

**The Impact of Bank
Integrity and Reputation on
Company Costs and Performance
in the Process of Certification:
an Empirical Analysis**

by

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For my Beloved Ones

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1. Introduction

“In looking for people to hire, look for three qualities: integrity, intelligence, and energy. And if they don’t have the first one, the other two will kill you.”

Warren Buffett

(Source: “Success Will Come and Go, But Integrity is Forever”, Forbes Magazine, 28.11.2012)

1.1 Motivation

World news in the recent past has been conspicuous for the number of illegal activities perpetrated by companies and banks – a trend that is evidently continuing. Increasing globalization combined with macroeconomic turbulence has led to an intensification of competition and consequent pressure to perform, which can apparently no longer be contained within legal limits.

As a result, cases of corruption, bribery, and money laundering, as well as restatements and settlement payments are appearing more frequently in public. These incidents motivate the question: Is the impression of increasing frequency just subjective or is it backed by firm evidence?

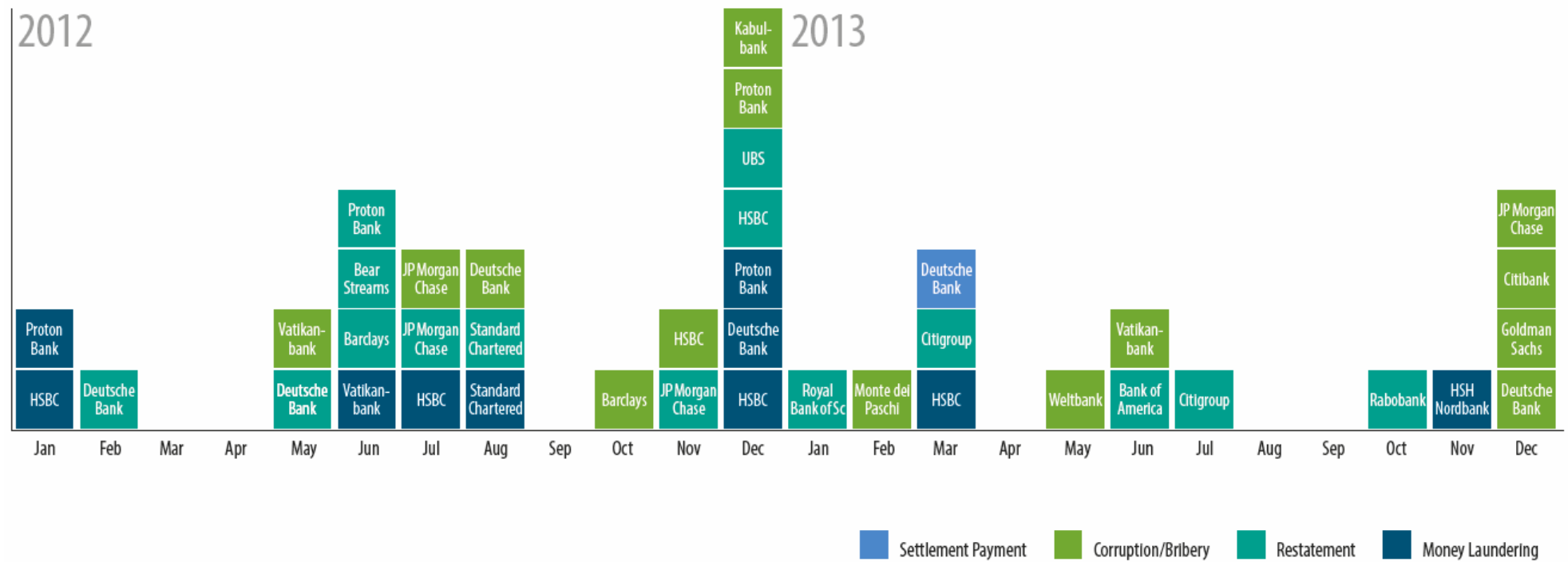
The following chart illustrates the present author’s investigation of illegal economic activity on the part of banks from January 2012 to December 2013. The events can be divided into "restatements", "money laundering", "corruption and bribery" and "settlement payments". The focus lies exclusively on banks: other companies have not been considered. An analysis of these events shows that within the short period of two years all in all forty cases of illegal economic activity have prominently occurred in the world. For example Goldman Sachs has had a case of bribery in 2012¹ and JP Morgan

¹ <http://www.handelsblatt.com/politik/deutschland/us-investmentbank-berlin-rechnet-mit-goldman-sachs-ab/3417244.html>

a case of manipulation in 2012 as well.² Our focus lies on those cases which can be subdivided into fifteen cases of restatement, fourteen cases of corruption and bribery, ten cases of money laundering, and one case of settlement payment. Furthermore, it is worth mentioning that during these two years only five months elapsed without the appearance of any such event.

