related matters are allocated under the category “Strategy and Profile disclosures”. The following are the governance-related disclosures based on the elements in the GRI-taxonomy (Global Reporting Initiative, 2013):

- Disclosure about governance structure including committees, responsibilities, description of the mandate and composition;

- Disclosure about the highest body of governance related to the chair's entitlement, remuneration in relation to the organizational performance;
- Processes and procedure of the highest body of governance to monitor the financial, environmental and social success of the organization and its compliance with the company's policies, national regulations and international codes and standards;
- Procedures for identification and remediation for conflicts of interests;
- One-tier boards have to disclose their number of independent members;
- Disclosure of the nomination and selection process for the members of the most senior body of governance;
- Procedures in place to evaluate the performance of the highest body of governance.

2.5.7.4 IS-FESG – Integrated Scoreboard

An additional taxonomy development project was introduced by the Spanish Accounting Association. The IS-FESG Taxonomy enables the technological support for the generation, transmission and reporting of companies' financial, environment and CG aspects. The taxonomy can be used for all types of entities. By means of the use of an Integrated Scoreboard, this taxonomy intends to foster comparability and enhance transparency at the international level, in accordance to the requirements and proposals of the International Integrated Reporting Committee (AECA, 2012).

Nine sub-elements are disclosed for the main category “fair governance” according to the IS-FESG taxonomy, with the following element descriptions according to the documentation issued by the AECA, which relates to the Spanish Accounting and Business Administration Association:

- Number of independent members in the most senior controlling institution;
- A definition related to the terms ‘independence’ and ‘non-executive’ needs to be disclosed;
- CSR board members: Number of board members with responsibility related to CSR issues;
- Executive Committee: Number of members related to the executive committee;
- Audit Committee: members who control and monitor the auditor;
- Nominations Committee: Number of nomination committee members;
- Meeting frequency of the Board;
- Total remuneration of the Board;
- Management Board diversity: number of women in management positions.

2.5.8 Technical considerations for building up an XBRL taxonomy

The creation of an XBRL-enabled taxonomy must take into account several technical aspects: The objective of the XBRL language is to structure financial and non-financial information semantically and provide a hierarchy of the data elements in a reporting taxonomy and to model this information in a technical schema. The objective of the technical schema is not to satisfy standards, but to be as relevant as possible in relation to the contents so as to ease, as much as possible, the reading or usage (Piechocki, 2007). The following factors need to be considered:

- modularity of the taxonomy;
- its legibility, the integration in one or several existing taxonomies;
- the readiness for extensions, and the use of dimensions to analyse the data. It also must, as much as possible, take as a starting point the “best practices” which progressively emerge from the development and use of new taxonomies.

XBRL language accepts all structures of data, from the simplest “list” to the most complex “multidimensional” format. During the creation of a taxonomy, the most appropriate structure should be defined according to the size and the use of the data that it is made to convey. It is necessary to preserve a balance between the technology, which offers almost unlimited possibilities, and understanding by the user, who must remain the first objective. The simplest solution for the user and the closest to the business must be favoured. The XBRL language attempts to provide a structure for financial and non-financial information; however, it cannot take over the task of each company to identify external disclosures due to specific materiality requirements. However, the reading of the taxonomy must comply with consistency rules in order to facilitate the tasks of the software applications that will render the data.

There are many reasons why a centrally defined taxonomy may need to be extended:

- Local regulation,
- Industry specifics,
- Companies' specifics.

There are different technical solutions for implementing extensions. It is also important to mention that comparability cannot be extended if a different approach is selected. The instance file created by all reporting entities is only comparable automatically if the base taxonomy is detailed enough to cover all aspects of reporting elements.

One of the few models of XBRL-based CGR that is made public is related to an article by Roohani (2009), who refers to the XBRL-based non-financial CG Report, which has had to be updated by all companies listed in Japan since 2008. Its taxonomy only constitutes five general components: basic policy on CG, CG system, implementation of measures for shareholders, basic approach to internal control system and its development and other matters against takeover defence and matters regarding takeover bids. The quality of a taxonomy can be assessed using the criteria of completeness and interoperability (Zhu and Wu, 2010).

2.5.8.1 Extension

A central principle of XBRL, even included in the acronym, is the possibility to extend the taxonomies, which is often misunderstood, as XBRL is often only used as a data template with a closed taxonomy. A filer may find that the foundation taxonomy does not contain all of the concepts necessary to report its various disclosures as they currently exist in the HTML filing.

Filers do not have the authority to implement direct changes to the foundation taxonomy. Instead, the filer must create an extension element and define the meaning of the element in an extension taxonomy. An XBRL report, technically referred to as an “instance document”, contains facts that are specific to the filer and the reporting period. Each of the facts in the instance document is tagged with elements that exist in either the foundation or the extension taxonomy. In the first year of compliance, filers tag the information on the face of the financial statements.

The taxonomy should be designed in such a way that data is comparable at fundamental accounting concept level and that extensions are limited to narrowing primary element members. The extensions will then not destroy comparability of reporting elements.

2.5.8.2 Validation

An XBRL taxonomy is really valid only if it has satisfied tests: automatic tests, handbooks, tests of contents and tests by users. The automatic tests are carried out by software and validate the consistency of the taxonomy with XBRL specifications. Each exception must be documented. Validation for this thesis was performed with the software Arelle.

Are the contents easily identifiable? Is the classification effective? Is the wording clear, non-ambiguous and understandable as a stand-alone?

The manual tests supplement the automatic tests. Any specific rule applied should be documented.

2.5.8.3 Maintenance

A taxonomy, when implemented, must remain “live”. It must be maintained to follow the evolution of the business and it should be improved to take advantage of new specifications or emerging best practice (Debreceeny *et al.*, 2009). The process of designing a taxonomy and its optimization is continuous. Financial and non-financial facts result from the business development, the needs of the users and the contents. New elements or dimensions will have to be built into the taxonomy.

2.6 Conceptual Framework

The key concepts of the theory can be elaborated in the following synopsis: In the academic literature there is very little research about the usage of XBRL for CGR (Urdari *et al.*; Alles and Debreceeny, 2012). Although disclosures are seen as an important corporate activity (Hooghiemstra, 2000; Roberts, 1992; Verrecchia, 2001), disclosure research is still challenging for several reasons. Despite the existence of several taxonomies with regard to IFRS, US GAAP, Sustainability Reporting (GRI) and Integrated Scoreboard (IS-FESG), as illustrated in the aforementioned section, this thesis was strongly motivated by the fact that an existing taxonomy on CGR, which could be used for financial institutions, could not be identified.

Within academic CG research, a global theory on governance remains to be developed, so that the existing theory has limitations in explaining CG mechanisms, including the CGR reporting of global corporations (Carver *et al.*, 2005). According to Williams and Aguilera (2008), the disclosure research faces different challenges, the most severe of which is that there is disagreement about a unifying theory. This is also confirmed by Verrecchia (1999). As the preparation of disclosures relies on the behaviour of top managers, it is not likely that such behaviour will be influenced by one deterministic reason that is explained within the economics, finance, and accounting literature.

Additionally, as the research will be a cross-national empirical study, it intends to close the existing academic gap on cross-national empirical studies on CGR (Durisin and Puzone, 2009). In the academic CG literature there are many different theories, which have been elaborated under section 2 (the literature review); however, for a CGR taxonomy, a combined theoretical model would be needed.

According to Roohani and Furusho (2009), the development of further taxonomies is expected due to the lack of existing taxonomies. Taxon-

onomies have been developed in the past mainly by institutions. According to Roohani and Furusho, the objective was mainly to improve monitoring. Companies have only implemented taxonomies if they are mandatory. In the last three years, a new development has begun, as accounting setters such as the IASB and regulators have started to meet with companies with the aim to integrate more practical company-specific elements in the process of taxonomy development. For instance, for the Financial Statement Taxonomy, two projects were initiated in 2012: the XBRL Financial Institutions Task Force and the Industry Working Group. From this development, it can also be concluded that there is a demand for enterprise-related taxonomies.

An enterprise taxonomy requires a classification into a hierarchical structure, and the most widely used is the polyhierarchical structure (Spies, 2010). The chosen topic is a practical use case and it intends to close existing gaps within the practical research field of CGR. In the academic literature, there is very little research about the application of XBRL for CGR. Since, according to academic research, country differences in disclosure and corporate reporting practices exist (Gillan and Starks, 2003), future research is needed to create a taxonomy that makes these differences transparent.

Several institutions exist which develop XBRL-enabled taxonomies for application of companies; however, CG is not part of this scope. The IASB in London focuses on the development of the XBRL taxonomy for its IFRS accounting standards. The FASB follows the same approach for the US GAAP XBRL taxonomy, as the focus is on the legally required Financial Reporting (Graham *et al.*, 2005). The Global Reporting Initiative (GRI), which further develops reporting on sustainability, has also issued an XBRL-enabled taxonomy. Although there are reporting elements covering disclosures on CG within the GRI XBRL taxonomy, these elements do not cover the full reporting spectrum of CG, as the main objective for GRI is the measurement of sustainability and the development of key performance indicators (Butler *et al.*, 2011). Due to

this inadequacy, the development of an XBRL-enabled CGR taxonomy follows the objective to support investors, auditors and analysts to obtain information about CG more quickly and simply.

Figure 2.10: Synopsis of CG theories

	PAT	Stakeholder	Stewardship	Property-rights	TAC	Institutionalism
Objectives	shareholders (principal) and management (agent) minimise agency costs reduce inform. asymmetries	Consideration of all stakeholders: Employees, customers, suppliers, shareholders, debtors etc.	Management is motivated extrinsic to work in the best interest of the company	Allocation of rights of ownerships/ Transfer of Property-rights from the owner to the managers	Identify internal mechanisms to minimise transactions costs	Institutional Norms and values/ external
Main issues/ assumption	Continuous conflict between self interest of managers and shareholder only shareholder orientation	Fulfillment of the demand of the diverse group of stakeholders:	Empowering internal structures	Agreement on contracts/ Opportunistic behaviour /complex within large corporations with diverse stakeholders	System of contractual relationships	Listed companies compete for capital and corporate governance is important to institutional investors.
Role/ Impact on Reporting/ Scope	Disclosures mainly for shareholders/ Information provision Discipline market control/ Narrow	Holistic implementation of quantitative and qualitative disclosures/ very broad	Focus is on internal collaboration between board of directors and supervisor board and the managers	Disclosures about Property-rights transfers including contracts between management and stakeholders	transparent reporting can help to reduce search and information costs for the investors	Corporations need to adopt their disclosures to the institutional requirements
Authors/ Year	Jensen and Meckling (1976)	Freeman (1980)	Donaldson (1990)	Furubotn (1972)	Williamson (1975)	Scott (1995)

(Source: Jensen and Meckling, 1976; Freeman, 1980; Donaldson, 1990; Furubotn, 1972; Williamson, 1975; Scott, 1995; adapted by author, 2015)

Principal-agent theory can be regarded as the dominant theory within CG research; however, the focus is on the shareholders' relationship to the company (Nix, 2004). One of the main weaknesses of the principal-agent theory is that there is no empirical evidence of the alignment of interest of shareholders to those of the board members: the total return of companies could be increased.

Therefore, the principal-agent theory does not consider stakeholders such as employees, regulators and the media or press. However, these are very important stakeholders, which have an impact on the demand for CGR. Stakeholder theory enables the identification of those requirements for corporate reporting.

Most empirical studies very much focus on the question of whether there is a connection between higher levels of decision usefulness and

quantity of disclosures and companies' profitability. According to the principal-agent theory, there are deviations with regard to information distribution between the management and the owners. Managers are not willing to minimize these asymmetries unless they are motivated by incentives. According to this theory, there is no room for intrinsic motivation comparable to the stewardship theory.

This is also evident in the following quote from Turnbull (1997, p. 200): "CG scholars would need to accept the possibility of people behaving both as opportunistic self-serving agents and selfless stewards", as these are the most dominant theories in the academic literature.

According to Nix and Chen (2013), trust is a building block for CG, which combines the different theories, as it plays an important role in all the definitions. "Disclosure and transparent processes" (Nix and Chen, 2013, p. 27) are required to build trust towards the investors.

Observers increasingly assume that CG is a result of the emerging globalization of the economy. However, despite the global convergence, a dissimilarity of CG attributes and bundles can be observed across the world (Fligstein and Freeland, 1995). Most studies of CG follow an ethnocentric and predominantly Anglo-American view, which implies a one-sided perspective (Turnbull (1997).

Based on the literature review, Table 4.19.1 combines the theories and the link to the research framework is executed.

Table 2.7.1: Attributes of CG for CGR to ensure good CG based on theoretical prepositions

Main attributes and Nature of conflict	CGR-Tax-onomy category	General Concepts	Remedy from CGR	References
Principal-Agent (Shareholders vs. Owners)	1 and 2	Main determinant of monitoring incentives is the size, ownership and identity of shareholders. The lower the incentive, the higher the agency conflicts.	Adequate Disclosure for Size, Ownership and Identity	Jensen and Meckling (1976), Watts and Zimmermann (1978)
Principal-Agent (Shareholders vs. Management)	1	Managers act on their own and therefore the objectives of the management need to be aligned with the shareholders (extrinsic motivation).	Transparent Disclosure of remuneration policies.	Jensen and Meckling (1976), Watts (1978)
Principal-Agent (Board vs. Management)	1	Monitoring, oversight and control function are executed by the supervisory board or board of directors. Outsider directors help mitigate the agency problem.	Disclosure on rules and policies.	Fama (1980) Rosenstein and Wyatt (1997)
Property Rights (Ownership)	3	Monitoring of the existence of properties.	Disclosure about accounting estimates	Coase (1960), Demsetz (1967),
Stakeholder (Shareholder vs. Stakeholder)	4	Internal control efforts have failed to be effective, external governance from stakeholders should compensate.	Disclosure on stakeholders e.g. regulator interference.	Freeman (1984), Donaldson and Preston (1995)

(Source: author, 2015)

Table 2.7.2: Attributes of CG for CGR to ensure good CG based on theoretical Propositions

Main attributes and Nature of conflict	CGR-Taxonomy category	General Concepts	Remedy from CGR	References
Principal-Agent (Management vs. Shareholders)	1	Hidden Characteristics of Management due to information asymmetries, Hidden Intention	Minimum disclosures about Management, e.g. achievements, qualifications	Holmström (1979)
Principal-Agent (Management vs. Shareholders)	2	Bonding devices are contractual agreements such as compensation packages that bond managers' interests to those of the capital providers Moral Hazard Stewardship Theory	Transparent Disclosure of remuneration policies	Grossman and Hart (1980), Shleifer and Vishny (1986)
Signalling Theory deals with the problem of information asymmetry	4	Managers with successful products will signal good corporate news to help investors make investment decisions and the cost of capital will be decreased.	Voluntary disclosures will exceed regulatory requirements.	Akerlof (1970), Levin (2009), Morris (1987), Ross (1977)
Regulatory Bodies/ Auditor vs. Management	3	Management will avoid restatements, as investors react negatively	Transparent Disclosures about restatements.	Bizarro <i>et al.</i> (2011)

(Source: author, 2015)

2.7 Research questions and objectives

Foreign Private Issuers listed on the NYSE are faced with a double burden, as they have to comply with the SEC CG rules as well as with the EU-wide and local national CG rules and regulations, also involving national CG Codex. In the last few years, due to the increasing demand for narrative disclosures caused by corporate scandals, bank financial statements' disclosures in particular have increased in size; however, recent studies challenge whether those extended disclosures really provide added value, as corporations often disclose immaterial transactions.

Besides the mandatory rules, there are several recommendations, industry standards and common practice reporting elements that have had an enormous impact on the Financial Institutions that have gone through the financial crisis, which is prevailing due to the sovereign debt crisis. XBRL provides a possibility to substantially enhance transparency with regard to external reporting, as it enables investors to compare financial reports with each other. The quality of CGR can be improved by using XBRL, as it implies several benefits for investors: greater transparency, additional comparability and accessibility within a shorter timeframe.

Due to the increased complexity content-wide and the technological challenge of XBRL, there is a need for a classification of CGR elements. There are two basic conceptual methods of classification found in the academic literature. The first is typology, which follows an *a priori* classification based on common knowledge and common sense with wide generalizations. In contrast, the development of a taxonomy is a classification that is based on empirical data (Pugh *et al.*, 1969). It follows an inductive approach, while typology uses the deductive method.

The discretionary structure of financial and non-financial reporting can imply that management tries to disguise corporate disclosures by providing more complex presentations related to agency theory. XBRL will enhance transparency of corporate disclosures, as it involves a further standardised format and content (Troshani and Lymer, 2010). XBRL makes it possible to automate the search and retrieval of complete and relevant information of annual reports and increases accountability. Users become enabled to focus effort on the results from data analysis instead of going through the data collection process.

A classification system makes it possible to provide for the corporation accountability and transparency. Based on theoretical propositions and the planned mixed-method approach, the proposed research questions are as follows:

Q1: What are the components of a CGR taxonomy for multinational foreign private issuers operating as Financial Institutions to meet the market's increasing complexity requirements?

Q2: Could this taxonomy provide a classification scheme that provides an implementation-oriented framework for financial institutions planning to convert to XBRL?

Based on the existing knowledge within the academic literature, the researcher will formulate hypotheses. The main hypothesis is influenced by the researcher's observation that there is a lack of an XBRL-enabled taxonomy for CGR. Although the benefits of XBRL are confirmed empirically for the financial statements (Premuroso and Bhattacharya, 2008; Jacob and Chang, 2010) and financial corporate reporting is moving to XBRL (Arnold *et al.*, 2012), there are very few companies, Fujitsu being one example, in which XBRL is used for CGR. In the literature, this is mainly explained by the fact that CGR disclosures have the characteris-

tics of complex narrative disclosures for which no sufficient taxonomy exists (Schneider, 2009; Arnold *et al.*, 2012).

However, there are studies which conclude that converting complex narrative disclosures into XBRL also implies additional benefits with regard to information access (Arnold *et al.*, 2012) and standardization (Wagenhofer, 2003). CG is defined in the existing CG and XBRL literature as part of a decision process. Because, according to Wagenhofer (2003), XBRL also has an impact on standardization of the format and the actual content, the process-view is not sufficient. A taxonomy that can support the needs of multinational corporations depends inevitably upon different models of CG, which need to be converted by the taxonomy developer. The question arises of how the role of XBRL taxonomy developer is seen. Is it regarded as an enabler or an influencer? An open question also remains with regard to the interrelationship between XBRL and the supposition of CG (Roohani *et al.*, 2009). What role will XBRL play in the further standardization? A standard that does not contribute to standardization will not lead to high acceptance, which might explain the low voluntary acceptance rate and the low voluntary adoption. These hypotheses consider that the existing CG and XBRL literature (Callaghan and Nehmer, 2009; Roohani *et al.*, 2009; Alles and Piechocki, 2012) have specific gaps and do not answer these important questions.

Hypothesis 1: Due to globalization, the CGR taxonomy for foreign private issuers operating as Financial Institutions will converge.

According to the disclosure literature, CG disclosures contribute to the elimination of agency problems; however, effectiveness depends on several institutional attributes (Healy and Palepu, 2001). A main theory about the effectiveness of disclosures relates to the reduction of information asymmetries (Verrechia, 2001). For outside investors, disclosures are a very important means of monitoring governance mechanism.

3 Research Methodology and Design

Methodology encompass analysing the methods implemented for a field of study from a theoretical and systematic point of view (Franklin, 2012). Research represents the search for knowledge (Kothari, 2004). Assessment of the methods employed is essential in management research. This is due to the fact that the acceptance of research is also influenced by the use of methods which were proved to be robust and rigorous (Scandura and Williams, 2000). If the chosen method can be questioned, the research findings are also questionable and do not represent valid and reliable knowledge. According to the academic design, choices about data analysis, data methods and instrumentation are essential and will have an impact on the conclusions drawn (Thietart, 2001; Gustavsson, 2007).

That is also a reason why a mixed-method approach has been used more often in research in recent years, as the same findings are generated even with different design choices, therefore diminishing the determination of the design choice and the research conclusion (Yin, 2006; Johnson *et al.*, 2007). Increased variation of methods to examine a topic can lead to a more robust and generalizable set of findings. Recommendations could be provided with a greater level of detail if triangulation or a mixed-method approach were applied (Scandura and Williams, 2000).

The research design sets up the framework of the whole research project and encompasses separate process steps: the research question, the literature review, data collection, data analysis and the results (Creswell, 2009).

The main objective of all empirical research should be the achievement of high data quality and therefore obtaining objective measures that are reliable and valid (Homburg *et al.*, 2009). For management research, according to Saunders, the objective should be to initiate ideas and

connect these to practical company work situations (Saunders and Lewis, 2009).

A methodology does not imply the objective to solve the research issue but aims to explain the theoretical underpinnings of which method can be applied to a specific case.

Modern knowledge is based on observations performed on the real world (Remenyi *et al.*, 1998). Management Research deals with the generation and explanation of different forms of practical management knowledge. Knowledge creation requires the researcher to select from different research paradigms which encounter how the researcher's view on the world is related to knowledge generation. One major viewpoint is whether the world exists independently or whether the observation of the world is regarded as subjective. According to Saunders and Lewis (2009), there is no good or bad research paradigm: what is important is that the research paradigm fits to the research question and strategy and realizes the aims.

3.1 Philosophical underpinnings

This section will outline the empirical approach of this thesis by following the methodological steps required in empirical research. First, the general types of research approach are explained. Additionally, the section involves the explanation of the associated philosophical underpinnings related to the different research methods. This leads to the decision on the research design and methodology for the thesis.

Each researcher transmits specific background assumptions, particularly in terms of what is accepted to gain knowledge in a research project, which is also stated as a knowledge claim (Creswell, 2013). The researcher started this project with a pluralistic knowledge claim, which assumes that an empirical study about CGR requires an openness to different systems of philosophy and approaches due to the associated complexity. According to Creswell *et al.* (2003), such a knowledge claim in social science research can be based on pragmatism, which is mainly derived from the work of James (2014).

It is important to understand what the implications are for this thesis, as the validity and reliability of the research findings are impacted by the knowledge claims and the philosophical underpinnings. According to Creswell *et al.* (2003), these epistemologies are called knowledge claims. Creswell *et al.* (2003) state that first the knowledge claims need to be identified, followed by the strategy of the inquiry, and finally the specific method to be used. The main knowledge claims in organizational science are the positivist, the interpretivist and the constructivist approach (Thietart, 2001). Positivism is comparable to the empiricism assertions that the real origin of knowledge can only be traced back to sense experience and positive verification. An underlying assumption is that the researcher is an objective analyst and interpreter of reality without being dependent on the reality. According to the positivism, the researcher can apply statistical analysis such as quantitative analysis, as there are independent causes that lead to the observed effects.

In contrast to Positivists, Interpretivists assume that individuals create their reality through their own thoughts and views (Thietart, 2001). "Interpretative research by its very nature is multi-method" (Belk, 2007, p. 198). Interpretivist knowledge is justified from the inductive methodology (Guba, 1990). It seeks to understand the significations that people attach to social reality and their motivations and intentions (Thietart, 2001). As a consequence, the non-positivist research methods focus on the prejudices and pre-knowledge that the researcher brings into the research, involving work experience and tacit knowledge experienced by a person through exposure to similar situations. Therefore, qualitative research methods are preferred. Another aspect of phenomenology is the nature of the object being investigated, which also influences the research method (Zahavi *et al.*, 2003). The primary means of research used are interviews involving qualitative research methods. The researcher's objective is to discover the meaning instead of conducting measurement.

The Phenomenological paradigm is regarded as the theory that "sees social phenomena as socially constructed" (Saunders and Lewis, 2009, p. 597). As a consequence, an underlying objective reality is denied, contrary to the metaphysical objectivism and philosophical realism (Thietart, 2001). In contrast to the "independent role" within Positivism, within the phenomenological paradigm the observer is "part of what is observed" (Remenyi *et al.*, 2003, p. 104).

According to Saunders (2009), it becomes apparent that research in reality rarely falls into one of the philosophical domains described above, as business and management research can often be traced back to a combination of positivist and interpretivist thoughts. This thesis does not make an exception. The research design takes a positivist and interpretivist view. On the one hand, the research involves quantitative positivist research and on the other hand a non-positivist qualitative methodology. In line with this reasoning, the present study has adopted

an interpretivist paradigm but is guided by theoretical propositions that are based on extant theory rooted in a positivist paradigm.

3.2 Research methods

3.2.1 Deduction versus Induction

There are basically two general research methods for knowledge generation. The first begins with the empirical observation and concludes from this to theories: this is known as the inductive research method (Saunders and Lewis, 2009). The second follows the opposite process. The deductive research method starts with the theory and derives it back to the hypothesis and finally performs a test based on empirical observations. The idea that the outcome should be falsified comes from Popper (Crowther and Lancaster, 2012), as falsification is regarded as his maxim. The deductive approach has advantages and disadvantages: the most dominant disadvantage for research in management is that falsification is very difficult to control (Crowther and Lancaster, 2012), as you start with the theory and then back-test, for instance, several empirical studies on corporations; however, the question will arise as to how many corporations are sufficient to conclude that the theory was not falsified. In natural science, in which deductive methods are often used due to the fact of the existence of general natural laws, the step of falsification is not as problematic as in management research. To summarize, in a deductive research method, theory can only hold true if it is not falsified by empirical observation.

The deductive method is often used with quantitative studies. The deductive method consists of a methodology that changes from the general to the specific content. The associated advantage of the deductive method is that hypotheses and expected findings are developed before the data collection (*"a priori"*). The underlying assumptions are often based on theoretical frameworks and therefore the subsequent analysis can be assessed as logical and focused. Deductive methods are most suitable if a major theory needs to be tested. Deductive researchers have their strengths in developing and testing ideas that are based on a conceptual framework. Deductive methods are useful if specific condi-

tions are met: methodologies can be easily derived from existing research (Gibbs, 1993).

Contrary to the above, the inductive approach derives general statements on particular observations and facts. An inductive researcher considers variables and takes into account a fully developed prior research design consisting of a literature review, models and a set of data. The usual aim is to construct a new framework instead of testing existing concepts. The cornerstone of the inductive method is to set up a framework based on categorization of data. One of the main advantages of the inductive method is its flexibility and openness with regard to alternative measures and relationships. One major disadvantage is the absence of conceptual and methodological cornerstones. Despite the effort involved in an in-depth analysis, there is a risk that not many meaningful findings will arise, depending on the research setting and the effort of the researcher in structuring data. Inductive research is recommended if there are only a few prior research studies in existence (Saunders and Lewis, 2009).

Induction is a research approach that, in contrast to the deductive method, starts with the collection of facts via the observation of individual objects and derives theories based on these observations. Several individual objects are generalized and summarized into findings from these facts. Finally, based on further analytical processes, general patterns develop and lead to a concept or theory. The inductive method has to cope with a high number of data, in order to ensure that generalization to a theory or a concept is possible. Further aspects of the inductive method include its flexibility and practical orientation, as it starts with the observation of facts (Crowther and Lancaster, 2012).

Figure 3.1: Overview of deductive and inductive research methods

(Source: Thietart, 2001, adapted by author, 2015)

In sum, deduction might not lead to the development of a new theory and induction has the disadvantage that current theory might not be considered (Carson *et al.*, 2001). In line with research objectives and with several other researchers, a balance between inductive and deductive elements is implemented within this thesis, as a mixed-method approach is also suitable for the creation and development of a new taxonomy and framework (Conner, 1984).

3.2.2 Mono versus Mixed-Methods

Many authors have presented typologies of mixed-methods research design with the aim to better classify mixed-methods designs (Greene and Caracelli, 1997; Teddlie and Tashakkori, 2006; Teddlie and Tashakkori, 2009). Creswell *et al.* (2003, p. 203) have developed a decision model for the selection of a rigorous mixed-method research design, while the text highlighted in bold represents the attributes implemented for this thesis.

Table 3.1: Decision model

Implementation	Priority	Integration
Concurrent	Quantitative and qualitative	Data collection
Sequential Qualitative First	Qualitative	Data analysis Data interpretation
Sequential Quantitative First	Quantitative	Different Steps

(Source: Creswell *et al.*, 2003)

The first step is the implementation step, which is the question of when qualitative and quantitative data will be collected. Under the next step, Creswell *et al.* (2003) subsume the degree of priority under which the researcher regards the collection of data. The last step reflects how the different methods are combined with each other.

Quantitative work corresponds to figures rather than to words, while for qualitative research, the opposite is true (Thietart, 2001). Quantitative methods imply significant advantages in comparison to qualitative approaches. This is due to the fact that quantitative methods rely on tangible and thus measurable data, which are comparable to each other. Quantitative methods focus on numbers (“hard science”) and can provide advantages in terms of time savings for the data collection and analysis. Another advantage that quantitative methods reveal is that they are relatively easy for researchers to use. There are a lot of analytical tools and a variety of software exists that supports quantitative methods. However, quantitative methods also face several shortcomings, as they focus only on numbers, which can limit objectivity. Relying only on numbers can prevent observations from being considered and can thus lead to research gaps or even a misinterpretation of results.

In contrast to the above, qualitative methods focus on intangible data and argue that qualitative data exceed numbers in terms of importance (“soft science”). Qualitative methods focus on human behaviour, mainly using interviews. Qualitative methods require considerable investment in time and effort to analyse unstructured data. The coding of interviews is a necessary task for the qualitative researcher, as interviews involve unstructured data. The limitations of interpretation are also blurred within qualitative research. In contrast to the quantitative method, there are fewer accepted qualitative standards and tools.

Mixed–method designs can be differentiated into four major types, according to Creswell (2006):

Table 3.2: Four major types of mixed-method design

Design Type	Variants	Timing	Weighting
<i>Triangulation</i>	Convergence Data transformation Validating quantitative data Multilevel	Convergence Data transformation Validating Quantitative data Multilevel	Usually Equal
<i>Embedded</i>	Embedded experimental Embedded correlational	Concurrent or Sequential	Unequal
<i>Explanatory</i>	Follow-up Participant Explanations Selection	Sequential: First quantitative then qualitative	Usually quantitative
<i>Exploratory</i>	Researcher Taxonomy development	Sequential: First qualitative then quantitative	Usually Qualitative

(Source: Creswell, 2006)

A mixed-method or combined method approach can be differentiated in the sequence of the implementation of the different methods. This is either known as concurrent design or sequential design (Driscoll *et al.*, 2007). The concurrent design is used to compare one form of data with another. The concurrent mixed-method approach is based on the concept of triangulation, which suggests that with the simultaneous combination of qualitative and quantitative methods, biases inherent in any single method could be neutralized or cancel the biases of other methods (Jick, 1979).

The exploratory design consists of a two-phase mixed-method, and is used predominantly when an exploration is needed, according to Creswell (2006):

- Instruments for measurement are not available or are incomplete
- Variables are not documented
- A guiding framework or theory is not available

Exploratory designs are best suited for exploring a phenomenon (Creswell *et al.*, 2003), testing a new instrument and generalizing to different groups and will be applied for this thesis. The “instrument development model” and the “taxonomy development model” are two kinds of exploratory model (Doyle *et al.*, 2009, p. 176). Each of these models starts with an initial qualitative phase and finishes with a quantitative phase. Differences exist with regard to the researcher’s connection of the two phases and the relative emphasis of the two methods.

Researchers use the instrument development model in cases where they need to develop and implement a quantitative instrument based on qualitative findings. In this design, the researcher starts to qualitatively explore the research topic with a few participants. The qualitative findings provide guidance for the development of elements and scales for a quantitative survey instrument.

The taxonomy development model is used in this thesis. According to this model, the initial qualitative phase delivers specific categories for CGR. These categories or relationships are used in the following step to appoint the research questions as well as data collection utilized in the second, quantitative phase. For this thesis, the researcher will identify emergent categories from the qualitative data and then consider the quantitative phase to test the existence and replicability of these categories within the sample (Morse, 1991).

According to Saunders and Lewis (2009), either a mono-method or a multiple-method approach can be chosen in selecting the research col-

lection technique. While the mono-method approach follows only one data collection technique, such as one qualitative study, multi-method approaches combine either qualitative and quantitative methods or multiple quantitative or multiple qualitative research techniques. The mixed-method approach provides advantages for practicing researchers, as it combines the strengths of both methods and minimizes their weaknesses (Johnson and Onwuegbuzie, 2004). Similarly, Brewer and Hunter conclude that the multi-method approach allows researchers to “attack a research problem with an arsenal of methods that have no overlapping weaknesses in addition to their complementary strength” (Hunter and Brewer, 2005, p. 74). According to Tashakkori and Teddlie (1998, p. 413) mixed methods “are being used extensively to solve practical research problems”, which is also a reason why mixed methods are applied for this thesis.

3.3 Research design and strategy

3.3.1 Research approach

According to Creswell's classification, a "sequential exploratory mixed model" with first a qualitative and then a quantitative approach will be applied in the present study. Creswell suggests that this kind of research question is best answered using exploratory mixed-method models (Creswell *et al.*, 2003, p. 215). Both methods are integrated as part of the interpretation phase. As it is the intention of the researcher to construct a taxonomy based on qualitative data and test it quantitatively, combining different methods means that the research topic is regarded from different "research angles" and therefore could lead to more reliable findings. As the main aim of the researcher is to build up a taxonomy, the variant of the "taxonomy development model" is regarded as the best fit to the research aims of this thesis. One of the disadvantages of this method is the duration of the two phases. The researcher intends to reduce the duration by using a software application to ease data analysis. For the deductive development of categories, a two-step approach is applied: first the categories are identified and in a second step the sub-categories are developed. This approach follows the taxonomy development model from (Creswell and Clark, 2007).

Figure 3.2: Exploratory design - Taxonomy development model

(Source: Creswell, 2006)

An exploratory design (Creswell *et al.*, 2003) has been selected to explore the phenomenon of CG disclosures and a new instrument taxonomy to capture the reporting elements will be developed, which is generalized to different groups.

The initial qualitative and the subsequent quantitative phase will be based on public available information provided by corporations in their year-end financial reports, as this is recognized as an essential source for periodical disclosures (Botosan, 1997; Stanton and Stanton, 2002).

In the initial qualitative phase, the main categories based on an existing CG Best Practice Guideline have been tested for compliance. The findings were used for the consecutive quantitative phase, in which the existence and replicability of these categories within the sample was tested based on recommendations by Morse (2003).

The findings of the qualitative phase are used for the research objective of developing the taxonomy. The results of the research provide connections and links from the initial qualitative phase to the subsequent quantitative component of the study. The design focuses on the qualitative data.

In the second phase, based on data collection, factor extraction based on empirical evidence to determine the main categories is performed. The third research step integrates the findings of the qualitative and the quantitative research phase. Based on the methodology of Tashakkori and Teddlie (1998), the taxonomy development model is used, which enables the provision of an answer to a quantitative research question based on qualitative data.

In the present study, the two-phase approach required considerable time to implement, particularly the quantitative phase, as several loops were performed to increase the reliability and validity of the findings. Although the study plan allowed considerable time for these two phases, due to higher complexity, the timeframe needed to be extended. The two phases, qualitative and quantitative, were based on the same sample size. Based on Creswell *et al.* (2003), the researcher decided to use publically available information for this research.

The researcher analysed the methodology of previous studies that aimed to develop taxonomies. The methodology in this thesis is comparable to the taxonomy of a CG Code from Heugens (2007). In accordance with Heugens (2007), a length-adjusted measurement was chosen, which calculates the frequency of words for every category. This has the advantage that it enables researchers “to adjust the measures for any *a priori* size differences between the codes” (Heugens, 2007, p. 1291). Without weighting the coding with the total size, the frequencies would be overestimated. Reviewing the recent literature about content analysis in organization studies provided evidence that the majority of reviewed articles applied methods to count text (Duriau *et al.*, 2007).

3.3.2 Research paradigm

The aim of this work is to develop a taxonomy that allows a detailed analysis of the spectrum of the CGR of NYSE-listed Financial Institutions, to cut through the increasing complexity and to identify the common reporting elements. The goal is to build up an XBRL-enabled taxonomy, as XBRL (eXtensible Business Reporting Language) has become the de-facto standard for interactive business reporting. The basis of any structure in CG is disclosure, as disclosures enable the reduction of information asymmetries between principal and agent. In order to develop this taxonomy, a mixed-method approach will be pursued, which combines qualitative deductive and quantitative inductive and interpretive empirical exploration. For the category development within the taxonomy, which requires the analysis of large amounts of text, the content analysis method is used. A mixed-method approach has several advantages over a single method, which are as follows:

- This DBA thesis intends to develop a taxonomy for CGR of Financial Institutions. The taxonomy is developed with the claim that it will be of practical use for Financial Institutions: As a result, the requirements related to the validity and reliability of the findings are very high, but are supported by the multi-method approach. The mixed-method approach has the advantages that the same phenomenon is studied with different methods and the findings are generated even with different design choices. In comparison, the single scientific research approach of quantitative research would only test one or more hypotheses and would move from theory to data, which is not adequate for the present research.
- The research is grounded on primary data, analysing annual reports from financial institutions. The annual report is one of the most frequently used sources within management research that applies content analysis. The combination and analyses of such data enables the researcher to gain insights into new information.

- The aim of this work is to develop an XBRL-enabled taxonomy, which allows the user to identify common reporting elements of Financial Institutions. With the taxonomy, the researcher intends to create a classification scheme that provides an implementation-oriented framework for financial institutions planning to convert to XBRL-reporting, by providing main categories and reporting elements. As the research follows an exploratory approach, causal relations between disclosure elements and other variables to explain the quality of CG disclosures are not pursued.
- The findings and results are limited to listed companies in which CG issues prevail due to the separation of management and ownership. As the primary focus is on the Financial Institutions in the banking industry, the findings and results might not be applicable to other industries. A quantitative research method is applied to achieve generalizable findings, which is an important issue, since the taxonomy should be of general use for Financial Institutions without incurring too many company-specific extensions.
- The data will be collected from a large sample. The choice of the sample size recognizes the requirement of generating generalizable findings for a taxonomy development.
- The mixed-method approach enables the researcher to deal with more complex problems in practice.

In the academic literature, many different theories exist which formulate and explain the CG issue, of which Principal-Agent theory is one of the most dominant (See Chapter 2.2). However, these theories do not provide a taxonomy for CGR elements that would be usable by companies, as they explain the objectives behind the disclosures, for instance, with concepts of information asymmetry. The researcher has considered whether taxonomies prepared by non-academic sources might be suitable for the given research question: GRI, IS-FESG, GCG-Scorecard and the Japanese CG Taxonomy. Considering the quality criteria for

XBRL-taxonomies and the researcher's own experience, it was concluded that the existing taxonomies are not suitable for the research question.

As this thesis follows a mixed-method approach, its epistemological underpinnings are also multidimensional, as an interpretivist view using a qualitative method and a positivist view applying a quantitative method are followed. The philosophical partner for mixed-method research is often regarded as pragmatism (Denscombe, 2008), which attempts to consider multiple viewpoints, perspectives and positions. Therefore, the epistemological position applied here is pragmatism, upon which the multi-method approach, also called the third movement, is based (Tashakkori and Teddlie, 1998).

During the research process, the disclosures about CG will be explored and summarized in the form of a taxonomy based on the annual reports of International Financial Institutions. With this alignment, the research process does not aim at understanding the reality experienced by the subjects of the study, but develops an universal knowledge goal, as in the positivist research approach (Thietart, 2001).

3.3.3 Research methodology

According to Mayring (2000), the deductive-inductive methodology involves the following steps:

1. Begins with a prior developed theory-oriented analysis that is applied to the text;
2. Development of main and sub categories based on this theoretical definition;
3. Development of a coding agenda, which involves the definition of coding rules;
4. Because of a formative check of reliability, categories and the coding agenda are revised;

5. The final coding rules are applied to the whole text and a complete reliability check is performed;
6. Results are interpreted and quantitative steps of analysis are performed.

The reliability and validity of the thesis's results depends on the choice of methodology, which therefore needs to be thoroughly assessed. As the main objective of this research project is to come up with a taxonomy of categories and sub-elements, this thesis follows a deductive-inductive methodology.

There are researchers, such as Stiglbauer (2010) and Bassen *et al.* (Bassen *et al.*, 2006), who have followed a deductive-inductive methodology within their research work on CGR; however, the applied categorization scheme depends very much on national CG codes and jurisdictions. Stiglbauer utilized the categorizations of the German CG code, including voluntary categories developed by the DVFA (the Society for Investment Professionals in Germany), which can be explained with the research object CGR in Germany. As the researcher intends to develop a taxonomy for international companies, he will use the CG framework of the United Nations for the main categorization.

The following aims are followed in the content analysis:

- Reporting elements of CGR are explored;
- Composition of the CGR elements are identified;
- A set of attributes for reporting elements such as legal requirements are identified;
- Codex recommendations, common practice and voluntary reporting elements are derived.

The content analysis is expected to follow the following deductive-inductive steps in line with Mayring's (2005) methodology for content analysis:

Figure 3.3: Deductive-inductive determination of category development

(Source: Creswell *et al.*, 2003)

- Deductive category definition:
 - CGR disclosures will be based deductively on the “Guidance on Good Practices in CG Disclosures” (United Nations, 2003);
 - Rules will be defined for counting and coding;
 - The sample’s compliance with the CG Code disclosure recommendations and requirements is tested based on qualitative analysis.
- Inductive quantitative analysis:

- o The disclosures are quantified in terms of the number of words and word frequency is calculated;
- o A statistical analysis (quantitative) of the main and sub-categories identified and frequencies will be based on a principal component analysis.

A question arises as to which unit should be used for the frequency analysis. According to Holsti (1969), frequency analysis can be based on different measurement units. The scale of counting units can involve a single word or symbol, theme, character, paragraph, sentence or other grammatical units. For this research project, it is planned to take themes as counting units. Single words cannot be used, as CGR involves the disclosure of full text and sentences and therefore the usage of probably many words that are only used for the purpose of completing sentences without having impact on the content.

3.3.4 Research process

The researcher needs to clarify what links exist between the various components of the research instruments and what methods will be applied to achieve this objective. This is a crucial element of any empirical research, according to Thietart (2001). The researcher needs to decide on the question of which empirical indicators are aligned to the objects, when and how.

Figure 3.4: Research process

(Source: author, 2015)

The following overview illustrates the relationship between the research questions, the hypotheses and the expected testing method.

Table 3.3: Overall context between research objectives, hypotheses and the methods

Research Objective	Hypotheses	Method of Testing	Sample
To develop a taxonomy for CGR of Financial Institutions, which should be XBRL-enabled	XBRL will promote transparency.	Mixed-Method (Qualitative followed by quantitative) Qualitative coding Content analysis with exploratory factor analysis	A sample of 34 Financial Institutions will be analysed using content analysis. Test of compliance with an International Global CG Code Frequency word analysis of disclosures on CG.

(Source: author, 2015)

3.3.5 Research variables

This thesis follows an exploratory approach. Based on the literature review, there is a large group of theories about CG; however, a research model with the same context of CGR and XBRL could not be identified. As the thesis treats the prevailing practical issue of corporate reporting, the research is based on international corporate codes, which is expected to be representative for the CGR of corporation and needs to be tested by this thesis.

Table 3.4: Research variables

Dependent variable	Independent variable
CGR	<i>Internal Governance/ Board organization</i>
CGR	<i>External Governance</i>
CGR	<i>Audit and Accounting</i>
CGR	<i>Shareholder Protection</i>
CGR	<i>Compliance</i>

(Source: author, 2015)

The five main categories relate to the principles of the qualitative compliance coding and the quantitative principal component analysis. These are further elaborated as follows:

Internal Governance/ Board organization

According to the OECD CG Code and the ISAR Good CG disclosure requirements, companies should disclose how their internal governance mechanisms are implemented to ensure that good CG is achieved. The company should set up an effective board structure by providing adequate oversight and control of the management. Internal Governance only relates to internal boards and committees, which can also consist of shareholders or stakeholders. Although different internal board struc-

tures and models exist (Hopt and Leyens, 2004), which can be prescribed by law and regulation or developed by the corporation (for example, in the US there is a one-tier board system and in Germany there are two-tier boards), CGR is about the disclosure of the highest board organization excluding the specific model that is followed by the corporation. Internal governance mechanisms rely very much on credible information. Credible information is defined within the accounting literature as accurate, complete and useful information about the company's net assets (Needles and Powers, 2010).

Shareholder Protection

Much has been written in the academic CG literature about shareholder protection (Reese and Weisbach, 2002). A common element is how well shareholders are preserved from self-utilization by the management. The company should enable the Investors to understand what risks are associated with investments in the company by providing disclosures on country-specific legal requirements and enforcement overall.

External Governance

External governance comprises the market of corporate control (Fama, 1980) from outside of the corporation and the institutional investor plays an important role therein by monitoring and influencing (Gillan and Starks, 2000). When internal control efforts have failed, external governance from market mechanisms should compensate. CGR therefore provides credible information on external mechanisms with a focus on the shareholder. It is comprised of disclosures about beneficiary ownership structures and shareholders' interest (Walsh and Seward, 1990), the exercise of control of shareholders or other stakeholders to reach control, direct control and corporate strategic plans to acquire control.

Audit and Accounting

Audit and accounting relates to several disclosures about the audit committee, the chosen auditor and related policies. The independence of the external auditor is one of the main topics and the corporation provides disclosures on organizational settings to ensure that external auditors are independent (Archambeault *et al.*, 2008).

The main risk in accounting is that financial statements are materially misstated. This can happen for different reasons: fraud or unintentional errors. Misstatements are deemed material if they could individually or collectively influence economic decisions that investors make based on financial statements. These risks may reduce investor confidence or cause reputational damage and may have legal consequences. A properly functioning accounting organization has to ensure certain quality standards in accounting:

- All transactions are recorded (Completeness);
- Transactions exist and have occurred (Existence);
- Transactions are recorded at the appropriate amounts (Valuation);
- Rights and obligations are appropriately recorded and classified;
- Disclosure and presentation of corporate reporting are appropriate;
- Unauthorized acquisition, use or disposition of assets is prevented or detected in a timely manner (Safeguarding).

Compliance

This category captures all reporting elements which disclose how the corporation complies with laws and regulations and sets its own principles on CG (MacNeil and Li, 2006). According to MacNeil and Li (2006), compliance topics comprise:

- Independent evaluation report.
- Relationship from executives to non-executive directors.
- Participation of non-executives in the company.
- Independence issues of non-executives and the impact on their governance role.
- Role and functions of the board.

3.3.6 Empirical content analysis

Beattie *et al.* (2004, p. 125) summarize the different methods for analysing annual report narratives: “subjective analyst ratings, disclosure indices, content analyses and linguistic analyses”.

Subject analysts’ ratings: Ratings can be differentiated between solicited and unsolicited ratings (Van Roy, 2005). Solicited ratings include the collection of additional information by performing interviews or questionnaires and the rating process is initiated by the company. Unsolicited ratings are done independently without the demand of the company.

Disclosure indices: An index consists of different variables to measure the quality of the disclosures (Urquiza *et al.*, 2009). The score is measured for each company and items comprising the index are usually weighted according to their importance.

Content analysis: Is a way of applying research with the aim of a general analysis of the composition of narrative information applying quantitative methods (Thietart, 2001; Guthrie *et al.*, 2004b) and is often used in the context of accounting research (Smith and Taffler, 2000; Holder *et al.*, 2013). Content analysis will be covered in detail, as it is the preferred method within this thesis for the analysis of the annual reports.

Linguistic analyses: Linguistic analyses are based on linguistic studies, which analyse the structure of the language used. Linguistic studies find that language is used to determine social class (Labov, 2011); however there is also literature in which narratives of annual reports are analysed (Frazier *et al.*, 1984).

Content analysis was selected for this study as it can be applied to categorize items of text and has the advantage that large volumes of qualitative data can be analysed (Lewis *et al.*, 2013). All narrative sections on CG, including the year-end financial reports and additional disclosures, served as material for the analysis.

Content analysis represents a research technique that aims to describe the content of communication in a systematic and quantitative way. According to Thietart *et al.* (2001, p. 356), content analysis consists of identifying significant patterns based on the words used, their frequency and their interrelationship. One of its key assumptions is to take word frequency as an indicator of importance (Abrahamson and Hambrick, 1997).

Content analysis is used by many studies (Guthrie *et al.*, 2004a; Kothari *et al.*, 2009), which mainly provide emphasis on what is being reported by analysing diverse empirical data within the qualitative text. According to a recent study about the application of content analysis, management research is assumed to be a domain in which the use of content analysis has been growing in the last 25 years (Duriau *et al.*, 2007). Several authors have confirmed that content analysis was utilized frequently as a method of analysis to examine nonfinancial reporting (Bowman, 1984; Brennan, 2001).

The main advantage of content analysis is the inter-subjective verifiability of the method (Bos and Tarnai, 1999). Category formation is the main task of content analysis. While it is mainly used for data that has been collected as part of non-structured or semi-structured methods, such as interviews, according to Thietart *et al.* (2001), content analysis can also be applied to written materials, including information from annual reports.

One important criterion for content analysis is the selection of data. For CG, several academic studies are available, which use different sources of information: public information issued by companies, including audited and unaudited financial reporting information; information that results from interviews with management and information provided to information intermediaries (Beattie *et al.*, 2004). For this thesis, the focus will be on the annual report, as many other theses and research articles have based their findings on the output of financial reports, as

they represent an essential part of the investor's communication (Nix, 2004).

A frequent criticism of content analysis is the assumption that the frequency of corporate information can be regarded as a valid signal for good disclosures on corporate governance (Beattie *et al.*, 2004). This thesis does not seek to use content analysis to assess the quality of CG disclosures; rather, it aims to obtain a taxonomy of the elements that are most frequently used for CGR based on a sample of financial institutions.