² <http://www.spiegel.de/wirtschaft/unternehmen/barclays-ex-chef-bob-diamond-soll-zinsmanipulation-angeordnet-haben-a-844761.html>

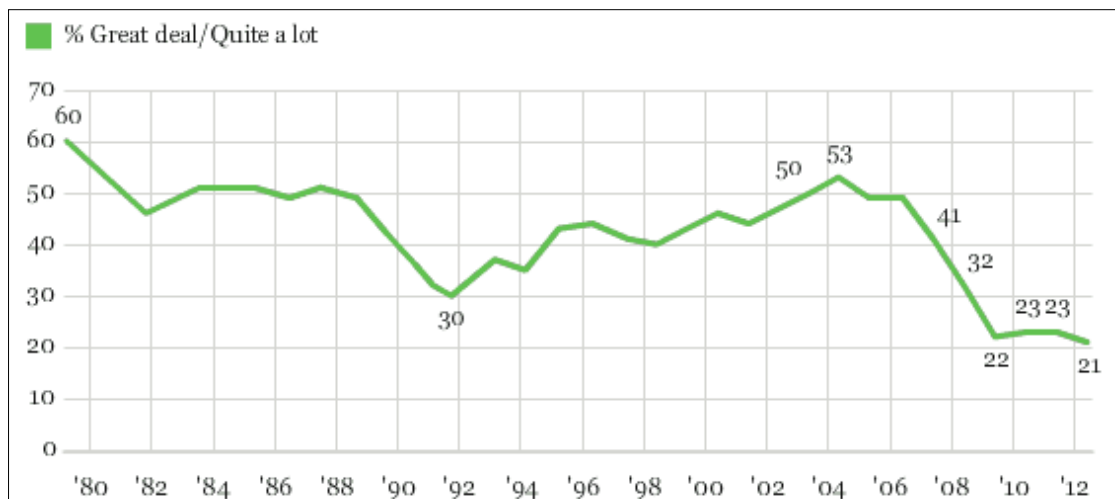
Figure 1: Cases of Bank Misbehavior during 2012 and 2013
Source: Research



Considering the fact that private as well as professional investors commit their financial investments to banks, the important role of trust becomes obvious. Since 1979 Gallup has conducted an analysis every year to determine the development of trust of U.S. Americans in American banks. The Gallup Organization is one of the leading market research bureaus and polling firms in Washington D.C. An examination of the following chart reveals that at the beginning in 1979 60% of respondents said they had a "great deal" or "quite a lot" (as opposed to "some" or "very little") trust in American banks. By 2012 this confidence had fallen to a record low of 21%.³

Figure 2: Confidence in Banks between 1979 and 2012

Source: <http://www.gallup.com/poll/155357/americans-confidence-banks-falls-record-low.aspx>



At this point a first brief summary can already be made: obviously there is a connection between the illegal activities of banks and their fading public reputation. Thus, the steepest fall in trust accompanies the financial crisis. One clue is the Occupy movement, which in 2011 was characterized by protest against the global financial system. Further evidence lies in Ernst & Young's survey of 28,500 bank customers worldwide about the quality of banks, which revealed the following primary reasons for the loss of trust in the banking sector: disaffection with the practice and level of

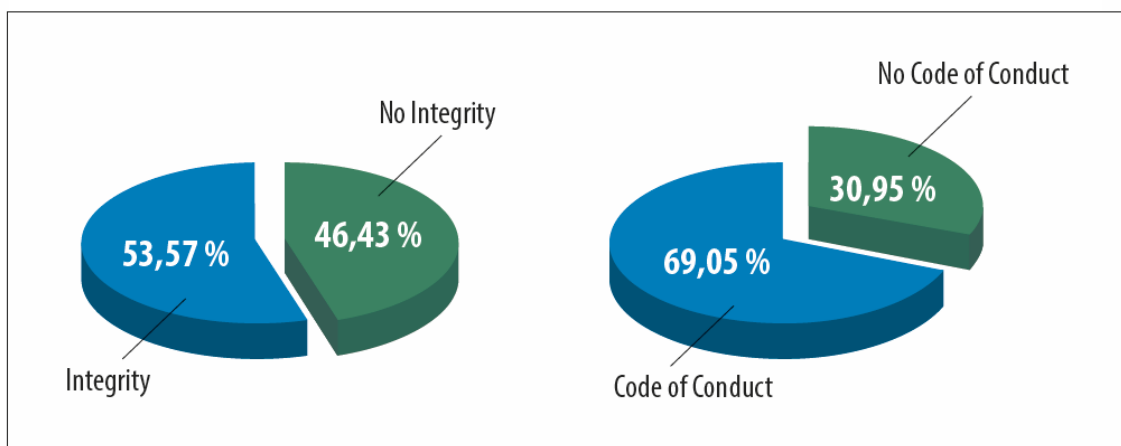
³ See: <http://www.gallup.com/poll/155357/americans-confidence-banks-falls-record-low.aspx>