With regard to annual reports, content analysis was cited as an empirically valid method for research on corporate reporting (Guthrie *et al.*, 2004a). According to Guthrie and Matthew (2004), to become effective in content analysis, certain technical requirements have to be fulfilled (Guthrie, 1985):

First the groups for systematisation have to be thoroughly and operationally considered.

Second, objectivity represents an important evaluation criterion, as items need to be clearly allocated to specific categories.

Third, a further prerequisite is that the information can be quantified.

The unit of analysis can be selected by applying either a more formal or a content-related approach. A formal approach implies that words, sentences or page proportions are used, whereas units based on content would mean topics, themes, ideas or judgements (Borg and Mohler, 1994).

For the purpose of content analysis, different units of analysis exist: words, page proportions and sentences can be used.

Words: One possibility is to select words as the unit of recording. Words as units of analysis have the advantage that they can be measured and analysed with high certainty. As a disadvantage, it is often cited in the academic literature that senses and meanings cannot be captured and content analysis based on words may produce erroneous conclusions (Weber, 1990).

Sentences: An entire sentence is regarded as an appropriate means when the researcher aims at identifying words or phrases that occur closely together. In this approach, whole sentences are used for analysis (Stone *et al.*, 1962). The argument is that words can be better interpreted within the context of a sentence. Milne and Adler (1999) provide many supporting reasons for the application of phrases.

Numbers of words were chosen for use as the unit of analysis in this thesis, as word frequency can be calculated with reliable accuracy and the contents are comparable to each other (Unerman, 2000).

Content deals with the quantitative analysis of qualitative content (Berelson, 1971). According to Thietart *et al.* (2001, p. 356), content analysis consists of “inferring the signification of the discourse through detailed analysis of the words used, their frequency and their association.” One key assumption is that word frequency is assumed to be a sign of importance (Abrahamson and Hambrick, 1997).

Content analysis is a broad term that summarizes different kinds of analytical technique that can be applied to derive secondary meaning from information. The process can include both human and machine techniques (Leetaru, 2012). Data mining is a computer-based form of analysis, which is not only used for content analysis but is an interdisciplinary subject field within computer science and involves seeking and analysing patterns in large databases. The overall aim of data mining is to derive information from data by identifying structures (Leetaru, 2012).

Categorization is regarded as the process of linking a document with one or more subject categories (Kassarjian, 1977). Content analysis in its classical form does not provide concrete answers as to how categories are redeveloped (Krippendorff, 2012). For instance, according to Krippendorff (2012, p. 76), "How categories are defined...is an art. Little is written about it." However, within the framework of qualitative content analysis, the category formation is of central interest. The inductive-deductive and the deductive-inductive methodology are applied for the identification of main categories (Mayring, 1997).

The methodology of content analysis refers to the combination of phenomenological and hermeneutic systems of interpretation. Phenomenology is a radical form of empiricism. It argues that the conclusion of the positivist due to the critics of pure empiricism to integrate rationalism is wrong. Instead, it is argued within Phenomenology that the flux of empiricism itself contains an immanent logic and rationality, which is brought down to earth (Spurling, 1977). Phenomenology originates in the work of Edmund Husserl, according to which pure experience of the real world should be gained to the exclusion of everything else (Kockelmans, 1994). Instead of interpretation from the observer, the environment should stand alone.

The non-positivist research methods focus on prejudices and pre-knowledge, which the researcher brings into the research, involving work experience and tacit knowledge experienced by a person through exposure to similar situations. Therefore, qualitative research methods are preferred. Another aspect of phenomenology is the nature of the object being investigated, which also influences the research method (Zahavi *et al.*, 2003). The primary means of research used are interviews involving qualitative research methods. The researcher's objective is to discover meaning instead of measurement.

Hermeneutics is a methodological approach that focuses on the question of how an interpretation based on subjective personal intentions can achieve objective findings. Hermeneutics directs its attention towards signs, symbols and representations and intends to interpret and explain qualitative data (Crabtree and Miller, 1999). In Hermeneutics, several aspects become obvious for the researcher when analysing qualitative data. Historical circumstances are part of the ontology and appropriation: i.e. the reader should engage with the text. Hermeneutics has different meanings: pure hermeneutics argues that there is a true or objective meaning of a text, while post-modern hermeneutics argues that the reading of a text is always subjective.

Hermeneutics researchers will follow the hermeneutic circle: relating the whole to the part and the part to the whole. For example, a researcher who analyses an interview from a CFO about the CG of his or her company will only understand by knowing the concepts of CG, which will influence the analyses of the interview.

Content analysis generally consists of four main phases (Weber, 1990). It starts with the formulation of the research problem and the research question. Based on that, data is collected which supports the underlying research problem. In the next step, the coding process is initiated. The data is then analysed and interpreted.

3.3.7 Determining the number of factors

Various statistical methods are applied to extract factors to a pre-designed number. Depending upon the hypothesis, if either a hypothesized number of factors are tested or, due to pre-knowledge, a desired number of factors are investigated, different methods are applied. This thesis intends to extract a number of factors based on the characteristics of the data. Therefore, the research design is important for the adequacy related to a given number of factors, which needs to be evaluated. For this thesis, principal component analysis, latent semantic analysis and cluster analysis are applied. Although these are standard methods, the detailed results are provided within Appendix D.

3.3.8 Data sampling

The sample includes the major international financial institutions, comprising thirty-four companies listed on the NYSE as Foreign Private Issuers, which are non-domestic companies. This group was selected for content and research methodological reasons.

The NYSE is one of the few stock markets consisting of global-wide operating companies and is therefore very interesting, as the scope of research is a global CG study. The sample includes the major international financial institutions, comprising thirty-four companies. These corporations represent the largest non-domestic foreign filers in terms of revenues and market capitalization and are large international corporations. All these corporations are listed on the NYSE and therefore have to fulfil the SEC and SoX-requirements on CG. According to the NYSE listing rules, foreign private issuers listed have to report the differences between their domestic CG practice and the NYSE listing standards and thus contribute to more transparency for US investors for deviating CG practice. However, this is not expected to be a detailed item-by-item list.

The sample size is a result of the following applied criteria:

According to the NYSE directory (NYSE, 2015), as of 2015, the total number for foreign private issuers is 421. This total pool was further descoped by using the following criteria. The listing directory of the NYSE was selected for industry classification. As the research covers only financial institutions, the financial industry was selected, which consists of banks, financial services and insurance.

This empirical study aims to develop a taxonomy that can be used internationally for different companies in terms of country of origin and local reporting requirements. As the DBA follows the aim to treat a real company issue, a sample was chosen, which is the researcher's peer group. Financial institutions have specific CGR requirements, as, for instance, their business typically relies on loans and on deposits they receive from customers, which industrial companies do not have, as the nature of their business is different: therefore, specific CGR exist to protect customers from going bankrupt and from loss of deposits. Additionally, foreign filers are subject to the challenge to comply with local as well as listing-related CGR requirements.

This population was chosen because these financial institutions provide sophisticated CG, which is suitable for the study. To determine the appropriateness of the sample, the market capitalization of the worldwide existing corporations operating in the financial service sector was calculated and the sample reached about 50% of the worldwide market capitalization.

Table 3.5: Sample selection for empirical study

NYSE-listed non domestic filers		
Aegon	ING	Westpac
Aviva	Orix	Woori South Korea
Scotia	KB South Korea	
Credit Corp	China Life Insurance	
Banco Bradeco	Lloyds	
Bank of Chile	Maiden	
Barclays	Mitsubishi	
BVA Argentina	National Bank	
Macro Argentina	Nomura	
Brookfields	Noah Cina	
Bancolombia	National Westminster	
Deutsche Bank	Chile Pension	
Doral	RBS	
UBS	Santander	
HSBC	Shinhan Korea	
Inyuan	Sumitomo	
Σ 34		

(Source: author, 2015)

3.3.8.1 Geographic focus

The sample consists of thirty-four corporations operating in the financial service sector. They originate from seventeen different countries: 54% are from Europe, 10% from North America, 13% from Asia and 23% from other countries. Therefore, the analysis and the assessment of their reporting enable the researcher to analyse CGR on a global level. Foreign private issuers have to submit their annual reports on the SEC-required Form 20-F, which is comparable to Form 10-K for domestic US filers.

Figure 3.5: Country distribution of sample

(Source: author, 2015)

Figure 3.6: Sample distribution- IFRS vs. US – GAAP

(Source: author, 2015)

3.3.8.2 Information Sources

Many previous studies have derived their findings based on corporate information disclosed by firms (Healy and Palepu, 2001; Abraham and Cox, 2007; Elshandidy *et al.*, 2013). As the research question and the objective of the thesis are to develop an XBRL-based taxonomy that can be used in practice by companies, the selection of the annual reports as data is justified. The type of data collection is a specific differentiation for content analysis. The primary source of data related to the information source in this thesis was based on public available information provided directly by companies in their annual reports. Annual reports are classified as a primary source of data. The main area of focus for this study's data collection is narrative non-financial information related to CG.

The following arguments justify the selection of this data collection source:

Secondary sources of information represent a convenient and efficient way of collecting data; however, they imply two major disadvantages. Gaps with regard to the completeness of data are very probable, as the existing secondary sources are typically not fit for purpose regarding the research requirements of the new study. Additionally, data might be outdated, as economic and social changes are rapidly advancing. Specifically for research topics related to technological changes, with which XBRL can be associated, existing research might no longer be useful. According to the researcher's knowledge, during this study there did not exist secondary information that would have substituted the data collection on CG disclosures for foreign private issuers. However, there are numerous secondary sources that provide studies about corporate disclosures and governance matters, which have been taken into account in the literature review, in the interpretation of the results and in the assessment of the study's limitations and the outlook for future research.

The year-end financial report is recognized as an essential source for periodical disclosures (Botosan, 1997; Stanton and Stanton, 2002), despite the increasing information set which becomes available for investors. Primarily institutional investors regard the annual reports as the number one source and rank this source much higher than electronic database information. As the research objects are companies listed on the NYSE and corporations need to file specific financial reports, namely the annual report on form 20-F, the researcher will specifically base the present empirical study on the publication of these Annual Report forms. Consequently, primary data are used, which are publically available to all investors. The source for the empirical data is recommended and supported by other researchers who have undertaken similar research (Hommelhoff and Schwab, 2003). Annual reports can be regarded as a valid source as management “spends considerable time outlining the content of the report, sketching out much of it, and proof-reading and changing most of it to their taste” (Bowman, 1984, p. 63). According to Werder and Grundei (2006), primary public available data are an important source for CGR research. Although the annual report represents only one channel of communication from managers to shareholders, according to Lang and Lundholm (1993) the levels of annual report disclosures are positively correlated with the amount of disclosures submitted via other sources (Knutson, 1993).

3.4 Verification of the Methodology

3.4.1 Reliability

Reliability means that a conclusion based on specific data can always be drawn even by another researcher or at another time. Meanwhile, validity refers to giving the correct answer (Kirk and Miller, 1988). The two criteria are not symmetrical, as a conclusion can have high reliability but no validity at all. Reliability and validity are also important for qualitative research; however, for quantitative research methods, reliability is tested, whereas for qualitative research, invalidity is avoided by improving conditions (Thietart, 2001).

According to Krippendorff (1980), reliability for the application of content analysis can be summarized into three different dimensions. Stability is one such dimension and encompasses the challenge that the same findings should be achieved even under a renewed application of the tool used for analysis (Mayring, 2000). Replicability represents an additional dimension and requires that the findings of the coding can be reproduced under changed circumstances: for instance, the selection of different coders. Precision is the last dimension and relates to the requirement that the coding needs to fulfil specific standards of accuracy and completeness in order to account as a reliable source (Titscher and Jenner, 2000).

3.4.2 Validity

For content analysis, which will be applied in this thesis, validity relates to the precondition that for coding based on word units, these units need to have same meanings or connotations (Weber, 1990).

Validity can be differentiated between internal and external validity. Internal validity describes the relationship between the cause and the effect, while external validity requires that the research findings can be

extrapolated beyond the research sample (Johnson and Onwuegbuzie, 2004): i.e. the extent to which they are generalizable. The following questions are relevant:

Internal validity:

1. Is the research design adequate?
2. Are all important factors and relationships included in the design?
3. To prevent bias, have the independent variables been controlled?

External validity:

1. Can the findings be generalized?
2. Can the findings be applied to other cases on a broad basis?

According to Krippendorff (1980) with regard to the application of content analysis, three types of category of validity need to be separated. The first encompasses semantic validity, which refers to the ability to reconstruct analysed text with the category definitions identified (Krippendorff, 1980). The second quality criterion is correlative validity, which relates to testing the correlation with externally defined indicators. The third type of category is construct validity, which implies that previously implemented theories or representations are compared to the researcher's construct with the aim of evaluating its adequacy.

Higher CGR quality is defined in consistence with Hughes *et al.* (2009) using three main criteria:

- Higher percentage related to quantitative disclosures.
- Higher disclosure quality correlates with greater disclosure breadth (number of sentences) and disclosure depth (number of sentences per disclosed main topic).
- More sentences that are relevant for the assessment of how the business is predicted to perform in the future and less descriptive and backward-looking.

3.4.3 Generalizability

Generalizability implies that either the findings can be replicated or the theory can universally be applied to future research. For qualitative research, this holds true only for the theory, as data involves interpretation and is mainly prescriptive (Partington, 2002).

Particularly for this study, the question arises as to whether the intended developed taxonomy can be generalized internationally. For internal application, according to Krathwohl (1985, p. 5), the question would be formulated as follows: "Would this relationship replicate with people of other cultures, in other countries of the world?"

The world's largest financial institutions in 2013 (60) consisted of \$ 4.215 bn. market capitalization. The sample for the present study consists of about \$ 1.100 billion market capitalization. Considering the same indicator, this represents 25% of the largest financial institutions.

Table 3.6: Market capitalization of largest financial institutions

	Bank	Country	M cap, US\$b, 25/01/2013
1	Industrial & Commercial bank of China(ICBC)	China	233.6
2	China Construction Bank	China	207.6
3	HSBC Holdings	UK	202.4
4	Wells Fargo & Co	US	200.2
5	JP Morgan Chase & Co	US	187.6
6	Agricultural Bank of China	China	142.9
7	Citigroup	US	141.8
8	Bank of America	US	133.2
9	Bank of China	China	130.0
10	Commonwealth Bank of Australia	Australia	122.3
11	Westpac Banking Corporation	Australia	108.5
12	Mitsubishi UFJ Financial Group (MUFG)	Japan	96.37
13	Australia and New Zealand Banking (ANZ)	Australia	90.37
14	Royal Bank of Canada	Canada	87.17
15	National Australia Bank	Australia	82.38
16	Itau Unibanco	Brazil	77.37
17	Banco Santander	Spain	75.79
18	Toronto-Dominion Bank	Canada	75.67
19	American Express	US	75.57
20	Sberbank of Russia	Russia	71.45
21	Banco Bradesco	Brazil	71.00
22	BNP Paribas	France	68.83
23	Bank of Nova Scotia (Scotiabank)	Canada	68.83
24	Goldman Sachs Group	US	68.00
25	UBS AG	Switzerland	67.88
26	Sumitomo Mitsui Financial	Japan	66.85
27	US Bancorp	US	62.03
28	Standard Chartered	UK	60.46
29	Lloyds Banking Group	UK	59.89
30	Bank of Communications	China	57.28
31	Barclays Plc	UK	57.03
32	BBVA	Spain	53.40
33	Mizuho Financial Group	Japan	53.15
34	Royal Bank of Scotland Group *	UK	53.11
35	Nordea Bank	Sweden	47.94
36	Deutsche Bank AG	Germany	46.61
37	China Minsheng Banking Corp (CMBC)	China	44.02
38	Credit Suisse Group	Switzerland	43.44
39	Morgan Stanley	US	43.44
40	China Merchants Bank	China	43.11
41	Bank of Montreal (BMO)	Canada	40.86
42	Industrial Bank Co	China	37.52
43	BOC Hong Kong	Hong Kong	36.37
44	Banco do Brasil	Brazil	35.90
45	PNC Financial Services	US	35.87

(Source: author, 2015 based on annual reports 2013)

Within the NYSE-listed Foreign Private Issuers, the sample comprises 75% of the total market capitalization of all financial institutions.

4 Study results

This chapter presents the research findings of the qualitative and quantitative part related to CGR of Financial Institutions. The section begins with a general overview of the main results. In a consecutive step, the detailed results of the deductive and inductive development of the CGR taxonomy are described.

4.1 Overview of the results

The qualitative analysis delivers preconditions for the quantitative phase. Based on the qualitative data collection, overall compliance with a global CGR code is tested. The qualitative data are transformed using a quantitative-oriented scoring model. The sample comprised thirty-four global financial institutions. In a next step, a quantitative exploratory factor analysis is performed. Based on this, five main individual categories are identified: Internal Governance/Board organization, Shareholder Protection, Audit and Accounting, External Governance and Compliance. The results of the qualitative and the quantitative phase are then integrated. As part of this integration, Latent Semantic Analysis (LSA) is used. The ISAR governance code and the results of the second part are converted into a group of document vectors. A normalisation is executed and a measurement for equilibrium is calculated between all vectors of the remaining five main categories.

As a mixed-method approach is followed, the detailed results are divided into two sections: the first describes the findings of the qualitative approach and the second describes the findings of the quantitative phase. The sample for the qualitative and the quantitative analysis does not vary, as the aim of the mixed-method approach is mainly to validate the results gained based on the quantitative analysis. The five main categories of CGR are further detailed into sub-categories in the taxonomy. A summary after each main category summarizes the main findings.

Consistent with former research from Heugens (Heugens, 2007), the European Corporate Governance Institute (ECGI) was selected as a source. According to the ECGI, as of 2013, CG codes existed in 105 countries. As several codes have been established in some countries, and transnational organizations such as the OECD and the EU have also developed CG codes, the overall pool consisted of 180 different CG codes.

Besides the theories about CG, which were developed in the last ten years, several initiatives were launched to develop best-practice codes, recommendations and guidelines for CGR. The development of CG makes apparent that not only do institutional investors require a voluntary framework (Solomon *et al.*, 2000), but to support the general public interest, codes of best practice were developed, which improve deficiencies of regulations (Aguilera and Cuervo-Cazurra, 2009). According to Strenger (2004), there are several soft factors that it is difficult for laws and regulations to cover.

The main objective of the codes and guidelines is to establish a reference point and a framework (Brown *et al.*, 2011). Since 1992, more than 131 CG codes have been developed in 49 countries (Heugens, 2007). Local forces such as politics lead to a delay in governance changes and the convergence of CG is a slow process, taking place over relatively long periods of time (Brown *et al.*, 2011).

Good CG standards are linked inevitably to the principles of codes of CG. The development started with the introduction of the Cadbury Report in 1992 and further spread across other European countries. The Cadbury Code can be regarded as the leading CG code, which has inspired many other codes all over the world (Nix and Chen, 2013). The Cadbury Code was an incentive or motivation for other countries to develop their own country-specific CG codes (Aguilera and Cuervo-Cazurra, 2009).

CG codes can be separated into international, national and company-wide codes such as the company's article of association. Transnational organizations such as the OECD and the International CG networks have also started to develop international standards on good CG. Additional groups of developers or issuers of codes include shareholders' associations such as DSW and Ethos and institutional investors such as CalPERS.

In most countries today, these principles remain recommendations and are not legally binding. A general debate occurs in the academic literature as to whether CG guidelines should be replaced by hard laws, as enforced by the US with the Sarbanes Oxley Act in 2002. Most of the CG guidelines follow a "comply or explain" approach; however, studies show that investors are tolerant towards non-full compliance and therefore the impact on performance is small (MacNeil and Li, 2006).

Academic research shows that globalization and liberalization of financial markets are key contributors to the foundation and introduction of codes related to CG, as listed companies compete for capital (Brown *et al.*, 2011). The development of codes can be explained with deficiencies of CG systems (Cuervo, 2002). According to Heugens (2007, p. 1289), codes represent the "ideal state of CG, which serves as an informational focal point". These codes represent "voluntary" guidelines and not legally required laws, differentiating them from hard laws enforced by legislation.

The following is a summary of the best known codes of CG, which will be relevant for the development of the taxonomy. The main topics for good governance systems involve remuneration, board structure, and relationship to shareholders, accountability, independence, disclosure and transparency.

Table 4.3.1: Codes of CG applicable for sample

Name of Codex	Country/Years	Companies affected	Main elements
Cadbury Committee	United Kingdom/ 1992	Barclays, RBS, HSBC, Lloyds	<p>A code of Best Practices has the following recommendations:</p> <ul style="list-style-type: none"> • Board of Directors: e.g. regular meetings • Non-executive Directors: e.g. independent judgement • Executive Directors: e.g. executive pay should depend upon a remuneration committee • Reporting and Control: e.g. report about the company's system of internal control • Uses a "comply or complain" principle
German CG	Germany/2000	Deutsche Bank	<p>Companies need to disclose CG statements considering a "comply or explain" principle</p> <p>Main principles are:</p> <ul style="list-style-type: none"> • Supervisory Board is separated from Management Board • Companies need to prepare a CG statement, in which they comply or explain deviations from the code of CG • There are about 200 single rules in total, which are prescribed by the code

(Source: Zuttoni and Cuomo, 2008)

Table 4.3.2: Codes of CG applicable for sample

Name of Codex	Country/Years	Companies affected	Main elements
Sarbanes-Oxley Act (SOX)	United States/2002	All	Management is required to produce an “internal control report” as part of each annual Exchange Act report. SOX also intends to improve external auditor independence and to strengthen the company’s audit committee. Listed companies need to name one “audit committee financial expert”.
Spanish	Spain 2006	Santander	<p>Follows the “comply or explain” approach with the following main rules:</p> <ul style="list-style-type: none"> • Board of Directors: independence of Management, Approve the company’s strategy, Publication of an Annual CG Report • Gender diversity • Chairman should be responsible for the efficient working of the council • Board meetings at least eight times a year • Independent directors should have no past, present or future ties with the company

(Source: Zuttoni and Cuomo, 2008)

Table 4.3.3: Codes of CG applicable for sample

Name of Codex	Country/Years	Companies affected	Main elements
Swiss Code of Best practice for CG	2002	UBS	<p>Shareholders</p> <ul style="list-style-type: none"> • Shareholders have the final decision • Exercise of shareholders' rights should be supported by the company <p>Board of Directors</p> <ul style="list-style-type: none"> • Responsibility for main corporate strategy • Power and responsibilities should be laid down in the Article of Association <p>Auditing Disclosure</p> <ul style="list-style-type: none"> • Auditors should comply with guidelines on independence <p>Disclosure</p> <ul style="list-style-type: none"> • Disclosure of CG in its Annual Report
OECD, 1998 and 2004	Principles of CG	All	<ul style="list-style-type: none"> • Principles of good CG should be implemented throughout all processes of the corporation • Rights and equitable treatment of shareholders • Interests of other stakeholders • Roles and responsibilities of the board • Integrity and correct behaviour in line with ethical guidelines • Disclosure and transparency

(Source: Zuttoni and Cuomo, 2008)

Table 4.3.4: Codes of CG applicable for sample

Name of Codex	Country/Years	Companies affected	Main elements
Basel Committee 1999	Principles of sound CG	All	<p>Basel committee defines eight principles for sound CG for banks:</p> <ul style="list-style-type: none"> • Qualification of Board Members • Ensure that the board of directors signs off the bank's strategy and is part of the decision process with regard to main principles • Board of directors should provide clear definitions of ownership and accountability • Ensure appropriate oversight by senior management • Board and senior management should make effective use of the work conducted by the internal audit function • Compensation Policies and practices should be controlled for consistency by the Board • Bank should be managed in a transparent manner • Board and senior management should understand the bank's operational structure

(Source: Zuttoni and Cuomo, 2008)

Despite the fact that CG codes comparing different countries are heterogeneous, several authors have identified universally applicable practices (O'Shea, 2005; Aguilera and Cuervo-Cazurra, 2009; Monem, 2011). According to O'Shea (2005), the following six practices can be summarized explicitly or implicitly to have recommendations:

1. Reconciliation between executives and non-executives;
2. Task separation between the supervisory board and the management board;
3. Valuable submitted disclosures to the board without delay;
4. Appointment of new directors defined by transparent and clear procedures;
5. Financial reporting is balanced and can be followed by a knowledgeable third person;
6. Establishment of a sound internal system of control.

4.1.1 Unit of analysis

According to Weare and Lin (2000, p. 273) “sampling units, context units and recording units” exist. Sampling units define how many units of the total population should be considered for the analysis. Context units, according to Riffe, Laff and Fico (1998, p. 61), are “the elements that cue researchers to the context that should be examined in assigning content to categories” (Riffe *et al.*, 2005). They are units of textual matter, which represent boundaries for the information considered. Context units can overlap and contain many recording units. Recording units, by contrast, are units that are broken down based on the qualitative material, and depending upon the granularity, there does not exist a logical limit (Krippendorff, 2012). In other words, the sampling units are the ones that are counted and provide the overall framework, containing recording units, which are surrounded by the context units. As a consequence, larger context units imply more complex recording units than do smaller context units.

The implication of a word can vary depending on its syntactical role within a sentence. Therefore, the context in which the words are embedded needs to be considered by the analyst and consist of all the knowledge that the analyst applies in the form of “scientific theories, plausibly argued propositions, empirical evidence, grounded in intuitions, or knowledge of reading habits” (Krippendorff, 2012, p. 33). For this thesis, words were selected as recording units.

Two approaches to coding data exist, with marginally different characteristics: these are *a priori* and empirical coding (Thietart, 2001). *A priori* coding involves the development of categories based on experience or the results of earlier studies prior to coding. For empirical coding, the categories are developed from the material (Reis and Judd, 2000).

A priori: This implies that the methodology is already known before the start of the analysis. The categories are confirmed by an experienced coder and the coding is implemented for the data (Weber, 1990).

Empirical: There are two main approaches to empirical coding: inductive and experimental (Smith, 2000). Inductive empirical coding means that the categories are derived directly from the material without preconceptions; this approach is used for preliminary, exploratory or qualitative research (Smith, 2000). In contrast to *a priori* coding, emergent coding starts with some preliminary examination of the data and continues with the establishment of categories. The experimental approach reflects the effect of variations in an independent variable. Experimentation enables the researcher to manipulate variables and observe the effects of this manipulation (Thietart, 2001).

According to Stemler (2001), the following steps involve emergent coding: First, at least two people must independently review the material and develop a list of important items. Secondly, the coder focuses on the documentation and examines possible deviations. Third, the coder

applies an aggregated list to perform the coding without interference. Fourth, reliability is checked by the researcher: A common measurement term is intercoder reliability. According to Tinsley and Weiss, intercoder reliability is "the extent to which the different judges tend to assign exactly the same rating to each object" (2000, p. 98). The exact level of interrater reliability that needs to be obtained has not been clearly identified. Intercoder reliability was followed in the next section.

4.1.2 Category and sub-category development

The starting point for the development of the taxonomy will be the United Nations International Standards of Accounting and Reporting (ISAR) “Guidance on Good Practices in CG Disclosure” (Trade and Development, 2006). This code was selected because it provides the most comprehensive CG disclosure requirements on a global level (Ojo, 2010).

The qualitative analysis consists of testing the compliance of the sample with the “Guidance on Good Practices in CG Disclosures” (GPCGD) issued by the United Nations. To analysing compliance, two dedicated testers were identified to test the compliance based on a defined codebook. A codebook, according to Robbins (2008, p. 65), is “a data dictionary, [which] guides data recording by standardizing responses and maintaining consistency such that all those responses for handling the data are able to code and enter the data the same way.” For each response, specific codes are laid down in the codebook (Robbins, 2008).

The GPCGD was systematically searched sentence by sentence for recommendations with key words “may” and “could” and mandatory recommendations with keywords “should” and “must”. This method follows the sentence-based coding approach also pursued by Hackston and Milne (1996). As a result, a total of seventy-five code disclosures were identified, of which sixty-nine are mandatory and six are recommendations. Coding review was performed by two independent researchers based on coding instruction, as recommended by Stemler (2001) (See Appendix Code Book). The results were tested for inter-coder reliability. The complete Table is found in Appendix A. Under the column classification, “R” indicates a recommended disclosure element, while “M” indicates a mandatory disclosure requirement.

4.1.3 Test of Intercoder Reliability

This section comprises a check of the reliability of the coding. In the academic literature, several coefficients have been developed and recommended for the valuation of intercoder agreement, which is the most frequently occurring base level (Lombard *et al.*, 2004; Popping, 2010). For the evaluation of inductive collected categories, a best intercoder coefficient has not yet been developed and therefore a large variety of coefficients exist. According to Conger and Ward (1984), seventeen different coefficients exist for binary data. For this thesis, the following five intercoder reliability agreement measurements are considered, which follow the recommendation from Krippendorff and represent the most frequently used coefficients in content analysis (Milne and Adler, 1999; Krippendorff, 2004): Cohen's Kappa, Phi, Cramer-V, Gamma and Kendall-Tau-b. These five coefficients are regarded as more advanced compared to the percentage of agreement methods, as these are considered as more difficult to interpret compared to methods considering agreement expected by chance. Once the reliability has been proven, the coding is applied on a large-scale basis. The final stage involves a periodic quality control check.

It is widely accepted in the academic literature that data and interpretations of data cannot be considered as reliable and valid without a test of intercoder reliability. The exact level of intercoder reliability that must be obtained has not been clearly described. However, according to the academic literature, a minimum sample for a statistical comparison of two coders contains a frequency of between 30 and 50, which is fulfilled with a frequency of 34 within this empirical research (Früh, 2011).

Kappa: Kappa is a very frequently used measure of agreement (Pallant, 2010). It was developed by Cohen and contains the assumption of independence of coders and random coder effects (Cohen, 2013). According to Peat (2001), a coefficient of 0.5 implies moderate agreement, while a coefficient above 0.7 indicates good agreement and finally a

coefficient over 0.8 can be regarded as very good agreement (Peat *et al.*, 2001).

Phi: This statistic measures the degree of association between two dichotomous variables (Guilford, 1941). It is a correlation coefficient and measures association on a scale between 0 and 1, where 1 indicates perfect association and 0 indicates no association (Pallant, 2010).

Cramér's V: This indicator is used to calculate the correlation between two variables, comprising a value between 0 and +1 (inclusive). This coefficient is founded on Pearson's chi-squared statistic and the name is derived from its founder (Cramér, 1999).

Goodman Kruskal Gamma: Goodman-Kruskal gamma shows how many more concordant than discordant pairs exist divided by the total number of pairs excluding ties. Goodman-Kruskal gamma is used to measure the association between the ordinal variables. Perfect association is achieved when the coefficient is 1. If X and Y are independent, then the coefficient is 0.

Kendall's Tau-b: Kendall's Tau-b has the same implication as gamma except for the improvement of ties. Goodman-Kruskal-Tau-b measures association for cross tabulations of nominal level variables. It is based on random category assignment. It measures the percentage improvement in predictability of the dependent variable (column or row variable) given the value of other variables (row or column variables). Goodman-Kruskal-Tau-b is the same as Goodman-Kruskal lambda except that the calculations of the tau statistic are based on assignment probabilities specified by marginal or conditional proportions.

Table 4.4: Intercode reliability

Main Category	Phi	Kappa	Cramer	Gamma	Kendall-Tau-b
I.	0.836	0.836	0.994	0.836	0.836
II.	0.907	0.906	0.907	0.999	0.907
III.	0.702	0.660	0.702	1.000	0.702
IV.	0.769	0.743	0.769	1.000	0.769
V.	-0.054	0.046	0.054	-1.000	-0.054
Total	0.839	0.838	0.871	0.843	0.839

(Source: author, 2015, based on SPSS)

An important step within the assessment of intercode reliability is the definition of an acceptable level of reliability. Although no general rule exists, Neuendorf (2002) reviews several studies and concludes that coefficients of 0.9 or greater can be regarded as almost always sufficient, 0.8 or greater is regarded as sufficient in many circumstances and 0.7 is only sufficient for exceptional cases.

The overall result of the five coefficients demonstrates similar coding from the two coders. The two coefficients phi and kappa give proof that both coders have assessed similarly, while Kappa, Gamma, Phi and Kendall-Tau-b achieve the same results for the Financial and Non-Financial categories. As the total value for kappa, at 0.838, is above 0.7, the agreement can be regarded as very good. Focusing on the individual category-related results, only category V, "Good practices for compliance", fails to demonstrate a high level of agreement. The kappa value, at 0.046, is almost 0, and therefore almost no association exists. This result is mainly attributable to the fact that there are only two codex requirements for category V. Therefore, the one deviation that exists between the two coders with regard to category V has a relatively high impact on the total coefficient for this category.

4.1.4 Test of compliance

Based on the qualitative data collection, the overall compliance with the global CGR code is tested. The qualitative data are transformed using a quantitative-oriented scoring model. The scoring model, which is also used by Black *et al.* (2006a), is based on the concept that the information efficiency increases the more disclosures are provided to the investor. The coding results of the single reporting elements are calculated to a total score for each main category. The summary to an equal weighted total score enables the researcher to create an indicator and assess different CG attributes. This quantification of qualitative characteristics improves capital market information efficiency and facilitates investor decision. This is confirmed by Barth *et al.* (2011), who conclude that firms with more transparent disclosure can take advantage of decreased cost of capital, as investor reluctance is mitigated (Barth *et al.*, 2013). These indicators facilitate comparisons between companies related to their CG and the optimal asset allocation of the investor's capital is improved. This supports that the investors pay those costs of capital that are applicable to the individual risk/ return situation.

Table 4.5 on the next page sums up the results of the compliance test with the "Guidance on Good Practices in Corporate Governance Disclosure" (Unites Nations, 2003) based on the qualitative content analysis. To enable a more comprehensive appreciation, the different categories are described in detail.

Table 4.5: Compliance with ISAR

Main categories	Mean value	Standard deviation	Variance	Min	Max	Main Category
	0.89572193	0.24778466	0.06753696	0.117647059	0	Financial Disclosures
II.	0.84915966	0.338533717	0.12476102	0	1	Non-Financial Disclosures
III.	0.89304813	0.28301858	0.08810947	0	1	General Meeting
IV.	0.77941167	0.0791936	0.00836217	0	1	Timing and Means of Disclosures
V.	0.85294118	0.147058824	0.125	0.5	1	Good Practices for compliance
Total	0.85405653	0.219117876	0.06640444	0.117647059	1	

(Source: author, 2015, based on SPSS)

Overall, a high degree of compliance can be concluded, as the total mean value of 0.85 is highly acceptable. Significant differences exist related to the compliance of the individual main categories. The highest compliance is achieved within the main category on “Financial Disclosures” and on “General Meeting” with mean values of 0.895 and 0.893 for the second category. However, the main category “Timing and Means of Disclosures” scores only 0.77 as a mean value.

Figure 4.1: Boxplot total compliance score

(Source: author, 2015, based on SPSS)

4.1.5 Correlations of main categories

In the following section, correlations between the categories are tested.

Table 4.6: Correlations of main categories

		I	II	III	IV	V
I	Pearson-Correlation	1	.376	-.253	-.322	-1.000**
	Sig. (2-tailed)		.254	.682	.678	.000
II	Pearson-Correlation	.376	1	-.999**	.750	-.332
	Sig. (2-tailed)	.254		.000	.250	.668
III	Pearson-Correlation	-.253	-.999**	1	-.752	.318
	Sig. (2-tailed)	.682	.000		.248	.682
IV	Pearson-Correlation	-.322	.750	-.752	1	.322
	Sig. (2-tailed)	.678	.250	.248		.678
V	Pearson-Correlation	-1.000**	-.332	.318	.322	1
	Sig. (2-tailed)	.000	.668	.682	.678	

(Source: author, 2015, based on SPSS)

Correlations are measured using Pearson's *r*. The main categories show mixed correlations to each other, indicating either strong, moderate or weak relationships.

- The main category "Financial Disclosures" shows the strongest correlations with the main category of "Timing and Means of Disclosures".
- The main category "Non-Financial Disclosures" is strongly correlated with the main category "General Meeting" and category IV "Timing and Means of Disclosures".

- The main category “General Meeting” indicates a strong correlation with the main category “Non-Financial Disclosures”.
- “Timing and Means of Disclosures”: this category shows strong correlations with category II and III.
- “Good Practices for compliance” as a category is strongly correlated with “Financial Disclosures”.

Considering the two-tailed significance values, the overall interpretation is that not all main categories are strongly correlated with each other. The corporations selected differ with regard to CGR and the information that is submitted externally. Correlation between the main categories only exists on a selective basis. This can be explained by the fact that this CG code is one of many different existing codes, which is why the companies in the sample do not comply with disclosure requirements. Other studies, such as the work of Stiglbauer (2010a), report different findings and conclude that the sample shows high overall correlations with regard to the main categories of CGR. Stiglbauer’s study focuses on the compliance of companies of German origin with the German CG code, which is not directly comparable with this thesis’s research findings, as the sample for this thesis has a global scope.

Future studies should extend the sample size to comprehend the complexity of CGR and study the impact of the reporting of single CG categories on corporate success.

4.1.6 Correspondence Analysis

What has become obvious is that to develop standardized main reporting elements is a complex task. While the level of complexity is caused by semantic variations due to the qualitative nature of the majority of the CGR, the quantification of qualitative information leads to mixed results. The test of compliance and the correlation analysis have shown that although a high compliance score can be substantiated, the correlations

between the main categories only show high correlations on a selective basis. This demonstrates the level of complexity for CGR, also confirmed by Hellwig, which explains the level of complexity with the large impact of variations in mechanisms (Hellwig, 1997). The United Nations International for Standards of Accounting and Reporting “Guidance on Good Practices in CG Disclosures” (United Nations, 2003), with 75 single components, is noted for its high level of complexity. The correspondence analysis is an exploratory analysis of categorical data (Benzécri, 1992). It enables exploration of the relations among multivariate categorical variables (Hoffman and Franke, 1986). With this method, the links between the categories of two qualitative variables are visualized. The variables can be available as an observations/variables table, as a contingency table, or as a more general type of two-way table. As the existing SPSS Version 22 did not support the correspondence analysis (CA), the CA was performed with the software XLSTART by applying Analyzing data > Correspondence Analysis (CA).

The two groups “ISAR CG Code” and “Compliance” are integrated into a crosstab.

Figure 4.2: ISAR CG Code and level of compliance

(Source: author, 2015, based on XLSTART)

The graph shows that the majority of the sample achieves a high level of compliance with the given 75 CGR rules. Only a few financial institutions, which are located outside the centre of the graph, represent outliers: Bank of Chile, BVA Argentina, Scotia Credit Corp, Aegon, Aviva, Woori South Korea and Banco Bradeco. These outliers have a level of compliance between 76% and 89%. As a result, there is no evidence of latent structures within the ISAR CG Code that would enable a reduction in complexity without the loss of information.

4.2 Inductive development of categories

The researcher follows the methodology proposed by Neuendorf (2002) for content analysis to identify main categories for the taxonomy. First, a pre-study is performed, which aims at analysing the sample on a more aggregated level. The aim is to identify whether common reporting concepts exist across the sample. The existence of such homogeneous concepts is a precondition for a further detailed taxonomy development based on the existing academic literature on taxonomy development (Weimer and Pape, 1999). Principal component analysis is used, because this procedure is usually preferred as a method of data reduction. Tests of appropriateness based on Pallant (2010), Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling are applied. The varimax rotated factor solution is utilized to identify meaningful dimensions of conformity.

4.2.1 Results of pre-study

In a first step, the selected text is screened with regard to the information content related to CGR and how the company structures this information. In accordance with Healy and Palepu (2001, p. 431), changes and the structure of CGR disclosures are not regarded as a "random event" and are instead seen as interrelated with changes in firm governance. According to the segregation between CGR and other Financial and Non-financial reporting, the researcher was able to eliminate sections that do not relate to CGR.

Based on Burnard (1991), these CGR sections of the annual reports of the selected sample were re-read several times and the main topics and headings noted in the margins to explain all aspects of the content as long as it is necessary. By reading and rereading, several review cycles were performed to capture those concepts that recur more often (Heugens, 2007). To better measure the importance, the word frequen-

cies for each section of the CGR were calculated using the content analysis software NVivo.

The following key words were searched to support the identification of the relevant sections in the Annual Report: Corporate, Governance, Board, Directors, Executives and Remuneration. Within this step, the minimum threshold was defined at 100 words, so that CG is at least regarded as a concept of importance. To improve reliability and validity, specific filling words were excluded, such as “the”, “a” and “or” (Please see Appendix “Word Exclusion” for the full list).

Based on this first step, the word frequency of the CGR could be calculated. Looking at the placeholder of CG, different locations within the Annual Report could be traced back. This also considers the ordering of financial information, which according to the “Belief-and-Adjustment Model” presents good information with the aim to achieve a primacy effect. The order or structure of the information seems to be as important for investors as the content disclosed (Hogarth and Einhorn, 1992a; Baird and Zelin, 2000). The “Belief-and-Adjustment Model” (Hogarth and Einhorn, 1992b) differentiates between step-by-step and end-of-sequence information gathering. According to Baird and Zelin (2000), step-by-step information collection is assumed for the analysis of the shareholder letter, which is one part of the Annual Report. For CGR, step-by-step information collection is also assumed, which implies that the good information will be placed at the start of the annual report.

Table 4.7.1: CG Disclosures: CG Report, Item 16G and word frequency

NYSE-listed non domestic filers		
Companies	Word Frequency	Placeholder within the Annual Report on Form 20-F
Aegon	964	Item 16G, Item 6
Aviva	15774	CG Report
Scotia	2997	CG Report
Credit Corp	784	Item 16G
Banco Bradeco	966	Item 16G
Bank of Chile	5301	Item 16G
Barclays	11898	MD&A-CG and Additional Information
BVA Argentina	11185	Item 16G
Credit Suisse	16844	MD&A-CG
Macro Argentina	12402	CG Report
Brookfields	10930	CG Report
Bancolombia	7253	Item 16G
Deutsche Bank	1981	Item 16G and CG Report
Doral	2453	Item 10
UBS	16113	CG Report
HSBC	21686	Management and Discussion
Inyuan	351	Item 16G

(Source: author, 2015)

Table 4.7.2: CG Disclosures: CG Report, Item 16G and word frequency

Companies	Word frequency	Placeholder within the Annual Report on Form 20-F
ING	1612	Item 16, Item 6
Orix	351	Item 16
KB South Korea	431	Item 16
China Life Insurance	721	Item 16
Lloyds	5618	MD&A-Corporate Governance
Maiden	4304	CG
Mitsubishi	1140	Item 16G
National Bank	300	Item 6
Nomura	630	Item 16G
Noah Cina	881	Item 16G
National Westminster	241	Item 16G
Chile Pension	2110	Item 16G
RBS	3639	Item 16G
Santander	1560	CG
Shinhan Korea	231	Item 16G
Sumitomo	351	Item 16G

(Source: author, 2015)

Regarding the results of the above analysis of the placeholder, it becomes obvious that there are companies which provide CG-related information in the Management Report and other companies that disclose this information as part of the compensation or remuneration section or as part of Item 16G. Applying the “Belief-and-Adjustment Model” and assuming that the corporation intends to provide an impression of good existing CG, the ordering of the CGR to the front could reflect this model.

There are codes and legal requirements that define the placeholder in the annual report for disclosure information on CG. According to the German CG Code of 2013, as an example, companies are recommended to aggregate all disclosures on CG in a comprehensive CG Report (GCGC, 2013).

An annual report consists of information with different levels of credibility and assurance. This is the result of the fact that the annual report is audited; however, the audit opinion only covers specific parts of the report. According to Hodge (2001), the example of hyperlinked unaudited information to audited information provides evidence that companies can influence financial report users' perceptions about credibility. Companies moving CGR to the front of the Annual Report within the MD&A or other parts of the Management Report could imply that investors assess the credibility of information that is placed early in the report more highly than information that is placed at the back.

Depending upon the jurisdiction, the financial statements comprise the main statements and the notes: this is applicable for all of the countries in the sample. In Germany, however, the Management Report also needs to be audited. As a consequence, the remaining parts of the annual report are not covered by the audit opinion.

In addition, the SOX (Romano, 2005) has introduced the requirements to establish controls, which relate to the financial statements. From a management perspective, shifting CGR to the financial statements or the management report will also increase the level of control and accountability. CGR in the sample is not part of the audit opinion. Several studies analyse how disclosures are perceived by investors. They conclude that the understanding of the relevance and reliability of information is different between the professional institutional investor and the private investor due to different skills and the ability to understand and use unfiltered information (Elliott, 1994; Hodge and Pronk, 2006). Responding to the corporate scandals during the period 2000 and 2001,

the Sarbanes-Oxley Act (SOX) became mandatory on July 30, 2002. The law's specific target is to reform CG and it required the establishment of a reporting system that would increase the transparency of CG. Due to the SOX, every firm is obliged to present annually the structure, composition, and size of its board and whether, for senior financial officers, ethical rules are codified in its Form 10-K and 20-F. Moreover, both the NYSE and the National Association of Securities Dealers Automation Quotation System (NASDAQ) have introduced CG rules regarding the role and authority of independent directors (Lander, 2003).

The requirements of SOX aim to decrease the concerns of investors and to improve investors' confidence in the functionality of CG mechanisms. SOX requires firms to improve their governance practices, to increase director independence and to create boardroom structures that find management accountable. SOX, with the regulations imposed by the major US stock exchanges, has not only had an impact on disclosures but also improved the corporate decision-making process, improved organizations' accountability systems and ultimately improved firms' overall efficiency and performance. As a consequence, if the regulations achieve the desired results of improved CG, investors should expect to see an overall increase in CG ratings from 2002 to 2005. However, with regard to the financial crisis, it has become obvious that SOX did not have a positive impact on CG for all companies.

Comparing the number of word frequencies related to the sample, it can be concluded that there is a wide spectrum in the extent of CGR, as the number of words ranges from around 200 to 21000 words. The different numbers of words and locations of CGR can be explained with different legal regulatory reasons.

CGR has become very complex for multinational companies in recent years, as it involves statutory compliance with multiple rules and laws, coping with heterogeneous and even non-unitary systems of CG. Addi-

tionally, CGR also comprises the compilation of codes and industry-specific standards.

As part of this step, a unit for measurement is selected that is reconcilable to the research question. There are basically three units of measurement that are selected: words, sentences and pages. The objective for the calculation of word frequency is to find an acceptable distribution of common categories.

4.2.2 Extraction of Corporate Governance Disclosures

This section will identify which of the existing statistical methods explored in section 3.5.3 will be selected to answer the research question in this thesis. According to Mayring (2000), several systematic methods have been developed, which are intersubjective, reproducible and verifiable and can be clustered into four general groups:

- Simple frequency methods measure specific text content.
- More complex frequency methods consider indicators of variables based on previously developed theory.
- Contingency analysis identifies correlations of categories that occur combined in text content.
- Intensity and scale analysis of ordinal and categorical variables or categories.

In general, statistical analysis is based on statistical tests, which can be divided into the two categories of parametric and non-parametric tests. Parametric tests assume that there exist a specific distribution of one of the parameters of a population, whereas non-parametric tests are those for which it is not a requirement to define the parametric distribution (Thietart, 2001).

4.2.2.1 Assessment of suitability of data

Statistical analysis involves several steps (Stevens, 2002). The first step involves the description of the nature of the data to be analysed. It is the objective of this task to explore the relation between the data and the underlying population, for which a synonym is the suitability assessment of the data. The main two aspects of a suitability assessment of the selected data comprise the sample size and the extent of the correlation between the items (Hoaglin *et al.*, 1983; Pallant, 2010). Several criteria exist to assess the suitability of the sample size: absolute sample size and relative sample size. The correlation of the factors is measured using coefficients, which can give proof of the strength of the relationship. For this thesis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser and Caffrey, 1965) and Bartlett's test of sphericity (Bartlett, 1954) were calculated using SPSS.

Usually, the sample size is an extraction or a portion of the total population and as a matter of fact larger sample sizes more accurately represent the characteristics of the population than smaller sample sizes (Marcoulides, 1993). This is also due to the assumption that the correlation coefficient fluctuates more in a small sample size compared to a large sample size. This also implies that if the coefficient is more stable and higher loadings are achieved, a small sample size can also become adequate.

With regard to the sample size, different estimates exist of the absolute sample size for the choice of principal component and factor analysis (Pallant, 2010): according to Comrey and Lee, an absolute sample size of 100 is regarded as poor, 200 represents a fair sample size, 300 is good and 500 is regarded as a very good sample size (Comrey and Lee, 2013a). Other authors, such as Cattell and Vogelman (1977), recommend the minimum absolute sample size to be 250. However, there are several studies that confirm that absolute N is too simplistic

for assessment of suitability, as the data can vary considerable depending on the scale of the number of factors (Bobko and Schemmer, 1984; Gorsuch, 2013). Moreover, absolute numbers are very difficult to compare.

Instead of absolute numbers, relative ratios are often recommended, i.e. N:p, which is the “ratio of sample size to the number of factors” (Cattell and Vogelman, 1977, p. 290). According to Gorsuch (2013), a ratio of five is recommended; however, Cattell came to the conclusion that the ratio should be three to six (Cattell, 1962).

The Kaiser-Meyer-Olkin (KMO) index has a minimum of 0 and a maximum of 1, while 0.6 is regarded as the threshold for good factor analysis and Bartlett’s test of sphericity is smaller than 0.05 (Pallant, 2010).