bonus payments (56%), macroeconomic results of the financial crisis (55%), and poor quality of consulting by banking houses and their staff (42%).⁴

In Germany, the economic and financial daily *Handelsblatt* reported shareholder dissatisfaction with *Commerzbank* in May 2012. Even though the bank had made no dividend payments, it agreed to raise the salary of the CEO.⁵ And it emerged in December 2012 that a large-scale raid had been conducted at the head office of Deutsche Bank to find evidence for money laundering and tax fraud.⁶

This is just a sample illustrating the dimensions of illegal activity in the banking sector. Unquestionably these are not petty matters. The next step, however, in developing the *raison d'être* for this thesis is to look at the banks' point of view. Are they aware of their behavior and, more importantly, have they set any behavioral rules or guidelines? A further investigation by the author in 2013 sought to determine whether the banks had learnt from their bad recent experiences. The following chart shows results for 84 parent banks:

Figure 3: Percentage of Bank Statements concerned with Integrity and Code of Conduct in 2013
Source: Own figure



A Code of Conduct is an instrument used to express practical behavioral guidelines for a company or a bank. The expressions “Code of Conduct” or “Code of Ethics” represent a formal written compilation of moral standards of behavior in conformity

⁴ Cf. http://www.focus.de/finanzen/banken/eine-krise-nach-der-anderen-vertrauen-der-kunden-in-die-bankenbranche-schwindet_aid_772497.html.

⁵ Cf. <http://www.handelsblatt.com/unternehmen/banken/commerzbank-aktionaere-verlieren-die-geduld-mit-blessing/6663674.html>.

⁶ Cf. <http://www.n-tv.de/wirtschaft/Auch-Fitschen-ist-auf-dem-Radar-article9758586.html>.

with the corporate business culture that is obligatory on all company employees.⁷ Raiborn and Payne (1990) reckon that the numerous scandals affecting companies require a complete modernization of corporate management standards. Companies should draw up binding "Codes of Conduct"⁸, and endeavor to enhance behavioral standards by conducting seminars, opinion polls and courses of instruction. Some of these restructuring measures have been stimulated by pressure from outside, while others are based on the fact that entrepreneurs are becoming increasingly aware of their social responsibility.⁹ However, since the requirements of a Code of Conduct are highly ethical, their standards have to be implemented by members of civil society rather than by the companies themselves.¹⁰

Paine (1994) appeals to managers to underpin the ethics of organizations because they are the instruments necessary to make the company's business relationships and reputation generate success.¹¹ Moreover she shows that everyday strategies of integrity prevent violations of the ethical sense of other individuals and hence simplify and foster the work flow.¹² Paine (1994) distinguishes between compliance and integrity, defining compliance as conformity with the laws normalized by the state, and integrity as individual self-control, which she sees as much more effective. Integrity guarantees an adequate working atmosphere, supports ethical conformity, and conveys the feeling of shared responsibility for each other among company employees, as well as responsibility for the company itself.¹³

Verschoor (1998) analyzed the Code of Conduct of 500 U.S. companies in connection with their performance. Of these companies, 26.8% affirmed ethically correct behavior in conformity with accepted standards. In his study he established a significant positive relation between adherence to a "Code of Conduct" and company performance.¹⁴

⁷ Cf. Schwartz (2001), p. 389.

⁸ Cf. Raiborn and Payne (1990), p. 879.

⁹ Cf. Raiborn and Payne (1990), p. 881.

¹⁰ Cf. Raiborn and Payne (1990), p. 880.

¹¹ Cf. Paine (1994), p. 106.

¹² Cf. Paine (1994), p. 107.