Table 4.8: Assessment of data suitability

Application	Name	Measurement	Range	Significance or positive value	Results	Source
SAMPLE	Absolute sample	Number of absolute	any	100 = poor 200 = a fair 300 = good 500 = very good	Poor	Comrey and Lee (2013)
	Relative	N:P	any	3-6	6	Gorsuch 2013
CORRELATION	Bartlett’s test of sphericity	Significance	any	$P < 0,05$	0,000	Bartlett (1954)
	Kaiser-Meyer Olkin	Sampling adequacy	0-1	> 0.6	0.6	Kaiser (1970)

(Source: author, 2015)

Statistical rules of thumb have not been considered in this thesis, as those rules are criticized in the academic literature for not being robust (VanVoorhis and Morgan, 2007).

For these data, the KMO is 0.601, which is a good value. For Bartlett's test of sphericity, $p = 0.000$ reflects a high significance.

Table 4.9: KMO and Bartlett's Test

Kaiser-Meyer-Olkin-Measure of Sampling Adequacy.			.601
Bartlett's-Test	auf	Sphe- Approximate Chi-Square	1447.219
ricity		Df	325
		Sig.	.000

(Source: author, 2015, based on SPSS)

Thus, although this is a small sample, the statistical significance tests are fulfilled and therefore the sample size is adequate for principal component analysis. The correlation matrix indicates that the variables are intercorrelated, but not too highly, as recommended by (Field, 2013). Bartlett's test indicates that there is no multicollinearity.

Table 4.10.1: Correlation matrix

		business- es	policy	ensure	compensa- tion	must	timing	account- ing	Institu- tion
Correla- tion	boards	-.114	-.118	-.092	-,021	-,095	-,099	-.114	-,197
	directors	.469	.360	.457	.542	.462	.461	.476	.566
	committees	.307	.324	.299	.398	.303	.300	.351	.434
	governments	.535	.409	.524	.428	.525	.523	.536	.441
	corporation	.391	.319	.399	.591	.392	.395	.402	.299
	shareholding	.220	.347	.220	.237	.217	.218	.215	-.101
	manages	.788	.651	.790	.578	.790	.790	.789	.440
	reports	.850	.617	.845	.635	.847	.846	.808	.582
	codes	.973	.772	.970	.534	.970	.970	.963	.633
	executives	.419	.264	.425	.575	.430	.430	.424	.370
	members	.963	.788	.959	.589	.959	.958	.948	.602

(Source: author, 2015, based on SPSS)

Table 4.10.2: Correlation matrix

	business- es	policy	ensure	compensa- tion	must	timing	account- ing	Institu- tion
meets	-.120	-.120	-.105	.205	-.102	-.100	-.069	.011
recommends	.974	.768	.972	.561	.972	.971	.959	.622
informed	.992	.761	.988	.561	.989	.989	.987	.706
audit	.214	.298	.218	.240	.216	.219	.262	.209
financial	.990	.760	.986	.553	.987	.986	.984	.710
remuneration	.551	.613	.552	.416	.549	.548	.529	.134
responsive- ness	.996	.750	.994	.545	.994	.994	.965	.664
independent	.314	.248	.304	.377	.310	.309	.351	.572
principles	.940	.662	.937	.498	.938	.938	.923	.694
risk	-.118	-.080	-.124	-.056	-.110	-.114	-.113	-.003
requiring	.995	.749	.990	.542	.991	.991	.976	.700
international	.976	.757	.973	.565	.974	.974	.966	.646
control	.088	-.048	.082	.112	.083	.083	.050	.047
practices	.808	.709	.810	.539	.812	.814	.802	.710
proposal	.981	.756	.981	.574	.981	.980	.968	.657
auditors	.680	.506	.685	.422	.682	.683	.675	.442
provide	.040	-.005	.070	.119	.070	.079	.076	.191
performing	.973	.782	.971	.539	.971	.971	.962	.643
review	-.030	-.012	-.032	.407	-.030	-.031	-.038	-.093
relations	.986	.762	.986	.556	.986	.986	.992	.722
lists	.306	.325	.292	.316	.303	.304	.322	.469
issuer	.078	.090	.073	.427	.075	.075	.100	.225
sharing	.156	.304	.159	.312	.154	.158	.151	.106
disclosure	.990	.757	.986	.567	.987	.987	.982	.708

(Source: author, 2015, based on SPSS)

Table 4.10.3: Correlation matrix

	business- es	policy	ensure	compensa- tion	must	timing	account- ing	Institution
effectiveness	.270	.297	.261	.155	.266	.265	.282	.166
rules	.280	.297	.310	.243	.302	.308	.295	.163
making	.534	.566	.543	.409	.540	.544	.535	.300
generality	.760	.656	.761	.577	.759	.762	.758	.570
chairman	.068	.034	.055	-.016	.063	.063	.070	.001
years	.982	.768	.982	.548	.982	.982	.970	.657
businesses	1.000	.755	.998	.538	.998	.998	.978	.701
policy	.755	1.000	.752	.406	.752	.751	.743	.484
ensure	.998	.752	1.000	.532	1.000	1.000	.976	.693
compensa- tion	.538	.406	.532	1.000	.532	.534	.537	.450
must	.998	.752	1.000	.532	1.000	1.000	.976	.697
timing	.998	.751	1.000	.534	1.000	1.000	.977	.699
accounting	.978	.743	.976	.537	.976	.977	1.000	.787
institution	.701	.484	.693	.450	.697	.699	.787	1.000

(Source: author, 2015, based on SPSS)

4.2.2.2 Factor extraction

In summary, the following steps were performed. A total of 49 subject areas were finally retained, after 102 subjects were excluded listwise. Considering the high communalities, principal component analysis was selected at the outset for the extraction of factors with eigenvalues over 1. For better interpretation, varimax rotation was selected to display the factor score coefficient matrix in the scores menu and listwise exclusion was chosen, sorting by size with suppression of absolute values less than 0.50 in the menu. The value of 0.50 was selected because the sample is not very big. The result of the analysis was a rotated component matrix consisting of five components that account for 81.77% of the variance. The breaking point of the scree-plot was at 5 factors.

4.2.2.2.1 *Principal-Component Analysis*

The selection of methods is based on an analysis used according to Iatridis (2012) for content analysis. Content analysis started with the work of Spearman, originally in 1927 (2008), and was developed by Jöreskog and Lawley (1968) under the assumption of multivariate normality. Factor analysis is a frequently used and broadly applied statistical technique in the social sciences (Costello, 2009). Several types of factor analysis extraction methods exist. The following section explains why principal component analysis was selected from the different methods available and presents the results of the application of this factor extraction method.

The researcher used SPSS statistics software from IBM, which has a total of six different kinds of built-in extraction methods, which are the main extraction methods used for Management Research (Krishnaswamy and Sivakumar, 2009).

Principal component analysis is applied, as it implies several advantages with regard to word categories. The application of Principal Component Analysis enables the researcher to decrease the number of uncorrelated variables. The number of observed variables is minimized to a smaller number of principal components which account for the majority of the variance of the observed variables. An additional benefit of this method is that a more usable number of main categories can be developed without incorporating subjectivity in the selection of word categories. Moreover, it is applied for the usecase that variables show high levels of correlation and therefore more meaningful underlying variables are detected through the procedure. Principal component analysis is also regarded as less complicated than factor analysis (Field, 2013).

PCA assumes the absence of outliers in the data. EFA assumes a multivariate normal distribution when using the Maximum Likelihood extraction method.

4.2.2.2.2 *Length-adjusted Word Frequency*

Inductive empirical coding was performed, which was directly derived from the material without preconceptions and is used for preliminary exploratory or qualitative research (Smith, 2000).

A simple frequency analysis based on words was performed in accordance with Guthrie (1985). This is the most commonly chosen unit in content analysis. This word frequency analysis covered the same sample and annual report on Form 20-F as in the first qualitative phase.

Based on this first step, the word frequency of the CGR could be identified. Key words, phrases and themes are identified based on the ex-post analysis of the content. For the basis of measurement, the number of word frequencies was selected, taking into consideration each section of the Annual Report containing CGR. The scope of CGR was de-

defined based on the same criteria as in the first qualitative stage. These frequencies or amounts of disclosure were calculated using the content analysis software NVivo. As for the qualitative research part, the following words were searched for the quantitative part: Corporate, Governance, Board, Directors, Executives and Remuneration. Within this step, the minimum threshold is defined as 100 words, so that CGR is at least regarded as a concept of importance. To improve the reliability and validity, specific filling words were excluded, such as “the”, “a” and “or” (Please see Appendix “Word Exclusion” for a full list).

In a first stage, the count data were converted and a total of 49 different stimuli (observations) X 15 traits (variables) were identified based on a relative word frequency analysis in accordance with Gray’s research approach for social and environmental disclosures (Gray *et al.*, 1995) please see Table 4.10.1, above). The unit of the coding was changed after the first stage of the frequency analysis. Based on prior studies of the unit of analysis, a relative measurement method of frequency was selected. This is also based on a study from Unerman (2000), who analysed methodological differences in academic articles for disclosures in annual reports. Unerman concluded that although no uniform method has evolved, the measurement method of analysing the proportion of disclosures relative to the total amount it occupies is the most widely chosen method.

A relative measurement method considers the relative importance of disclosures and provides more relevant results than an absolute measurement method (Unerman, 2000). Each word frequency was adjusted by the total length of the section related to CGR. The change in the measurement unit had only minimal effect on the results of the communalities.

In the next step, an analysis of the main observations was performed using a correlation matrix. The communality calculates how much of the variance in each of the original variables contains the extracted attrib-

utes and is assumed to be a measurement of reliability (Tryon, 1957). The communalities are high and account for a large part of the variance.

Table 4.11.1: Communalities

	Initial	Extraction
Boards	1.000	.878
Committees	1.000	.860
Governments	1.000	.848
Shareholding	1.000	.945
Reports	1.000	.909
Codes	1.000	.990
Executives	1.000	.766
Members	1.000	.988
Recommends	1.000	.991
Informed	1.000	.993
Audit	1.000	.886
Financial	1.000	.992
Remuneration	1.000	.959
Responsiveness	1.000	.979
Independent	1.000	.923
Principles	1.000	.963
Risk	1.000	.912
Control	1.000	.913
Auditors	1.000	.859
Provide	1.000	.970
Performing	1.000	.990
Review	1.000	.892
Relations	1.000	.993

(Source: author, 2015, based on SPSS)

Table 4.11.2: Communalities

	Initial	Extraction
Lists	1.000	.920
Issuer	1.000	.941
Sharing	1.000	.812
Disclosure	1.000	.984
Rules	1.000	.933
Chairman	1.000	.801
Policy	1.000	.660
Compensation	1.000	.878
Accounting	1.000	.977
Institution	1.000	.759
Directors	1.000	.858

(Source: author, 2015 based on SPSS)

This revealed that several components are highly correlated with each other, and this indicates that further factor extraction and rotation are recommended.

4.2.2.2.3 *Rotation*

Rotation cannot achieve a better degree of fit between the factors and the data; however, it allows possible “simplification” (Krishnaswamy and Sivakumar, 2009, p. 448). Unrotated factors do not enable useful scientific factor constructs (Comrey and Lee, 2013b).

The two main methods of rotation are oblique and orthogonal rotation. Orthogonal (direct oblmin) rotation uses the method in which the reference axes remain at 90 degrees and the assumption is that factors are independent (Ho, 2006). In contrast, oblique rotation assumes non-independent factors and does not maintain the reference axes at 90 degrees (Ho, 2006).

For the factor extraction for this thesis, varimax rotation was selected, as according to the academic literature, it produces the clearest separation of factors (Ho, 2006). After rotation, the communality exceeds 0.6 for all factors, which is regarded as a high value (MacCallum *et al.*, 2001). Table 4.12 summarizes the factor loading for each factor. Each attribute has an eigenvalue >1.0 . The five components explain 78% of the variance. The results in Table 4.12 demonstrate a factorial solution: all factors demonstrate a distinct and continuous high loading on the first factor (all first loadings are >0.5 , average 0.74). There are only a small number of variables which have a significant impact related to the second factor. These factors are used in the further context as the basis for the main categories for the taxonomy.

In the further context of the factor extraction, the Kaiser Guttman rule was applied, which assumes that the number of principal components to be extracted should be similar to the number of principal components consisting of an eigenvalue greater than 1.0 (Brown, 2012). The Kaiser Guttman rule is based on the assumption that with an eigenvalue of less than 1.0, the variance representing a factor is less than the variance of a single indicator.

Table 4.12: Results of principal component analysis

Exploratory Factor Analysis: Component Matrix					
Description	Component				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
	Internal Governance/ Board Organization	Shareholder Protection	Audit and Accounting	External Governance	Compliance
Eigenvalue	11,515	3,536	2,226	1,655	1,472
% Var Expl.	44,29	13,601	8,563	6,364	5,662
% Cum. Var. Expl.	44,29	57,89	66,453	72,818	78,479
boards	,441			,664	-,101
committees	,493	,625	,115	,215	,331
shareholding	,247	-,473	,460	,490	-,285
reports	,864	-,124			
codes	,944	-,261			
executives	,519	,278	-,255	,454	,202
recommends	,941	-,264	-,106		
audit	,349		,781		,311
financial	,961	-,208			
remuneration	,574	-,490	,378	,414	-,220
independent	,517	,722	,332		
principles			-,308	-,185	,893
risk		,706		,328	-,492
control	,136	,241	,339	-,430	,268
review		-,134	,238		,370
chairman	,186	,126	,717	-,128	-,279
policy	,770	-,205			-,153
compensation	,662			,219	,353
accounting	-,141	-,163	,954		
institution	,742	,199	-,223	-,253	
directors	,635	,643	-,136		
lists	,464	,688			-,416
governments	,654	,432			,106
Extraction method: Analysis Principal Components, Rotation Method: Varimax with Kaiser-Normalisation					
a. 5 Components extracted,Extraction covered in 13 iterations					

(Source: author, 2015 based on SPSS)

4.2.2.2.4 Scree plot test

Examination of the scree plot made it obvious that the most representative explanation involved five factors. According to Field (2013, p. 436), a scree plot is “a graph of each eigenvalue (Y-axis) against the factor with which it is associated (X-axis)”. Therefore, in an additional cycle, five factors were identified. Each component represented an eigenvalue larger than 1.0 and the five factors comprised 78 per cent of the variance.

Figure 4.3: Scree plot

(Source: author, 2015, based on SPSS)

Although Cattell's scree test is subjective, it is one of the most widely used strategies to determine the number of components to retain. Several authors have provided evaluations of the scree test in terms of validity and reliability. There are sources within the literature which challenge the validity of the scree test (Hoyle and Duvall, 2004). According to Brown (2012), the test is criticized by many methodologists, as the procedure can result in either overfactoring or underfactoring.

According to Cattell and Jaspers (1967), in six out of eight cases, the results of the scree test are correct. The remaining two cases provided more factors as results than the model actually represented. The scree test reveals its advantages if the major influences in the matrix are considered stronger than the minor influences. This usually implies that a comparably large number of factors are extracted. In the situation when the correlation matrix is dominated by a few factors, prior knowledge exists (Gorsuch, 2013). According to Gorsuch (2013), the scree test can provide the most positive results in confirmatory factor analysis where the hypotheses are based on existing prior knowledge. For the exploration of new areas, scree tests are regarded as ambiguous.

4.3 Integration of qualitative and quantitative results

This step sums up the previous phases of the content analysis, explains the meaning of the findings and analyses the results (Esbensen *et al.*, 2002). It follows the aim to answer the research question using textual evidence (Krippendorff, 2012).

According to Weber, content analysis can be considered “in part an art” and depends upon the judgement of the investigator (Weber, 1990, p. 6). “The language must do the speaking and the language of that speech is the language of theory” (Weber, 1990, p. 62). A variety of different interpretations is usually available, as several combinations of themes might be possible (Weber, 1990).

As a result of the quantitative approach with the use of principal component analysis, five main categories have been identified.

Table 4.13: Decomposition of CGR disclosures

Category	Explained Variance	Key words most frequently independent	Governance Focus
1	44.29 %	Codes, boards, reports, recommends, remuneration, policy, directors and committees.	Internal Governance/ Board Organization
2	13.6 %	Shareholding, independent and risk.	Shareholder Protection
3	8.56 %	Audit, accounting and chairman.	Audit and Accounting
4	6.36 %	Control, institutional and executives.	External Governance
5	5.65 %	Principles, risk and lists.	Compliance

(Source: author, 2015)

The most frequent topics are listed in the first column and the main focus of those topics is summarized in the fourth column. The second column provides the extent of the explained variance.

- *Internal Governance/ Board organization*
- *Shareholder Protection*
- *Audit and Accounting*
- *External Governance*
- *Compliance*

The results of the qualitative study comprised six main reporting categories:

- Financial Disclosures
- Non-Financial Disclosures
- General Meetings
- Timing and Means of Disclosures
- Good Practices for Disclosures
- Good Practices for compliance

with the following 75 reporting elements.

Table 4.14.1: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
0	F1	Financial disclosures relate to the important quality characteristics: the completeness and accuracy of corporate disclosures provided.
0	F2	The basis of the applicable accounting: the code mentions the International Financial Reporting Standard.
0	F3	The board of directors could improve the quality by submitting more disclosures on a voluntary basis, which are relevant for the decisions of investors.
0	F4	Possible risks associated with the preparation of the annual report of the company should be identified.
0	F5	Board of directors have the possibility to submit further information related to the review of fair value methodologies and that these methodologies comply with market standards.
0	F6	The board's ownership for the submission of financial disclosures.
0	F7	A disclosure on how the process is designed to prepare annual statements.
0	F8	Duties of the board in the context of the review and approval of financial statements should be clearly disclosed

(Source: author, 2015)

Table 4.14.2: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
0	F9	Enterprises should make public material related party transactions.
0	F10	Board of directors should submit disclosures as follows in the meaning of best-practice: material participations in related parties, including those where a majority is held; submission of the kind, background of the related-party transaction. Disclosure about the process to authorize such transactions.
0	F11	Members of the board and managers should make public if they have personal interests in material transactions.
0	F12	The decision usefulness of disclosures is determined particularly by completeness and accuracy of the corporate disclosures.
0	F13	The basis of the applicable accounting standard: the code mentions IFRS as a worldwide de-facto standard.
0	F14	The board of directors could facilitate investors' decisions by submitting more disclosures on a voluntary basis.

(Source: author, 2015)

Table 4.14.3: Code reporting elements

	Nr.	Code reporting elements
0	F15	The board should identify risks which are associated with the preparation of the year-end financial report.
1	NFO 16	Disclosure about main business objectives of the enterprise: Commercial or Governance, social, environmental and economic.
2	NFS 17	A list of ownership and shareholdings should be submitted to all parties which need to know.
3	NFS 18	How shareholders or others are able to reach a stake which enables control.
4	NFS 19	Any arrangements which implies that the rights exceed shareholders' equity stake.
5	NFS 20	Any organizational preparations or processes which are existing to avoid infringement of the interests of minority shareholders.
6	NFS 21	Disclosure of the direct control is regarded as most preferable.
7	NFS 22	If there is deviation from the "one share one vote" principle, this should be disclosed or at least made apparent by implementing different share classes.
8	NFC 23	Rules and processes covering corporate control in the capital markets and significant material non-recurring transactions such as business combinations and material sales corporate assets should be disclosed.
9	NFC 24	Corporate strategic plans to obtain a majority and to delist or start an IPO. Additionally a plan for squeeze-out/sell-out rights with an influence on minority shareholders should be made public.

(Source: author, 2015)

Table 4.14.4: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
10	NFC 25	Identification of the involved parties and covering agreements between the merging entities. An explanation of the causes for the control transaction for the shareholders of the different corporations. In case of an acquisition, the financial position of the acquirer and the financial means for the transactions.
11	NFC 26	Measures against takeovers should be reported.
12	NFC 27	Best practice disclosures are assumed for the sale event of a substantial portion of corporate assets; this should be accompanied with a heads-up to all shareholders, including an independent evaluation report.
13	NFG 28	The composition, tasks and terms of reference of the board. "Board" refers to the most senior level of supervisory body, which consists of executives and non-executives, depending on the local legal requirements.
14	NFG 29	Reconciliation between executives and non-executive directors and if non-executives are related to the company.
15	NFG 30	Composition of the board.
16	NFG 31	In case of independence issues of non-executives, explain why these do not have a negative impact on the ability to pursue an independent decision process.
17	NFG 32	The board should make public the reasons for the final assessment of independence of the non-executive or supervisory board.
18	NFG 33	Related party transactions or affiliations of directors with the parent or its subsidiary.
19	NFG 34	The board's terms of reference must be disclosed.

(Source: author, 2015)

Table 4.14.5: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
20	NFM 35	Disclosure of the education, qualifications and experience of the members of the boards.
21	NFM 36	The types and responsibility of memberships held by an individual director.
22	NFM 37	The actual board memberships and if a rule exists for limitation and restriction of such board positions.
23	NFM 38	Disclosure of types and responsibility of outside memberships and management positions.
24	NFM 39	For key executives, information on outside board and management positions.
25	NFM 40	A description of the training and qualification that directors follow during the reporting period.
26	NFM 41	Possibilities that the members receive professional advice.
27	NFM 42	Information about whether these possibilities which were granted were also utilized by the members.
28	NFM 43	Disclosure about the education and practical experience of the members of the board.

(Source: author, 2015)

Table 4.14.6: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
29	NFM 44	The frequency and responsibility of membership of boards' directors.
30	NFM 45	The actual board positions possessed and if there is a rule on the restriction or limitation of these positions.
31	NFM 46	Outside membership positions.
32	NFM 47	For key executives, information on outside board and management positions.
33	NFI 48	Other stakeholders in a business should have equal rights.
34	NFI 49	Ensuring that minority stakeholders' rights are not violated, including the role of employees in CG.
35	NFI 50	Independent of the legal requirements that it is assumed best practice to undergo additional commitments.
36	NFI 51	The board's rule with regard to sustainability and corporate social responsibility.
37	NFR 52	The board should provide adequate corporate disclosures of the topics: risk management, risk mitigation and risk-related themes.
38	NFR 53	The board should explain corporate rules and procedures for risk identification and management.

(Source: author, 2015)

Table 4.14.7: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
39	NFR 54	The board should provide adequate disclosures on its internal control system, including the identification of risks.
40	NFI 55	The board should disclose how it is convinced that it has achieved its independence and integrity.
41	NFI 56	Disclosures should include the process for the selection of the external auditor, the rules for the change of the internal defined auditors, the governance of the contract and interaction with the auditor. The proportion of non-audit to audit-fees should also be disclosed.
42	NFI 57	The audit committee should define a rule with regard to the purchase of services not related to audit from the external auditor. This rule should be submitted externally together with a section on the external auditor's independence.
43	NFI 58	The process for the selection and decision on the external auditors.
44	NFI 59	Disclosure about independence of external auditors.
45	NFIA 60	Scope of work and responsibilities and the most senior group to which the internal audit function reports.

(Source: author, 2015)

Table 4.14.7: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
46	NFIA 61	Enterprises with lack of audit functions within the company should disclose why.
47	GM 62	Process with regard to the process: <ul style="list-style-type: none"> • annual general meetings • extraordinary general meetings
48	GM 63	Publication of the agenda and proposed decisions should be executed on time and provided in the national language of the enterprise or alternatively in a foreign language, if this is used frequently by the company.
49	GM 65	The voting outcome and agenda decisions of the annual general meeting or other meetings should be made public on time without delay.
50	GM 66	The corporation should announce, before the annual general meeting takes place, the procedure to raise agenda topics and how to speak for shareholders, the voting process and all other information for shareholders to enable efficient shareholder participation.
51	GM 67	All material deviations and issues with regard to code compliance should be submitted on time. Disclosure should be focused on the most significant issues and should consider “substance over form” criteria.
52	GM 68	It is preferable, although not mandatory, to aggregate all Disclosures on CG in one CG-Report.

(Source: author, 2015)

Table 4.14.8: Code reporting elements

Ob- ser- vation	Nr.	Code reporting elements
53	GM 69	As an alternative for aggregated reporting, appropriate referencing should be provided.
54	GM 70	The annual reports, which are a traditional channel of communication with investors, should be extended through other channels of communication.
55	GM 71	It is assumed best practice that a “comply or explain” approach is followed with local CG requirements. If this is not the case, the existing company should pursue the compliance with leading internal corporate governance codes.

(Source: author, 2015)

In the next step, the results are compared to the results of the qualitative phase.

Table 4.15.1: Development of main categories

Qualitative Research (Part I) (Source: United Nations, 2006)		Quantitative Research (Part II) (Source: author, 2015)	
Main categories	Subcategories	Main categories	Subcategories
Financial Disclosures	<i>Board of directors is to ensure that disclosures with a high quality and level of detail are submitted.</i>	Out of scope Application of existing Taxonomy for Financial Disclosures <ul style="list-style-type: none"> • IASB Taxonomy • US GAAP Taxonomy 	
Non-Financial Disclosures	<i>Company aims Responsibility and Laws on shareholders</i> <i>Changes through material transactions consisting of material assets</i> <i>Governance structures and policies</i> <i>Board persons and key executives</i> <i>Significant concerns related to stakeholders, corporate social stewardship, including environment</i> <i>Significant risk factors to be forecasted</i> <i>No affiliation with external auditor</i> <i>Internal audit function</i>	Internal Gov- ernance/ Board organization External Gov- ernance Audit and Ac- counting Shareholder Protection	<ul style="list-style-type: none"> • Codes • Boards • Reports • Recom-mends • Remunera-tion • Policy • Directors and commit-tees. <ul style="list-style-type: none"> • Control • Institutional • Executives <ul style="list-style-type: none"> • Audit • Accounting • Chairman

(Source: United Nations, 2003, adapted by author, 2015)

Table 4.15.2: Development of main categories

	Main categories	Subcategories	Main categories	Subcategories
	General Meetings	<i>Disclosure should be performed with regard to all tasks involved with the annual general meeting and others.</i> <i>All corporate disclosures which are required for an effective participation of shareholders.</i>	<i>Shareholder protection</i>	<ul style="list-style-type: none"> • Shareholding • Independent • Risk
	Timing and Means of Disclosures	<i>All significant issues with regard to CG of the company should be submitted on time without delay</i>	<u>Out of scope</u> <i>CG report embedded into the annual report.</i>	
	Good Practices for Compliance	<i>Comply or explain mechanisms in many countries enable investors more transparency about the company.</i>	<i>Compliance</i>	<ul style="list-style-type: none"> • Principles • Lists

(Source: United Nations, 2003, adapted by author, 2015)

This section outlines the results of the integration of the first part, the qualitative research, with the second, quantitative phase.

In a first step, illustrated in the above Table 4.15.2, “Development of main categories”, the main categories and subcategories of part I are mapped to the second part based on similarity of thematic content.

Taxonomies imply formalized knowledge and enable aggregations between concepts/categories in a given domain by rendering the contents easily accessible to the users (Cataldi *et al.*, 2012). One of the main advantages of the XBRL standard is the interoperability between different XBRL taxonomies. As the intended CGR taxonomy can also use existing taxonomies and reporting elements, there is no need to reinvent a reporting element if it complies with the requirements and quality criteria.

The creation of an XBRL-enabled taxonomy must also take into account several additional technical aspects. The objective of the XBRL language is to structure financial and non-financial information semantically and provide a hierarchy of the data elements in a reporting taxonomy and to model this information in a technical schema. The objective of the technical schema is not to satisfy standards, but to be as relevant as possible in relation to the contents so as to ease, as much as possible, their reading or usage (Piechocki, 2007). The elements that need to be considered, according to Piechocki (2007) and Kurt and David (2003), are as follows:

- It must, as much as possible, take as a starting point the “best practices” which progressively emerge from the development and use of new taxonomies.
- Modularity of the taxonomy.
- Its legibility, the integration in one or several existing taxonomies
- Its readiness for extensions and the use of dimensions to analyse the data.

To identify a common taxonomy, Latent Semantic Analysis (LSA) was used, consisting of a quantitative analysis measuring the correlation between several documents and the topics. LSA was first applied by Deerwester *et al.* (1990) to identify an unknown structure (i.e., latent semantics) in the corpus of a text. For this thesis, the cosine-similarity

measure is applied, which according to Dumais *et al.* (1988) is the most commonly used correlation measure in LSA. The advantage of LSA is that synonyms are also considered. ISAR governance code and the results of the second part are converted into a bundle of vectors. A normalisation is executed and a calculation is carried out to measure the similarity between each of the remaining five main categories.

Considering the cosine similarity calculation, the main topics of the second part were mapped to the ISAR governance code of the first part. The results of the LSA cosine similarity analysis are found in Appendix B.2.

According to Thietart *et al.* (2001), hierarchical grouping is recommended at the beginning of research, while non-hierarchical clustering can be based on the finding of the hierarchical method and can be used for further refinement of the classifications. The choice of the method depends upon the prior knowledge available. One important criterion for differentiation is how the method handles outliers. The non-hierarchical cluster method is seen as less sensitive to the existence of outliers in comparison to the hierarchical method (Thietart, 2001). The results of the matrix code correlation with main categories of the empirical study undergo a hierarchical cluster analysis to make up homogeneous groups of objects (classes) on the basis of a matrix describing the similarity or dissimilarity between the objects.

The dendrogram is one result, which provides information on how the grouping was done. A critical question is the number of classes, which can also be derived from the dendrogram.

The similarity coefficient applied is the Spearman correlation coefficient. Cluster analysis was applied with the following parameters:

Table 4.16: Clustering

Clustering Parameters		Explanation
Agglomeration method	Complete link-age	Agglomeration using complete link-age tends to make the data space larger and to produce compact clusters, as the “Furthest-Neighbour-Method” is used (Eckey <i>et al.</i> , 2002, p. 235).
Proximity type	Similarities	The proximity between two objects is the “nearness” (Chen <i>et al.</i> , 2007, p. 306).
Similarity coefficient	Spearman correlation coefficient	Spearman correlation coefficient can be used to determine whether variables are related to each other (Vaughan <i>et al.</i> , 2001)
Centre	No	Data are not centred before starting the calculations.

(Source: Jain *et al.*, 1999)

The process starts by calculating the dissimilarity between the N objects (Everitt *et al.*, 2011). Then two objects which, when clustered together, minimize a given agglomeration criterion are clustered together, thus creating a class comprising these two objects. Then the dissimilarity between this class and the N-2 other objects is calculated using the agglomeration criterion. The two objects or classes of objects whose clustering together minimizes the agglomeration criterion are then clustered together. This process continues until all the objects have been clustered. These successive clustering operations produce a binary cluster-

ing tree (dendrogram), whose root is the class that contains all the observations. This dendrogram represents a hierarchy of partitions. It is then possible to choose a partition by truncating the tree at a given level, the level depending upon either user-defined constraints (the user knows how many classes are to be obtained) or more objective criteria. As a result, five different clusters have been identified with the following parameters:

Table 4.17: Results of integration of qualitative with quantitative research

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Obs1	Obs5	Obs8	Obs12	Obs32
Obs2	Obs7	Obs30	Obs13	Obs33
Obs3	Obs11	Obs34	Obs14	
Obs4	Obs29	Obs36	Obs15	
Obs6	Obs31	Obs42	Obs16	
Obs9	Obs35	Obs45	Obs17	
Obs10	Obs37	Obs54	Obs18	
Obs44	Obs38		Obs19	
	Obs39		Obs20	
	Obs40		Obs21	
	Obs41		Obs22	
	Obs43		Obs23	
	Obs46		Obs24	
	Obs48		Obs25	
	Obs49		Obs26	
	Obs51		Obs27	
			Obs28	
			Obs47	
			Obs50	
			Obs52	
			Obs53	

(Source: author, 2015, based on XLSTAT)

4.3.1 Taxonomy

Table 4.18.1.1: Taxonomy of CGR – Audit and Accounting

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Audit and Accounting	The objectives of the enterprise should be disclosed: Commercial or Governance, Social, environmental and economic.	ISAR	Text	M
Non-Financial	Audit and Accounting	Beneficiary ownership structure relations should be submitted in full.	ISAR	Text	M
Non-Financial	Audit and Accounting	Ability of shareholders or other members of the organization to reach a majority stake.	ISAR	Text	M
Non-Financial	Audit and Accounting	Any arrangements which implies that the rights exceed shareholders' equity stake.	ISAR	Text	M
Non-Financial	Audit and Accounting	Disclosure of the direct control is regarded as most preferable.	ISAR	Text	M
Non-Financial	Audit and Accounting	Corporate strategic plans to acquire control and to delist or take public and specific plans which have an impact on minority shareholders, such as pushing the minority stakeholder out of the enterprise.	ISAR	Text	

(Source: author, 2015)

Table 4.18.1.2: Taxonomy of CGR – Audit and Accounting

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Audit and Accounting	Identification of the involved parties and covering agreements between the merging entities and a description of the results of the transaction for the stakeholders of the different corporations; disclosure of financial position of the pursuing acquisitions.	ISAR	Text	M
Non-Financial	Audit and Accounting	Disclosure about Independence of external auditor.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.2.1: Taxonomy of CGR – Shareholder Protection

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Shareholder protection	Any organizational preparations or processes relevant for the defence of shareholder rights.	ISAR	Text	M
Non-Financial	Shareholder protection	If the “one share one vote” principle is deviated from, this should be disclosed or at least made apparent by implementing different share classes.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.2.2: Taxonomy of CGR – Shareholder Protection

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Shareholder protection	Measures against takeover should be reported.	ISAR	Text	M
Non-Financial	Shareholder protection	The types and responsibilities of memberships held by an individual director.	ISAR	Text	M
Non-Financial	Shareholder protection	Types and responsibilities of outside memberships each individual director holds.	ISAR	Text	M
Non-Financial	Shareholder protection	Independent of legal requirements, it is assumed best practice to provide additional disclosures for a broader group of interests.	ISAR	Text	M
Non-Financial	Shareholder protection	The board should provide adequate disclosures on its internal control system, including the identification of risks.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.2.3: Taxonomy of CGR – Shareholder Protection

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Shareholder protection	It should be made public by the board that it is convinced of the external auditors' independence and there is no violation of integrity and competence.	ISAR	Text	M
Non-Financial	Shareholder protection	Disclosures should include the process for the selection of the external auditor. Additionally, the policy for the change of the internal defined auditors, the governance of the contract and interaction with the auditor needs to be disclosed. The proportion of non-audit fees to audit-fees and the extent of non-audit fees for external auditors should also be disclosed.	ISAR	Text	M
Non-Financial	Shareholder protection	The process for the selection of and interaction with external auditors.	ISAR	Text	M
Non-Financial	Shareholder protection	Enterprises with no internal audit function should disclose why.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.2.4: Taxonomy of CGR – Shareholder Protection

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Shareholder protection	Submission of the agenda and proposed decisions should be made public without delay and provided in the national language of the enterprise as well as, if appropriate, an internationally used business language.	ISAR	Text	M
Non-Financial	Shareholder protection	The decisions made in the general meeting should be submitted to the shareholders without delay. All material concerns by the enterprise with regard to CG should be disclosed on time without delay.	ISAR	Text	M
Non-Financial	Shareholder protection	The disclosure should be fact based, exact and detailed and based on the “substance over form” principle.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.3.1: Taxonomy of CGR – External Governance

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	External governance	Rules and processes covering corporate control in the capital markets and significant material non-recurring transactions such as business combinations and material sales corporate assets should be disclosed.	ISAR	Text	M
Non-Financial	External governance	The actual board memberships and a disclosure of whether the number of board memberships is limited for the individual director.	ISAR	Text	M
Non-Financial	External governance	The rights of stakeholders protected by law and the tasks of employees in CG are respected.	ISAR	Text	M
Non-Financial	External governance	The board's rule on environmental and social responsibility.	ISAR	Text	M
Non-Financial	External governance	Audit committee should participate in the definition of a rule for purchasing non-audit services. A disclosure should be executed together with an explanation of how to comply with rules on independence.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.3.2 Taxonomy of CGR – External Governance

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	External governance	Rules and processes covering corporate control in the capital markets and significant material non-recurring transactions such as business combinations and material sales corporate assets should be disclosed.	ISAR	Text	M
Non-Financial	External governance	The annual reports, which are a traditional channel of communication with investors, should be extended through other channels of communication.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.4.1: Taxonomy of CGR – Internal Governance

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Internal Governance	Best practice disclosures are assumed for the sale event of a substantial portion of corporate assets; this should be accompanied with a heads-up to all shareholders including an independent evaluation report.	ISAR	Text	M
Non-Financial	Internal Governance	The terms of reference of the board. Board refers to the most senior governing and monitoring body, on which executive and non-executive or supervisory board members are located.	ISAR	Text	M
Non-Financial	Internal Governance	Related party transactions or affiliations of non-executives with the company. Reconciliation between executive and non-executive directors.	ISAR	Text	M
Non-Financial	Internal Governance	Composition of the board	ISAR	Text	M
Non-Financial	Internal Governance	Reconciliation between executives and non-executive directors and if non-executives are related to the company.	ISAR	Text	M
Non-Financial	Internal Governance	In case of independence issues of non-executives, why they do not impinge on the governance role of the non-executive directors as a group.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.4.2: Taxonomy of CGR – Internal Governance

Non-Financial	Internal Governance	Reasons for the assessment of independence of a director.	ISAR	Text	M
Non-Financial	Internal Governance	Related party transactions or affiliations of directors with the parent or its subsidiary.	ISAR	Text	M
Non-Financial	Internal Governance	The board's setting and terms of reference must be fully disclosed.	ISAR	Text	M
Non-Financial	Internal Governance	Disclosure of duties and qualifications of the members of the boards and key executives.	ISAR	Text	M
Non-Financial	Internal Governance	The types and responsibilities of memberships held by an individual director.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.4.3: Taxonomy of CGR – Internal Governance

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Internal Governance	The actual board memberships and a disclosure of whether the number of board memberships is limited.	ISAR	Text	M
Non-Financial	Internal Governance	Disclosure of terms of reference of outside board and management positions.	ISAR	Text	M
Non-Financial	Internal Governance	For key executives, information on outside board and management positions.	ISAR	Text	M
Non-Financial	Internal Governance	The types of qualification and training that directors receive during the reporting period.	ISAR	Text	M
Non-Financial	Internal Governance	Possibilities that the members receive professional advice.	ISAR	Text	M
Non-Financial	Internal Governance	Information on whether these possibilities which were granted were also utilized by the members.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.4.4: Taxonomy of CGR – Internal Governance

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Internal Governance	Duties and qualifications of the members of the boards and key executives should be disclosed.	ISAR	Text	M
Non-Financial	Internal Governance	Before the annual general meeting takes place, the corporation should announce the procedure to raise agenda topics and how to speak for shareholders, the voting process and all other information for shareholders to enable efficient shareholder participation	ISAR	Text	M
Non-Financial	Internal Governance	Before the annual general meeting takes place, the corporation should announce the procedure to raise agenda topics and how to speak for shareholders, the voting process and all other information for shareholders to enable efficient shareholder participation.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.4.5: Taxonomy of CGR – Internal Governance

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Internal Governance	The code does not require one approach to follow, therefore either the whole information can be submitted as part of one comprehensive report or profile or a reference is possible.	ISAR	Text	M

(Source: author, 2015)

Table 4.18.5: Taxonomy of CGR – Shareholder Protection

Main Category	Sub-category	Reporting element	Reference	Disclosure Format	Classification
Non-Financial	Compliance	For key executives, information on outside board and management positions.	ISAR	Text	M
Non-Financial	Compliance	Defending the legal principles of other shareholders in a business.	ISAR	Text	M

(Source: author, 2015)

4.3.2 Validation of XBRL Taxonomy

An XBRL taxonomy is only valid if it has satisfied a range of tests: automatic tests, handbooks, tests of contents and tests by users. The automatic tests are carried out by software and validate the consistency of the taxonomy with XBRL specifications. Are the contents easily identifiable? Is the classification effective? Is the wording clear, non-ambiguous and understandable as stand-alone information? Each exception must be documented. For this thesis, the tests were performed using the XWAND software from Fujitsu and results are documented in “Appendix F: Validity of XBRL Taxonomy”.

5 Discussion of the findings

This chapter reveals the conclusions drawn from the results of the empirical study. The research question is “Can XBRL be applied to CGR by developing a taxonomy for financial institutions as foreign private issuers?” The literature review showed that several theories on CG and Corporate Reporting exist. Based on this finding, a hypothesis was developed. Despite the heterogeneous theoretical findings and the increasing complexity in the regulatory landscape, it was assumed that due to external factors, including globalization and increasing competition, the CGR of large financial institutions converges and has common reporting elements from an empirical perspective. The hypothesis was confirmed. In a next step, a further exploratory study was performed to develop the main and supplementary reporting elements of the taxonomy. In the following, the findings are aggregated and explained. The linkage between the theoretical findings of the literature review and the empirical results is provided.

5.1 Corporate Governance Reporting taxonomy - summarized findings

In the following section, the results of the main category development are interpreted under consideration of the CG theories and the findings of the academic literature review in section 2, the Literature Review.

The results regarding the number of reporting elements for the CGR Taxonomy are shown in Figure 4.4. Overall, the CGR of the selected sample of financial institutions shows high similarities. The most frequently reported category is about Internal CG and Board organization. Twenty-five percent of the world’s market capitalization of the largest financial institutions and seventy-five percent of the NYSE listed foreign private issuers operating as financial institutions are represented in the

sample. Based on these figures, it can be concluded that a suitable sample has been chosen for this study.

A summary of the key findings can be provided as follows:

1. Disclosures on CG can be standardised for financial institutions, despite the increasing complexity and differences due to national CG regulations. Comparable with Cicon *et al.*'s (2012) analysis of national CG codes, the researcher concludes that any convergence within CG is more likely to occur on the basis of "best practices" than convergence to a specific reporting model such as the Anglo-Saxon or the Continental European model. The empirical results are not a great surprise, as they give proof and confirm theoretical expectations. According to Braendle and Noll (2006), the pressure of change due to globalization is stronger than the tendencies toward persistence, which lead to convergence. However, due to the process of benchmarking and peer analysis, corporations continually search to identify best-in-class concepts, which are most efficient and provide a competitive advantage. This market-driven impact can be traced back to studies from La Porta *et al.* (2000).
2. Based on the results of the present study, it is possible to conclude that only very few multinational financial institutions deviate with regard to CGR and the compliance with international CG principles is very high even if the financial institutions do not have an Anglo-Saxon CG background. Previous empirical studies come to different conclusions with regard to the analysis of industrial and commercial companies, as according to these authors, empirical evidence supports the contention that corporations with Anglo-Saxon backgrounds provide more disclosures on CG matters than non-Anglo-Saxon groups.

Figure 4.4: Taxonomy Matrix

		XBRL Specification/ Meta Data			
		Reporting Elements Σ	Disclosure Format	Reference	Classification
Financial	IASB/ U.S. GAAP XBRL Taxonomy	4000	Text- Figure- Instant/ Duration	IFRS/ US GAAP	Mandatory Voluntary
Non- Financial	Internal Governance/ Board Organization	20	Text	ISAR	Mandatory Voluntary
	External Governance	7	Text	ISAR	Mandatory
	Audit/ Accounting	8	Text	ISAR	Mandatory
	Compliance	2	Text	ISAR	Mandatory
	Shareholder Protection	16	Text	ISAR	Mandatory

(Source: author, 2015)

3. This study represents a practical use case to demonstrate which methods can be used for taxonomy design engineering. Empirical common practice elements as well as codified requirements can be developed in an integrated approach. In contrast, the IASB has followed a two-step approach: it first set up the legal requirements in the IASB taxonomy and in a second consecutive step developed the common practice elements based on empirical data (Bonsón *et al.*, 2009). The study can therefore provide insights for taxonomy developers and taxonomy engineering. With regard to the initial introduction of an European XBRL taxonomy (Debreceeny *et al.*, 2007), similar discussions were held as to whether to follow the IASB approach or the approach followed in this thesis (Kesselmeyer, 2010). In previous studies, XBRL taxonomy engineering was very much process- and software-

driven and models were taken from software engineering and ontology engineering (Piechocki and Felden, 2007); however, previous research lacked the focus on content-related taxonomy development. According to Piechocki and Felden (2007, p. 896), “accounting knowledge from domain experts has to be implemented in the knowledge base during the taxonomy design phase”. Even accounting experts do not have the readily available knowledge for a taxonomy. A frequently experienced issue is how the knowledge of accounting experts is implemented in a taxonomy. This thesis demonstrates that quantitative and qualitative methods can be used to help to develop a taxonomy. However, the XBRL technical mechanism can only be as effective as the information that it is being used to report.

4. This study also shows that the amount of disclosures on CG matters is increasing year by year, as the information demand from regulators and investors is increasing. This result is in line with previous empirical research (Markarian *et al.*, 2007), which conclude that disclosure practices have been evolving and converging towards more disclosures regarding governance matters. The difference is that previous studies’ focus was on the world’s largest firms, while this study’s focus is on the world’s largest Financial Institutions. Therefore, based on the results, the conclusion can be drawn that this study provides empirical evidence that governance-related disclosure practices for cross-border Financial Institutions also converge and the disclosure amount increases.
5. The most frequently reported topics of CG are internal governance and board organization. These are the most frequently used categories and represent a cornerstone of disclosures on CG matters. This study finding is comparable with the research on the analysis of national CG codes. Heugens (2007) identifies a plurality of CGR factors, while the organizational design of the

board is identified by Heugens as the factor with the highest factor loading. The topics analysis on national CG codes performed by Cicon *et al.* (2012) identifies internal governance and board organization as the most frequently applied code component, which also supports the findings of this thesis.

6. Existing XBRL Taxonomies (IASB/ US GAAP/ IS-FESG/ GRI) do not integrate other taxonomies, although interoperability is one of the major advantages of the XBRL standard. As there are well-advanced taxonomies existing for financial disclosures, such as the IASB and the US GAAP taxonomy (Roohani *et al.*, 2009), it became obvious that a new development for the CGR taxonomy for financial disclosures was not required. Other taxonomies, such as the IS-FESG and the GRI taxonomy, have developed their own reporting elements with regard to financial reporting with a “full coverage” approach, which, according to the findings of this thesis, is not required.
7. The study has also shown that companies follow different levels of integration when it comes to the disclosure of CG and other management report disclosures. SOX companies use cross-referencing or an integrated approach, while others prepare completely separate CGR disclosures from the annual financial statements and management report.
8. The study has also demonstrated that the taxonomy within XBRL is an important element, while in the previous studies about XBRL, the taxonomy does not play an important role (Bonson *et al.*, 2008; Enachi, 2013) and the focus is on the technical components of XBRL and the associated advantages.
9. The study also makes visible that narrative disclosures can be included in an XBRL taxonomy and this approach could be ex-

tended to other sections of the year-end financial report: the MD&A, CSR and Internal Control over Financial Reporting.

5.2 Corporate Governance Reporting according to each main category

In the following sections, the main categories are analysed separately.

5.2.1 Main Category 1: Internal Governance/ Board organization

Internal Governance and board organizations are the most frequently disclosed topics for disclosures on CG within the selected sample. Considering the findings of the principal component analysis, the themes with the highest implication, as calculated by percentage of variance explained, relate to internal governance and board organization, which includes more than 44% of the combined variation in CGR. The percentage of variation explained decrease very much for the other topics, which underpins the importance of this category relative to other CG matters.

These are the most frequently used categories and represent a cornerstone of disclosures on CG matters (Markarian *et al.*, 2007). The reporting about internal governance and how the board is organized plays such an important role because this is one of the key governance mechanisms that only works if it is used to create a strong internal control environment for decision-makers (Heugens, 2007). These study findings are comparable with the results of studies focusing on the analysis of national CG codes (Cicon *et al.*, 2012). Heugens (2007) identifies a plurality of CGR, and also identifies the organizational design of the board as the factor with the highest factor loading. The topics analysis on national CG codes performed by Cicon *et al.* (2012) identifies internal governance and board organization as the most fre-

quently applied code component, which also supports the findings of this thesis.

According to the OECD CG Code and the ISAR Good CG disclosure requirements, companies should disclose how their internal governance mechanisms are implemented to ensure that good CG is maintained. The company should set up a board structure which is effective by providing adequate oversight and control of the management. Internal Governance only relates to internal boards and committees, which can also consist of shareholders or stakeholders. Although different internal board structures and models exist (Hopt and Leyens, 2004), which can be prescribed by law and regulation or developed by the corporation, such as the “one-tier board” in the US and the “two-tier board” in Germany (Jungmann, 2006, p. 426), CGR is about the disclosure of the highest board organization excluding the specific model which is followed by the corporation. Internal governance mechanisms rely very much on credible information. Credible information is defined within the accounting literature as accurate, complete and useful information, which provides a realistic impression of the corporation’s net assets (Needles and Powers, 2010).

This category, “Internal Governance/Board organization”, which achieved very high compliance scores as part of the first qualitative research study, underpins that disclosures on CG can be standardised for Financial Institutions despite the increasing complexity and differences due to national CG regulations. Comparable with Cicon and colleagues’ analysis of national CG codes (Cicon *et al.*, 2012), it is concluded here that any convergence between CG is more likely to occur on the basis of “best practices” than convergence to a specific reporting model such as the Anglo-Saxon or the Continental European model. The empirical results correspond to theoretical expectations. According to Braendle and Noll (2006), the pressure of change due to globalization is stronger than the tendencies of persistence, which lead to convergence. Howev-

er, due to the process of benchmarking and peer analysis, corporations continually seek to identify best-in-class concepts, which are most efficient and provide a competitive advantage. This market-driven impact can be traced back to studies from La Porta *et al.* (2000).

The following are the main reporting elements that have been identified as part of the empirical study:

- Terms of reference of the board. “Board” refers to the most senior governing and monitoring body on which executive and non-executive or supervisory board members are located.
- Related party transactions or affiliations of non-executives with the company. Reconciliation between executive and non-executive directors in the composition of the board.
- Reasons for the assessment of independence of a director.
- Related party transactions or affiliations of directors with the parent or its subsidiary.
- Disclosure of duties and qualifications of the members of the boards and key executives.
- The representation, type and obligation of board memberships controlled by a single director.

As revealed by the literature review, effective audit committee and sound financial reporting principles are often quoted as helping to overcome agency CG problems (Stiglbauer, 2010b). Additional remedies for the principal-agent conflict are: compensation of management strictly relates to performance measurements and higher participation of management to the company. Moreover, a larger institutional ownership, more powerful shareholders, an effective audit committee and sound financial reporting principles are often quoted as helping to overcome agency CG problems (Love, 2010).

5.2.2 Main Category 2: Shareholder Protection

Much has been written in the academic CG literature about shareholder protection (La Porta *et al.*, 2000; Shleifer and Wolfenzon, 2002). A common element is how well the shareholders' rights are protected from exploitation by the management, deviations in laws and how effective enforcement in different countries is reached, so that investors can understand what risks are associated with investments in the company.

5.2.3 Main Category 3: Audit and Accounting

Audit and accounting relates to several disclosures about the audit committee, the external auditor and related policies. The independence of the external auditor is one of the main topics and the corporation provides disclosures on organizational settings to ensure that external auditors are independent (Archambeault *et al.*, 2008).

The main risks associated with financial statements are that they do not present a true and fair view (Robins, 2006). As a result of these risks, investor confidence may be affected and reputational damage may be caused. Further effects are legacy costs including banking regulatory interventions. A lack of fair presentation is caused by the omission or misstatement of material disclosures (Hewitt, 1977).

An accounting organization which is in compliance with set rules has to achieve quality standards on accounting: all transactions are recorded completely (Completeness) and accurately (Accuracy), transactions are valued at adequate amounts (Valuation), rights and obligations are appropriately recorded, presentation of financial reporting is appropriate and unauthorized acquisitions, use or disposition of assets is prevented or detected in a timely manner (Safeguarding).

5.2.4 Main Category 4: External Governance

The fourth largest main category in terms of frequency in this thesis empirical study, which also represents a main category according to the first qualitative analysis of compliance testing with an international CG code, is the external governance. The power of shareholders to exercise their influence on the management is an incremental part of Anglo-American CG (Cuervo, 2002), which plays an important role as part of the market control. However, market control can only be exercised if a high level of transparency is presented through accurate, complete and correctly valued disclosures for which the corporation can be made accountable (Hart, 1995). According to Turnbull (1997), the directors' knowledge needs to be adequate to be competent enough for the internal corporate control and the exercise of power to be able to control management.

The main reporting elements are:

- Frequency of board positions and the disclosure of rules on the limitation and restriction of such memberships.
- The board's policy and performance related to environmental and social responsibility and the influence on sustainable performance.
- The audit committee should support the definition of a rule for acquiring non-audit services; a disclosure on this rule should be effected together with an explanation of how independence is ensured.
- Rules and processes covering corporate control in the capital markets and significant material non-recurring transactions such as business combinations and material sales corporate assets should be disclosed.
- Identification of the parties involved and covering agreements between the merging entities.

External governance comprises the market of corporate control (Fama, 1980) from outside of the corporation and the institutional investor plays an important role therein by monitoring and influencing (Gillan and Starks, 2000). When internal control efforts have failed, external governance from market mechanisms should compensate. CGR should therefore provide credible information on external mechanisms with the focus on the shareholder. It comprises disclosures about beneficiary ownership structures and shareholders' interest, the exercise of control of shareholders or other stakeholders to obtain control, direct control and corporate strategic plans to acquire control.

5.2.5 Main Category 5: Compliance

Several governance protection rules were developed with the aim to decrease agency issues, capturing all reporting elements that disclose how the corporation complies with laws and regulations and sets its own principles on CG (MacNeil and Li, 2006). Compliance comprises:

- The independent evaluation report.
- The proportion between executives and non-executive directors.
- The direct or indirect relationship between the firm and the non-executives.
- In case of independence issues of non-executives, they should not insist on their control role as a group.
- The criteria for the assessment that a non-executive (or supervisory) director is independent should be explained by the board.

6 Conclusions and direction for future research

6.1 Main Findings

In light of the worst financial crisis for a decade, this research has suggested developing a CG taxonomy that can be put into practice for CGR as well as for XBRL filings. CGR has become very complex for multinational companies, as it involves statutory compliance with multiple rules and laws, coping with heterogeneous “Systems of CG” (Tylecote and Visintin, 2007, Weimer, 1999) and additionally the compilation of codes (Cadbury, 1993) and industry-specific standards (Mach *et al.*, 2006; Bebachuk and Spamann, 2010,). XBRL (eXtensible Business Reporting Language) has developed to a recognized standard for interactive corporate reporting (Chen, 2009, Matherne and Coffin, 2001; Debreceeny *et al.*, 2010; Felden, 2011; Alles and Debreceeny, 2012). The application of XBRL to the non-financial reporting of CG can also be attributed to enhanced transparency.

The results of this empirical study make obvious the following interesting findings:

1. Disclosures on CG can be standardised for financial institutions, despite the increasing complexity and differences due to national CG regulations. However, due to the process of benchmarking and peer analysis, corporations continually search to identify best-in-class concepts, which are most efficient and provide a competitive advantage. This market-driven impact can be traced back to studies from (La Porta *et al.*, 2000).
2. Based on the results of the study, it is possible to conclude that only very few multinational financial institutions deviate regarding CGR. Moreover, companies, even if they do not have an Anglo-Saxon CG background, comply with international CG principles.

3. This study represents a practical use case to verify which methods can be used for the taxonomy design engineering. Empirical common practice elements as well as codified requirements can be developed in an integrated approach. This thesis demonstrates that quantitative and qualitative methods can be used to help to develop a taxonomy.
4. Considering the findings of the thesis, it becomes apparent that the amount of disclosure on CG matters is increasing year by year, as the information demand from regulators and investors is increasing.
5. The study results provide empirical evidence that governance-related disclosure practice for cross-border Financial Institutions is also converging and the amount of disclosure is increasing.
6. The most frequently reported topics of CG are internal governance and board organization. These are the categories that are used the most frequently and represent a cornerstone of disclosures on CG matters.
7. The study has also demonstrated that the taxonomy within XBRL is an important element, while in the previous studies of XBRL, the taxonomy has not played an important role (Bonson *et al.*, 2008; Enachi, 2013) and the focus has been on the technical components of XBRL and the associated advantages.

6.2 Contributions of this research

This thesis contributes to

- a) The empirical research on CGR and taxonomy application;
- b) The theory about CG and Corporate Reporting; it extends existing literature about the impact of XBRL on disclosures and taxonomy engineering;
- c) The practice on XBRL implementation and on CG disclosures of Financial Institutions
- d) The statutory regulations and international governing organisations relevant for the issuance of CG and CGR application.

6.2.1 Empirical contribution

This thesis has developed a taxonomy for CGR derived from an empirical study on corporate disclosures from financial institutions and therefore contributes to the missing literature about common practice taxonomies for CGR. It recommends the introduction of XBRL for CGR. This CGR taxonomy can be put into practice for CGR as well as being used for XBRL filings: it responds to demanding requirements from investors (Arnold *et al.*, 2012) and could enhance the transparency of increasingly complex CGR (Möllers and Kernchen, 2011).

The study also makes visible that narrative disclosures can be included in an XBRL taxonomy and this approach could be extended to other sections of the annual report: the MD&A, socially responsible reporting and the internal controls related to corporate reporting.

XBRL has so far been almost completely ignored for CGR (Roohani *et al.*, 2009), although it reveals a multitude of advantages, which might help to enhance the weak transparency, which was also regarded as a main contributor to the financial crisis (Taylor, 2009).

This thesis uses a multi-method approach, combining a qualitative with a quantitative method, which is unique in the development of a taxono-

my. The dual methods applied, i.e. a compliance review based on a qualitative assessment and a quantitatively driven content analysis, enable the analysis of CGR from different perspectives. The main contributions are that as an outcome of both perspectives, the XBRL-enabled taxonomy provides a high degree of robustness through the selected methodology and its generalizability is facilitated (Teddlie and Tashakkori, 2006).

Hence, this empirical study is based on the common practice approach, which is derived inductively from the de-facto CGR of financial institutions. This addition of common practice content brings the taxonomy somewhat closer into line with the normal practice of company reporting (Bonsón *et al.*, 2009). This approach is different compared to previous de-jure taxonomy developments, which are derived deductively based on legal requirements. To the best of the researcher's knowledge, this is the first empirical study to pursue this concept for CGR related to financial institutions.

Finally, this thesis follows a non-industry-specific focus, while other studies have so far excluded financial institutions due to their different regulatory environment (Markarian *et al.*, 2007).

6.2.2 Theoretical contribution

The results of this thesis provide additional value to an understanding of CGR and theories on CG.

6.2.2.1 Theory about CGR

The theoretical contribution of the thesis is that the development of the taxonomy allows an extensive explorative description of the CGR of Financial Institutions. This is an area that has so far not been explored in detail in the literature.

The literature review (Chapter 2) helped to understand the different CGR elements later identified in the empirical study. The diverse CG theories provide a reflection of the CGR of the corporation in practice. The section on the methodology indicated how the research question was addressed using qualitative and quantitative research methods. Major parts of the methodology can also be used for other taxonomy development research projects. A longitudinal study, which was beyond the scope of this thesis, with a larger-scale investigation of CGR, could also take advantage of the methodology of this work.

There are four main frequently reported topics pertaining to CG, which are internal governance, board organization, audit and shareholder protection, which are partly comparable with other theoretical studies on CG codes (Cicon *et al.*, 2012). Disclosures on CG can be standardised for Financial Institutions, despite the increasing complexity and differences due to national CG regulations (Paredes, 2003) .

6.2.2.2 Global theory of CG

This thesis could give proof that a multitude of different theories on CG can explain attributes of CGR based on an empirical study. The identification of common reporting elements provides empirical evidence of La Porta *et al.*'s (2000) theory of market-driven convergence and could support a worldwide theory of corporate governance (Schiehll *et al.*, 2014).

This thesis has also shown that a cohesive global theory of comparative corporate governance would be required, as this could also support the development of a global CGR taxonomy (Schiehll *et al.*, 2014).

To sum up, this study helps to close gaps with regard to theory on CG.

6.2.3 Practical contributions

One of the main objectives of this DBA thesis was to treat a practical issue. Although a large amount of research has been made public on CG, there is very little research about the usage of XBRL for CGR (Urdari *et al.*; Alles and Debreceeny, 2012). Considering the financial crisis, many academics and business professionals share the opinion that the turmoil requires a re-examination of CG (Akinbami, 2010; Ramos *et al.*, 2012; Fridson, 2013; McNulty *et al.*, 2013) and a search for opportunities to improve CG (Baker and Anderson, 2010). Companies are often criticized for only following a box-ticking approach to CGR without disclosing the true reality of their governance (PwC, 2013).

This thesis contributes to the increasing demand by investors to extend XBRL-enabled reporting to other non-financial reports, including CGR (Arnold *et al.*, 2012). One main obstacle for this extension is the lack of an adequate taxonomy (Roohani *et al.*, 2009), which this thesis intends to change.

There are several reasons that support the application and implementation of the developed taxonomy in the financial industry in Germany and Europe. First, XBRL represents a standard that is supported by many software systems that already exist in most financial institutions. This is due to the fact that regulators in many regions, including the United States, Europe and Asia, have already imposed mandatory rules on XBRL submissions for regulatory reports and partly for financial statements. Secondly, as this taxonomy is based on de-facto CGR, companies adopting this taxonomy should on average have a low level of company-specific reporting elements. Thirdly, the adoption of a mixed-method approach combining qualitative and quantitative research method should enhance quality characteristics of the taxonomy and increase the robustness of the findings. As a result, a robust and com-

prehensive taxonomy, as demanded in the literature (Kristine, 2011), is developed.

As the researcher's workplace is a peer of the chosen sample and also operates in the financial industry, the conditions are also met for possible implementation and adoption of the CGR taxonomy.

The result of this thesis is a new taxonomy for CGR, which can be implemented in practice by financial institutions. The costs are low even for small and medium size companies, as XBRL, once implemented for the Filing of the Financial Statements, can be extended to CGR with only limited costs (Pinsker and Li, 2008).

6.2.4 Contribution to regulation

The financial crisis has shown that financial institutions are not willing to increase disclosures on their own despite the positive impact of voluntary disclosures and that lawmakers have to enforce regulations on increased disclosures. This thesis indicates that XBRL can also be used for CGR.

The thesis results are also relevant for policymakers, regulators, associations and non-government institutions that develop, support and issue taxonomies for CG. These groups represent important stakeholders in the XBRL-supported reporting supply chain (Piechocki, 2007b). The findings about the taxonomy support the further development of a standardized reporting framework (Schiehl *et al.*, 2014).

As this taxonomy can be put into practice by financial institutions, the thesis findings are very relevant for international governing organisations that deal with CG. Additionally, the pursued approach of deriving common practice reporting elements can also be a general practical use case for the development of new taxonomies or the extension of existing taxonomies issued by international governing organisations.

Hence, the findings derived from the rich empirical data provide new insights which are relevant for policymakers as XBRL is increasingly applied (Troshani *et al.*, 2014). Policymakers have a strong interest in taxonomy engineering and an approach to further develop taxonomies, as they increasingly enter the driver's seat for the development of taxonomies.

6.3 Limitations and directions for future research

This thesis focuses on a research topic that has not yet been explored in this context and combination. The topic, although narrowed down, might have become too complex, as it combines CG, an issue in social science, with XBRL, which is also a technological standard treated within the academic discipline of computer science.

An additional limitation is that XBRL can still be classified as an emerging technology applied by companies, so there are only a limited number of XBRL filings available on an international basis. While for the US domestic GAAP filers, XBRL has been mandatory for the last three years and has produced many filings, IFRS filers are still lacking in terms of XBRL implementation, as the obligation to submit XBRL filings for IFRS filers has been postponed.

Due to limitations of focusing on the financial service sector, the sample consists of thirty-four companies, meaning that its findings might not be comparable, as the sample consists of multinational companies with different national jurisdictions and requirements. As a consequence, it might not be possible to generalize findings.

In 2012, the Columbia Business School Centre for Excellence in Accounting and Security Analysis provided an analysis (Morsfield, 2012) focusing on the latest development of XBRL and interactive data pursuing an investor's and analyst's perspective, including a prediction on the future usage of XBRL and interactive data. According to the survey, one

key determinant was identified, which was the lack of adequate data material for analysis. It can be concluded from this that a limitation for research on XBRL might be that the critical mass is still not yet reached from which reliable conclusions can be drawn.

The researcher's own company is part of the sample, which might be a source of bias and influence the researcher's findings.

A further limitation of this explorative study is that external validity might not be achieved, as the research findings are based on a sample of thirty-four financial institutions. However, several statistical tests have demonstrated that the findings are robust and can be significant. The application of the mixed-method research design facilitates the generalizability of the research findings, as the results of the qualitative and quantitative research are comparable.

Future research could apply research on a larger scale for financial institutions and also extend the sample to other industries such as industrial companies.

Several topics have been identified throughout the long journey of this research between 2008 and 2014; however, due to the limitation of time and the scope of the thesis, certain of these topics could not be addressed due to various reasons of time, scope and focus. The following paragraphs provide a brief description of these topics, which might be relevant for future research.

6.3.1 Impact of XBRL on content of financial information with regard to IFRS filers

One of the key topics that could not be addressed, due to the SEC's decision not to accept the IASB taxonomy yet, was to evaluate whether XBRL has a direct effect on the content of financial reporting when implemented. Did XBRL influence the content or do companies adjust

their financial reporting in order to meet the requirements? This is known as the reverse effect of XBRL on content and was first mentioned by Wagenhofer (2003). However, this objective can only be achieved if samples of XBRL-filings are subject to research. Once these become available, this question could be addressed by other researchers. This would enable academics to get a better understanding of XBRL and its impact on corporate reporting (Piechocki, 2007b).

6.3.2 Better data, better decisions

What is the impact of XBRL filings on investors' decision-making? Although journal articles have been written about this topic (Arnold *et al.*, 2012), many questions remain unanswered, particularly regarding the impact of XBRL on the decision of investors. Do investors make different decisions if they are based on XBRL filings? XBRL has facilitated the extraction of targeted information from corporations' past financial reporting. The importance of disclosures about CG has grown among institutional investors; however, the question also arises as to what will be the impact of an XBRL taxonomy for CG on the investors' decision-making.

6.3.3 Global Taxonomy

The interoperability with other taxonomies is a major advantage of XBRL. However, the discussion from the SEC with the IASB has demonstrated that there is still more research needed, which also considers the different accounting rules and the content of the taxonomy. A technical interoperability does not mean automatically that the concepts are exchangeable. There is still a long way to go before the implementation of a global unified taxonomy in practice.

7 Reflective diary

7.1 Learning the Basics

The DBA is a doctorate which, in contrast to the PhD, aims primarily to deliver a practical contribution to the area of management by following a research topic that addresses a specific company issue. The DBA degree at the University of Surrey is a program that consists of two main stages. The first stage contains on-campus modules taught by university faculty members, involving assignments that have to be passed before continuing with the main thesis. The second stage involves the final writing of the thesis and the preparation of the waiver.

My research was very much influenced by my work experience. I have over 15 years of work experience as a group controller and consultant to listed German and international financial institutions in converting, transforming and enhancing corporate disclosures and associated business processes.

The pre-study stage with the different modules became a very important part for me within the overall process of finalizing the thesis. These modules helped me first to gain an overall view of the different process-steps involved in the preparation of a thesis. Secondly, the modules provided a very good overview of tools such as quantitative and qualitative methods. Moreover, it helped me to learn to analyse my literature resources and find the appropriate literature for addressing my specific research question. Last but not least, it helped me to focus on the question of the research methodology at a very early stage. An inductive, a deductive or even a combination of these methods was one of the dominant topics of the discussion among the group of DBA students. The way in which we were brought together, sharing the same long-term objective while not competing with each other, created an environment of cooperation and mutual understanding. Even though the cohort's associated topics have been very heterogeneous in terms of current em-

ployer industry, several common process-related questions existed, with which each member was confronted and which could be shared among the group.

Not surprisingly, I always looked forward to these meetings, as I learned a lot from different industries, work experience and to the fact that the other students in the cohort worked all over the world, which meant that cultural differences became apparent. To give an example: we had a long discussion about the philosophical underpinnings with regard to epistemology. It could be assumed that there is only one general history with regard to epistemology: however, we soon found out that these streams of philosophy are very much embedded in Western history, as from a non-Western point of view, completely different streams would have been identified, and therefore it became apparent that the cultural underpinnings play an important role in gaining knowledge.

Attending these seminars was difficult, as they took place on weekends and on working days. Furthermore, after the course, assignments had to be completed. The seminars encouraged discussions with other DBA students, which had a positive impact, as everyone presented his or her research project, and although all topics were different, there were similarities, for example in choosing the methodology, and therefore many possibilities arose to exchange ideas. As well as feedback from other students, there was also the opportunity to receive feedback from the professor about one's own research project.

The seminars were pre-structured in such a way that before the beginning of the seminar, the topic was organized in sub-modules and we received handouts with the presentation slides and additional very useful and helpful material such as articles or previous assignments in the form of best-in-class examples. Without these seminars, it would have been more difficult to complete the program, as the seminars helped to provide an overview of the main learning topics

The first module consisted of “Philosophical Underpinning for Research Methods”. The associated assignment was divided into two tasks. The first task was to choose six concepts from a list of fifteen and to provide an explanation of how an understanding of those selected research concepts might help to contribute to the completion of a DBA thesis.

The first task focused on the question of how background assumptions resulting from different paradigms have an effect on the research design. The course illustrated that each writer of a thesis exerts his or her own paradigm, which has an impact on the thesis, and that it is important to understand this relationship.

The next module’s topic was “Quantitative methods”. The assignment in this area followed the objective to evaluate the level of employees’ general satisfaction. I developed an online based questionnaire with the help of an internet platform. The research objective was to measure a possible correlation between the employees’ overall job satisfaction, outside activities and social life. As my job and academic education relate mainly to finance and controlling, the development of such a questionnaire was a new experience. Due to the availability of existing tools to create online questionnaires, I was enthusiastic about setting up such a questionnaire. Participants could log on to a website using a password to complete the questionnaire. With admin rights, I was able to follow the status of the questionnaire. As part of the seminar, we received a CD-ROM with the latest version of IBM’s SPSS software. The task was to use this statistical software for the analysis of data from the self-developed online questionnaire. As a result, I performed several parametric and non-parametric tests, which in a second stage were used for the data analysis.

The third seminar dealt with qualitative research methods. The aim of the assignment was to develop a research or consultancy proposal that

develops a research objective using qualitative research methods. The assignment was accompanied by a literature review.

It was at this time when I developed the idea to use also qualitative research method, as I learned that qualitative research methods can support findings gained from quantitative research methods and thus increase the significance of the research findings.

The topic of the next assignment was to perform a critical literature review. The objective was to support students in our development of critical thinking, particularly to learn to engage critically as readers of management texts, research reports and proposals. Within this module, I learnt to check for a systematic and considered approach, to examine my own bias and to improve my writing by applying more clarity and logic in the structure of the argumentation.

The last module finished with the writing of the proposal and the objectives of understanding the requirements of a suitable research design, being able to understand the requirement of a DBA thesis and being able to write an acceptable DBA research proposal.

Having completed all these modules, I feel that I have grown in academic and professional ways because I am capable of reviewing articles critically and I have learnt to apply several research methods which will help me to undertake my research and will also have a positive impact on my business life. In general, it is crucial to stay critical and not to accept what is given. Besides this, exchanging approaches and ideas with other students has been a fruitful experience, too.

7.2 *Starting the DBA Thesis*

The research applied has to be rigorous to become accepted as a Doctorate and relevant to the area of management research by focusing on real problems. It is a Doctorate for practitioners, and this aspect served as motivation for me to start the DBA programme. Initially, the main challenge was to find a topic that complies with all provisions of the university for a DBA thesis. The DBA thesis focuses on a real management problem. It uses existing theory and applies that theory to a corporation to solve a specific business issue. Therefore, it is not the aim of the DBA to develop new theory. The results of the DBA should provide enhancements to the DBA candidate's place of work. The chosen topic should be of intellectual value and should have been explored in the academic literature but not definitively resolved. Finding a topic that complies with these requirements was a gradual process. This task involved structuring, searching, choosing and verifying my topic. The main triggering event for me was the financial crisis.

The idea to concentrate and learn much more about CGR and XBRL took some time to develop, as I started with CGR and then combined it with XBRL, as my working situation is very much influenced by XBRL. To combine it with a DBA programme was very good, as I could dive deep into the field of my favourite theoretical topic and, at the same time, learn how to accomplish an academic research project. Above all, I found a way to still come back to my original research question – “What caused the financial crisis?” – as insufficient CG was regarded as a main root cause for this crisis. I was very excited to structure my research further and find ways to confirm and test my hypotheses. Despite reading several hundred articles, my original assumptions were confirmed.

Besides this, a strong influence on the chosen topic might come from one's own workplace and the industry within which one is working. In

particular, I recognized that the focus on XBRL appeared to be a lucky case, as my professional work became increasingly involved in the preparation of XBRL. The more I thought about the research question, the more the topic became understandable. I searched more literature and I became excited about finding similar confirming views and findings.

7.3 *Research and Writing*

Looking back and comparing the completed thesis to my original proposal, I must say that my topic has developed substantially over time. I would estimate that less than 30% was defined at the beginning and several additional important chapters had to be developed in order to fulfil the criteria of a DBA study. During writing and reading, knowledge grows, and this is a kind of evidence and indicator of the learning process of the exercise. The first step involved preparing an overview of the prevailing CG theories and the link to CGR. There is no specific theory that is applicable to CGR; however, in my literature review, I referred to the theory about corporate disclosures. The thesis took shape over a long period of four years, which made it necessary to go through the whole document from beginning to end. Moreover, I updated my literature review at the end of the third year to ensure that new literature was not missed and research gaps defined had not been closed by new literature.

XBRL is always seen as an enabler within the accounting literature, so the question arose of what happens when CG Disclosures are combined with XBRL. Although the XBRL technology has become a de-facto standard for the usage of financial reporting communication, there were only a few studies available within academic journals which covered the connection between disclosures on CG and XBRL. As only a few articles in academic journals have been published on that specific topic, it was possible to systematically read and analyse the majority of the existing articles.

During the third year of research, I took part in several working groups with the focus on XBRL, as the topic became more important for regulators, accounting boards and companies. Moreover, within the EU, a working group was established to define the standard for electronic exchange of financial reporting information in the future, which I also participated in. To sum up, XBRL is a topic that was put on the agenda for many different reasons.

In the last two years, I continued to work on my thesis almost every day, while the following practical lessons contributed to my completion of my research journey. Firstly, my submission of a paper to the Journal “CG: An International review” and my participation in the Conference CGIR CG Conference in Cambridge with the topic “National Governance Bundles” proved to be valuable for me. It gave me valuable feedback from other researchers. My paper, named “Taxonomy of CGR Concepts”, became part of the conference, as it was included as a presentation. The conference was a very good opportunity to meet academics who are experts on CG topics and to exchange ideas. I received very constructive feedback on my conference presentation. After the conference I was asked to become a reviewer for the Journal of CG: An International Review (CGIR), which was a great honour. I think this helped me to enter the next level, as I took part in reviews of unpublished articles and discussions within the review team and with the editor. I think it helped me a lot to learn to recognise high academic standards. This experience contributed very much to the completion of my thesis.

Secondly, as a part-time researcher, the careful planning of the milestones became an important task, without which it would have been very difficult to keep on track. Moreover, additional workshops took place at the University of Surrey, which provided the opportunity to receive feedback on my progress and also to meet the cohort of six students. In the almost four years, we developed close relationships and

the group experience helped me to keep on track and follow the course to the completion of the thesis.

During the last two years, I spent a lot of time learning to analyse data. This became increasingly important for the development of the taxonomy.

Overall, I have come to the conclusion that finishing this research on a part-time basis has been one of the most demanding tasks I have ever undertaken in my life to date. At the same time, it was also a very enjoyable and a rewarding experience. I think without contributing much heart's blood (In German, we say "Herzblut"), I would not have managed to finish.

8 Appendices

APPENDIX A: “Guidance on good practices in corporate governance disclosure”

Table A.1: “Guidance on good practices in corporate governance disclosure” (Source: United Nations, 2003)

Number	Classification R/M	Main Category	Sub category	Disclosure Requirement
I.	R R M	Financial Disclosures	Specific areas of disclosures	<p>1. Financial disclosures' level of quality correlates significantly with completeness and accuracy of the financial information provided.</p> <p>2. The basis of the financial reporting standards on which the financial information is prepared and reported: the code mentions the International Financial Reporting Standards as a widely recognized benchmark.</p> <p>3. Board of directors is in a position to improve the quality of corporate disclosures by disclosing more information on a voluntary basis, which is relevant for investors' decisions. An example would be a disclosure and an analysis on critical</p>

	R			<p>accounting estimates in the MD&A.</p> <p>4. Risks and estimates resulting from the preparation and reporting of the financial and operational results of the company should be part of the board's tasks, aiming at providing investors with information for a risk return analysis.</p> <p>5. Board of directors have the possibility to submit further information related to the review of fair value methodologies and that these methodologies comply with market standards.</p> <p>6. The board's responsibilities regarding financial communications should be disclosed.</p> <p>7. Process of preparing the financial statements should be provided.</p> <p>8. Duties of the board in the context of the review and approval of financial statements should be clearly disclosed</p> <p>9. Enterprises should fully disclose significant transactions with related parties</p> <p>10. Board of directors should submit specific best-practice corporate information as fol-</p>
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				<p>lows: material transactions with related parties and participants with a controlling stake; corporate information about the kind, extent and explanation for the existence of such a related-party participation; related-party participation where a controlling stake exists. Disclosure about management governance for deciding on related-party transactions.</p> <p>11. Related Party transactions from the board and managers should be disclosed, as well as transactions which are not processed at arm's length.</p>
II.		Non-Financial Disclosures		
	M		Aims	<p>The aims of the enterprise should be disclosed.</p> <ul style="list-style-type: none"> • Commercial • Governance • Social, environmental and economic
	M M M		B. Ownership and Shareholder Rights	<p>Beneficiary ownership structure should be fully disclosed to all interested parties.</p> <p>Disclosure should include</p> <ol style="list-style-type: none"> 1. Control structure 2. Means to achieve control. 3. Any arrangement which implies that the rights exceed

	M			<p>shareholders' equity stake.</p> <p>4. Any organizational preparations or processes which are in place to protect the interests of minority shareholders</p> <p>5. Disclosure of the direct control is regarded as preferable</p> <p>6. If there is deviation from the "one share, one vote" principle, this should be disclosed or at least made apparent by implementing different share classes.</p>
	M			
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			C. Changes in Control and Transactions involving Significant assets	<p>Rules and processes covering corporate control in the capital markets and significant material non-recurring transactions such as business combinations and material sales corporate assets should be disclosed</p> <p>Disclosure should cover:</p> <p>1. Corporate strategic plans to acquire control and to delist or take public and associated squeeze-out/sell-out rights relevant for minority shareholders</p> <p>2. Identification of the involved</p>
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				<p>parties and covering agreements between the merging entities and a description of the results of the transaction for the stakeholders of the different corporations; disclosure of the financial position of the company pursuing acquisitions.</p> <p>3. Measures against takeovers should be reported.</p> <p>4. Best practice disclosures are assumed for the sale event of a substantial portion of corporate assets; this should be accompanied with a heads-up to all shareholders, including an independent evaluation report.</p>
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	M		Boards and key executives	boards and key executives. The disclosure should include: <ol style="list-style-type: none"> 1. The types and responsibilities of memberships held by an individual director. 2. The actual board memberships, and whether the enterprise has a rule on limiting the number of board memberships a director may have 3. Terms of reference of outside board and management positions that any individual director holds. 4. For key executives, information on outside board and management positions 5. The types of qualification and training directors receive during the reporting period. 6. Possibilities for qualifications. 7. Information on whether that facility has been used during the reporting period 8. Whatever approach is used, the board should disclose existing performance evaluation. The following disclosures should be made: <ol style="list-style-type: none"> 1. Board evaluation and how
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	M			the results are applied.
	M			2. Performance evaluation of directors, attributes for evaluation, what impact on compensation.
	M			With regard to the directors' remuneration, the following disclosures should be made:
	M			1. Different compensation rules for executives and non-executive directors.
	M			2. Compensation and its connection to long-term profitability.
	M			3. All components of fixed and variable compensation.
	M			4. Where share options for directors are used as incentives but are not disclosed as disaggregated expenses in the accounts, their cost should be fully disclosed using a widely accepted pricing model.
	M			5. The length of directors' contracts and the termination of service notice requirements. Compensation rules in place for director termination.
	M			6. A specific reference should be made to any special arrangement relating to sev-

	M			<p>erance payments to directors in the event of a takeover</p> <p>The following disclosures are required:</p> <ol style="list-style-type: none"> 1. Disclosure about established accession plans for the case that key executives leave and going concern is not guaranteed. <p>Conflict of interest to be disclosed:</p> <ol style="list-style-type: none"> 1. Related to the board 2. The board of directors should submit if terms of references are established for correspondent situations. 3. All conflicts of interest should be disclosed, along with what the board decided to do regarding the specific situation and the relevant director involved.
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	M M M M M		F. Material Issues Regarding Stakeholders and Environmental and Social Stewardship	<p>Material Issues Regarding Stakeholders, and Environmental and Social Stewardship to be disclosed:</p> <ol style="list-style-type: none"> 1. Protecting the rights of other stakeholders in a business. 2. The legal rights of stakeholders are respected. 3. Independent of the legal requirements, it is assumed best practice to undergo additional commitments. 4. The role of employees in CG. 5. The board's policy and performance related to environmental and social responsibility and the impact of this policy and performance on the firm's sustainability.

	M		G. Significant risk factors to be forecasted	Significant risk factors to be forecasted: 1. Sufficient disclosures should be provided by boards on the aims of risk management, IT-systems and controls. Additionally, rules on the identification and management of risks should be made public. 2. The board should provide adequate disclosures related to its system on internal control. This should comprise controls that mitigate risks and risk mechanisms.
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	M		H. Independence of External Auditor	Independence of External Auditors 1. Disclosure about the independence of external auditor. 2. The process for the appointment of and interaction with external auditors should be disclosed. 3. Disclosures should include the process for the selection of the external auditor. The rules for the change of the internal defined auditors, the governance of the contract and interaction with the auditor. Disclosure of the proportion of non-audit
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	M			<p>2. Submission of the agenda and proposed decisions should be made public without delay and provided in the national language of the enterprise as well as, if appropriate, an internationally used business language.</p> <p>3. The decisions made on the general meeting should be submitted to the shareholders without delay.</p> <p>4. The corporation should make public all process-related information on the shareholders and how agenda items can be submitted, and should disclose which shareholder proposals (if any) were excluded from the agenda and why.</p>
IV.	M	Timing and Means of Disclosures		<p>1. Submission of all material concerns related to CG of the company on time without delay. The disclosure should be governed by the “substance over form” principle.</p> <p>2. The code does not require a single approach to be fol-</p>
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	M			<p>lowed, as the option exists to either include all in one report or reference.</p> <p>3. If there is no aggregated CG report, referencing should be applied.</p> <p>4. The annual report, which is a traditional source of communication with investors, should be extended through other channels.</p>
V.	M	Good Practices for compliance		<p>If there is no local code on CG, companies should follow recognized international good practices. Where there is a national code on CG, the company should comply with these rules and otherwise provide additional information as reasons.</p> <p>The enterprise should disclose awards with regard to improved CG.</p>
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APPENDIX B: Codebook

Project

The project scope is to identify compliance with the “Guidance on Good Practices in Corporate Governance Disclosure” (United Nations, 2006). This CG code was issued by the United Nations in 2006. The sample to be analysed consists of corporations of the NYSE. These corporations are financial institutions and the time for this compliance analysis is the annual reports issued for 2012.

Introduction

The project scope is to identify compliance with the “Guidance on Good Practices in Corporate Governance Disclosure” based on the United Nations (2006). The analyses focus on the publically available information for investors, which can be collected from the annual reports. This CG code was issued by the United Nations in 2006. The sample to be analysed consists of Financial Institutions listed on the New York Stock Exchange and which are foreign private issuers.

Code responsibilities

01 Dirk Beerbaum

02 Research student

Code Training

The first task is to learn the identified categories and disclosure subcategories, which were developed by code 01. The instructions within the codebook, which explain the coding, should be clearly understood. A final intercoder reliability test will be performed to ensure validity and reliability of coding.

Training Materials

Example: UBS

Common coding examples: Barclays, Deutsche Bank and Credit Suisse

General Coding Instructions

1. Analyse the provided annual reports based on the given categories and provide answers to the given categories and subcategories, which represent external disclosure elements.
2. Evaluate the categories for each sample with the general instruction to score 1 for compliance and 0 for non-compliance.
3. If there are doubts about how to measure a variable, a 0 measurement should be given, which means that it should be valued cautiously.
4. Please decide on each category on your own and separately and do not combine the valuation with other categories.
5. During the coding process it should be possible to have contact between the first and the second coder.

6. The complexity of the given samples should be reduced by performing well-structured preparations.
7. All information within the provided sample should be considered for the evaluation.

Coding sheet

Project

Category x.y
compliance

Compliance

Non-

☐
☐

This codebook instruction considers recommendations on content analysis issued by Früh (2011) and Neuerdorf (2002).

APPENDIX C: Factor Extraction

Table B.1: Factor extraction without length adjusted

	Median	Standard deviation
boards	,01	,010
directors	,02	,013
committees	,02	,011
governments	,01	,007
corporation	,01	,009
shareholding	,01	,019
manages	,01	,013
reports	,03	,052
codes	,02	,045
executives	,01	,007
members	,02	,045
meets	,00	,003
recommends	,01	,039
informed	,02	,039
audit	,01	,013
financial	,02	,035
remuneration	,01	,012
responsiveness	,02	,034
independent	,01	,006
principles	,01	,031
risk	,01	,017
requiring	,01	,031
international	,01	,030
control	,02	,037
practices	,01	,011
proposal	,01	,029
auditors	,01	,021
provide	,01	,010
performing	,01	,027
review	,01	,021
relations	,01	,027
lists	,01	,011
issuer	,00	,009
sharing	,00	,002
disclosure	,01	,026

effectiveness	,01	,016
rules	,00	,004
making	,01	,010
generality	,00	,003
chairman	,01	,029
years	,01	,025
businesses	,01	,024
policy	,01	,016
ensure	,01	,024
compensation	,00	,005
must	,01	,024
timing	,01	,024
accounting	,01	,023
institution	,02	,029

Communalities

	Beginning	Extraction
boards	1,000	,838
directors	1,000	,858
committees	1,000	,849
governments	1,000	,852
corporation	1,000	,777
shareholding	1,000	,966
manages	1,000	,896
reports	1,000	,907
codes	1,000	,988
executives	1,000	,719
members	1,000	,988
meets	1,000	,827
recommends	1,000	,991
informed	1,000	,993
audit	1,000	,889
financial	1,000	,992
remuneration	1,000	,951
responsiveness	1,000	,984
independent	1,000	,918
principles	1,000	,975
risk	1,000	,879
requiring	1,000	,986

international	1,000	,988
control	1,000	,874
practices	1,000	,876
proposal	1,000	,989
auditors	1,000	,840
provide	1,000	,945
performing	1,000	,989
review	1,000	,897
relations	1,000	,990
lists	1,000	,931
issuer	1,000	,926
sharing	1,000	,814
disclosure	1,000	,986
effectiveness	1,000	,908
rules	1,000	,913
making	1,000	,897
generality	1,000	,927
chairman	1,000	,804
years	1,000	,991
businesses	1,000	,990
policy	1,000	,648
ensure	1,000	,989
compensation	1,000	,891
must	1,000	,988
timing	1,000	,989
accounting	1,000	,971
institution	1,000	,721

APPENDIX D: Results of Latent Semantic Analysis

Table B.2: Results of LSA

Reciprocating members	Codes	Boards	Reports	Re- commend	Remuneration	Policy	Director	Committees	Shareholding	Independent	Risk	Audit	Accounting	Chairman	Control	Institutional	Executives	Principles	Lists
NFO16	0.21	0.14	0.18	0.25	0.04	0.36	0.21	0.09	0.06	0.31	0.29	0.03	0.02	0.14	0.33	0.56	0.27	0.37	0.16
NFS17	0.14	0.24	0.2	0.38	0.11	0.29	0.39	0.23	0.14	0.34	0.31	0.09	0.05	0.29	0.29	0.41	0.28	0.44	0.22
NFS18	0.17	0.28	0.3	0.36	0.13	0.51	0.51	0.47	0.16	0.39	0.3	0.15	0.08	0.36	0.54	0.41	0.35	0.34	0.31
NFS19	0.25	0.29	0.27	0.38	0.12	0.29	0.51	0.47	0.1	0.37	0.35	0.1	0.08	0.22	0.35	0.39	0.31	0.4	0.31
NFS20	0.04	0.23	0.26	0.37	0.02	0.33	0.51	0.47	0.07	0.46	0.31	0.14	0.08	0.23	0.74	0.35	0.26	0.4	0.25
NFS21	0.36	0.3	0.26	0.39	0.16	0.23	0.36	0.47	0.15	0.34	0.29	0.12	0.07	0.23	0.3	0.32	0.28	0.4	0.32
NFC22	0.21	0.23	0.38	0.28	0.05	0.36	0.51	0.47	0.21	0.3	0.33	0.33	0.31	0.17	0.46	0.31	0.35	0.37	0.27
NFC23	0.09	0.26	0.27	0.28	0.15	0.43	0.36	0.47	0.26	0.42	0.33	0.22	0.15	0.26	0.54	0.44	0.42	0.38	0.22
NFC24	0.06	0.2	0.38	0.3	0.06	0.36	0.36	0.47	0.17	0.43	0.35	0.29	0.32	0.26	0.55	0.4	0.34	0.4	0.25
NFC25	0.31	0.28	0.35	0.49	0.1	0.25	0.49	0.47	0.03	0.28	0.35	0.12	0.12	0.23	0.25	0.21	0.21	0.35	0.25
NFC26	0.29	0.26	0.48	0.41	0.13	0.29	0.49	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG27	0.03	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG28	0.02	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG29	0.14	0.26	0.48	0.41	0.13	0.29	0.48	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG30	0.33	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG31	0.56	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG32	0.27	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFG33	0.37	0.26	0.48	0.41	0.13	0.29	0.48	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM34	0.26	0.26	0.48	0.41	0.13	0.29	0.41	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM35	0.28	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM36	0.26	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM37	0.26	0.26	0.48	0.41	0.13	0.29	0.48	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM38	0.26	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM39	0.26	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM40	0.26	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFM41	0.31	0.39	0.33	0.37	0.15	0.22	0.51	0.47	0.19	0.35	0.3	0.15	0.13	0.25	0.33	0.34	0.37	0.34	0.38
NFM42	0.27	0.41	0.31	0.42	0.13	0.46	0.51	0.47	0.13	0.37	0.38	0.2	0.12	0.33	0.38	0.4	0.37	0.33	0.32
NFM43	0.27	0.43	0.36	0.42	0.17	0.25	0.51	0.47	0.22	0.33	0.3	0.21	0.16	0.26	0.37	0.41	0.49	0.37	0.3
NFM44	0.3	0.35	0.57	0.37	0.14	0.26	0.51	0.47	0.19	0.25	0.21	0.36	0.27	0.22	0.31	0.32	0.54	0.28	0.44
NFM45	0.33	0.17	0.34	0.17	0.18	0.17	0.51	0.47	0.15	0.26	0.27	0.18	0.31	0.14	0.24	0.2	0.35	0.34	0.2
NFM46	0.26	0.26	0.48	0.41	0.13	0.29	0.41	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFI47	0.26	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFI48	0.26	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFI49	0.26	0.26	0.48	0.41	0.13	0.29	0.48	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFI50	0.26	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFR51	0.26	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFR52	0.26	0.26	0.48	0.41	0.13	0.29	0.26	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFR53	0.31	0.39	0.33	0.37	0.15	0.22	0.51	0.47	0.18	0.35	0.3	0.15	0.13	0.25	0.33	0.34	0.37	0.34	0.38
NFI54	0.27	0.41	0.31	0.42	0.13	0.46	0.51	0.47	0.13	0.37	0.38	0.2	0.12	0.33	0.38	0.4	0.37	0.33	0.32
NFI55	0.27	0.43	0.36	0.42	0.17	0.25	0.51	0.47	0.22	0.33	0.3	0.21	0.16	0.26	0.37	0.41	0.49	0.37	0.3
NFI56	0.3	0.35	0.57	0.37	0.14	0.26	0.51	0.47	0.19	0.25	0.21	0.36	0.27	0.22	0.31	0.32	0.54	0.28	0.44
NFI57	0.33	0.17	0.34	0.17	0.18	0.17	0.51	0.47	0.15	0.26	0.27	0.18	0.31	0.14	0.24	0.2	0.35	0.34	0.2
NFI58	0.26	0.26	0.48	0.41	0.13	0.29	0.41	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFI59	0.26	0.26	0.48	0.41	0.13	0.29	0.51	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4
NFI60	0.26	0.26	0.48	0.41	0.13	0.29	0.48	0.47	0.25	0.39	0.38	0.38	0.27	0.22	0.37	0.3	0.38	0.38	0.4

Reporting- elements	Codes	Boards	Reports	Recommend	Remuneration	Policy	Shareholding	Independent	Risk	Audit	Accounting	Chairman	Control	Institutional	Executives	Principles	Lists
NFI61	0,2 1	0,2 8	0,3 1	0,4 8	0,1 4	0,5 9	0,5 1	0,4 7	0,0 5	0,4 4	0,3 5	0,2 4	0,1 3	0,3 7	0,3 5	0,4 6	0,3 7
NFI62	0,1 3	0,1	0,1 9	0,2	0,0 4	0,2 2	0,4 9	0,4 7	0,0 1	0,6 3	0,1 8	0,0 9	0,0 7	0,1 5	0,3 3	0,2 4	0,1 3
NFIA63	0,2 3	0,2 8	0,4 7	0,4	0,1 4	0,3 2	0,5 4	0,4 7	0,0 5	0,3 8	0,2 5	0,2	0,2 5	0,3	0,4	0,4 1	0,4 2
NFIA64	0,2 1	0,2 3	0,2 7	0,4	0,0 4	0,2 3	0,5 1	0,4 7	0,0 7	0,2 8	0,2 9	0,1 9	0,1 1	0,1 7	0,3 2	0,2 9	0,2 7
GM65	0,3 2	0,2 6	0,4 9	0,4 3	0,1 3	0,2 8	0,5 1	0,4 7	0,1 8	0,3 5	0,2 8	0,2	0,2	0,2 6	0,3 4	0,3 8	0,3 8
GM66	0,3	0,2 8	0,3 6	0,4 4	0,1	0,2 6	0,5 1	0,4 7	0,0 8	0,3 4	0,2 9	0,1 6	0,1 9	0,2 4	0,3 1	0,2 9	0,3 1
GM67	0,2 4	0,2 8	0,3 4	0,4 8	0,1 3	0,2 2	0,5 1	0,4 7	0,1	0,3 3	0,3	0,0 9	0,1 3	0,2 4	0,3 1	0,2 5	0,2 9
GM68	0,3 1	0,3	0,4 2	0,4 3	0,1	0,2 8	0,5	0,4 3	0,2 4	0,2 9	0,3 3	0,2 5	0,1 8	0,2 2	0,3 2	0,3 6	0,3 7
GM69	0,3 2	0,2 6	0,4 9	0,4 3	0,1 3	0,2 8	0,5 1	0,4 7	0,1 8	0,3 5	0,2 8	0,2	0,2	0,2 6	0,3 4	0,3 8	0,3 8
GM70	0,3	0,2 8	0,3 6	0,4 3	0,1	0,2 6	0,5 1	0,4 7	0,0 8	0,3 5	0,2 8	0,1 6	0,1 7	0,2 4	0,3 1	0,2 9	0,3 1
TI71	0,2 5	0,2 8	0,2 9	0,3 8	0,0 7	0,3	0,5 1	0,4 7	0,1 1	0,3 4	0,3	0,1 7	0,0 9	0,2 1	0,3 3	0,3 6	0,2 9
TI72	0,3	0,2 5	0,4 8	0,4 5	0,0 8	0,2 1	0,5 1	0,4 7	0,1 3	0,2 9	0,2 5	0,2 2	0,1 9	0,1 6	0,2 8	0,2 7	0,3 5
TI73	0,3	0,2 7	0,4 6	0,4 6	0,0 8	0,2 3	0,5 1	0,4 7	0,1 4	0,2 9	0,2 7	0,2 2	0,1 8	0,1 7	0,2 8	0,2 8	0,3 5
TI74	0,2 7	0,2 2	0,5	0,3 8	0,1	0,3	0,5 1	0,4 7	0,1 3	0,3 4	0,3 5	0,2 1	0,3 2	0,2 1	0,3 4	0,3 6	0,3 7
C075	0,3 6	0,3 5	0,3 2	0,4 2	0,1 1	0,3 2	0,2 1	0,3 2	0,1 4	0,3 8	0,3 5	0,1 5	0,0 9	0,2 3	0,3 8	0,3 6	0,3 6

APPENDIX E: Project Plan

Figure E.: Project Plan and Costings

Project Phase	Deliverables	Timing	Details
Research Proposal	First Draft Proposal	2011	- Submission of Research Proposal (November)
Preparation of DBA Thesis	Detailed clarification of topic and methodology with Supervisors	May/June 2012	- Submit Proposal (January) - Contact Supervisors for research topic and method (April) - Meet with experts within the Company
DBA Thesis – Start of Literature Review	Draft Literature Review	August 2012	- Meeting with supervisor - Classification of existing literature and research methodology - Presentation of research outcome within DBA cohort six - 10,000 words
DBA Thesis	Reformulate research topic and methodology based on literature review	November 2012	- Feedback loop with supervisor and reformulate research approach
DBA Thesis – Final draft Literature	Final Literature Review and methodology completed	December 2012	- Agree with supervisors on methodology - Discuss theoretical prepositions - Decide on qualitative and quantitative research method
Preparation of Qualitative Study	Preparation	March 2013	- Download and print out Annual Reports
Begin of Coding	Overview of CGR	June 2013	- Training of Coders - Test compliance with an International CG Code

Project Phase	Deliverables	Timing	Details
Preparation of Quantitative Study	Principal Component analysis	December 2013	<ul style="list-style-type: none"> - Collection of CGR characteristics of 34 FPIs - Develop common practice elements - Review of Content
Data Analysis	Integration of qualitative and quantitative study results	March 2014	<ul style="list-style-type: none"> - Mapping of Main Categories - Latent Semantic Analysis (LSA) - Development of Taxonomy based on eight clusters with five main categories
Update of DBA Thesis	Near final Draft of DBA Thesis	June 2014	<ul style="list-style-type: none"> - Update Literature Review - Update Theoretical Propositions - Update Findings based on qualitative analysis - Update Findings based on quantitative analysis - Integration of qualitative and quantitative research findings
Submit first full draft to Supervisors	First full Draft of DBA Thesis	November – 2014	Feedback loop with supervisor
Final	Final DBA Thesis	April – June 2015	<ul style="list-style-type: none"> - Abstract - Literature Review - Study results of Coding - Results of Quantitative part - Taxonomy Development - Results Analysis - Conclusions
Final Submission	Final DBA Thesis	July 2015	Prepare for viva voce

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