¹³ Cf. Paine (1994), p. 111.

¹⁴ Cf. Verschoor (1998), p. 1509.

Using a regression analysis based on the CV Index, Donker et al. (2008) analyzed the importance of ethical values on performance.¹⁵ They found a significant positive relation between these two variables and concluded that companies should make greater efforts to establish the relevant values in their practical business processes.¹⁶

On the basis of these findings the significant role of the Code of Conduct seems obvious. The next step was to check bank homepages for the existence of such a Code. A further check would seek to determine the extent to which the spoken word was followed by action, this being a generally accepted test of integrity proposed in this instance by Jensen (2009) – the well-known Harvard professor who developed the principal-agent theory – who calls it “[...] honoring one’s word [...]”.¹⁷ In correlation with illegal activities it would further be interesting to see whether banks considered the issue of integrity as one of their rules. Here the results were surprising: 30.95% of the 84 banks surveyed have no Code of Conduct and 46.43% do not mention the word “integrity” either in their Code of Conduct or elsewhere on their homepage. These facts led the present author to investigate the influence of behavioral integrity in the banking sector in greater detail.

1.2 Aims and Contributions

The literature shows the development in scientific economics from an exclusive focus on the analysis of hard facts like ratios and financial data to a broader perspective that includes the investigation of soft facts, e.g. in the fields of behavioral finance or corporate governance. These soft facts are intimately connected with the complexity of measuring the material: moral qualities – or so-called soft skills – like reputation and integrity.

The focus of this thesis is, then, on two types of immaterial value: reputation and integrity. Several studies have already shown the importance of a company’s reputation, and a few also provide initial results for integrity. The aim of the present

¹⁵ The CV Index contains enterprise values and among these integrity.

¹⁶ Cf. Donker et al. (2008), p. 536.

¹⁷ Erhard et al. (2010), p. 3.

project is to determine whether, and if so how, the bond market perceives and values these two soft skills.

To achieve this target the objects (i.e. values) in question must be measured. In this thesis, reputation will initially be measured by the Fortune Most Admired Score, applied to underwriters. This will check whether the U.S. bond market esteems a bank's reputation, and how strongly it does so. Since the Fortune Most Admired Score is already established in the field of economics as a measure of reputation, it will be used here to review Andres et al. (2014), who use market share as a measure of a bank's reputation in the same market.

A further aim of this thesis is to find new variables to measure integrity and analyzing its impact on bond performance and company's costs. In detail the variables proposed for this purpose are:

1. Restatement of operating results
2. Settlement payments
3. Money-laundering
4. Corruption and bribery
5. Class action lawsuits
6. Embezzlement and Misappropriation
7. Misuse

Implementation of the first variable, restatements of operating results, follows several authors who have already used this proxy to measure integrity.¹⁸ The remaining seven variables are newly created and have not yet, so far as the present author is aware, been used as proxies for integrity. This thesis is, therefore, the first to measure integrity via settlement payments, money-laundering, corruption and bribery, class action lawsuits, embezzlement and misappropriation, misuse and regulatory enforcements and measure its influence on bond performance and company's costs. This represents the original research contribution of this study.

Using the Fortune Most Admired Score and the variables for integrity the thesis aims to demonstrate a correlation between ethical behavior, in the form of integrity and a corresponding high reputation, and a company's costs and performance.

¹⁸ Cf. Graham et al. (2007); Gaa (2007); Cao et al. (2012); Wang et al. (2013).

The measurement process applied to this matter entails logit and OLS regression analysis for both reputation and integrity. The dependent variables are:

1. First rating action downgrade
2. Yield spread and gross spread.

Using a logit regression and first rating action downgrade as dependent variables enables identification of factors that decrease the likelihood of a downgrade as the next rating action. Hence, the impact of reputation and integrity on bond performance can be checked.

The two different dependent variables “yield spread” and “gross spread” and the ordinary least squared regression will be used to measure the impact of reputation and integrity on price. Yield spread represents a company’s costs and should rise if the market is aware of high reputation and integrity. Likewise banks with high reputation and integrity will demand higher fees as gross spreads.

All of these dependent variables have already been approved as high-grade parameters.¹⁹ The regression analysis is completed by the addition of many control variables that have shown a significant impact on the dependent variables in the past. No specific hypotheses are constructed for these variables, because the focus of the thesis is on the parameters of integrity and reputation. Nevertheless, reference is also made to the significant results of these control variables as reinforcement for the main thrust of the argument.

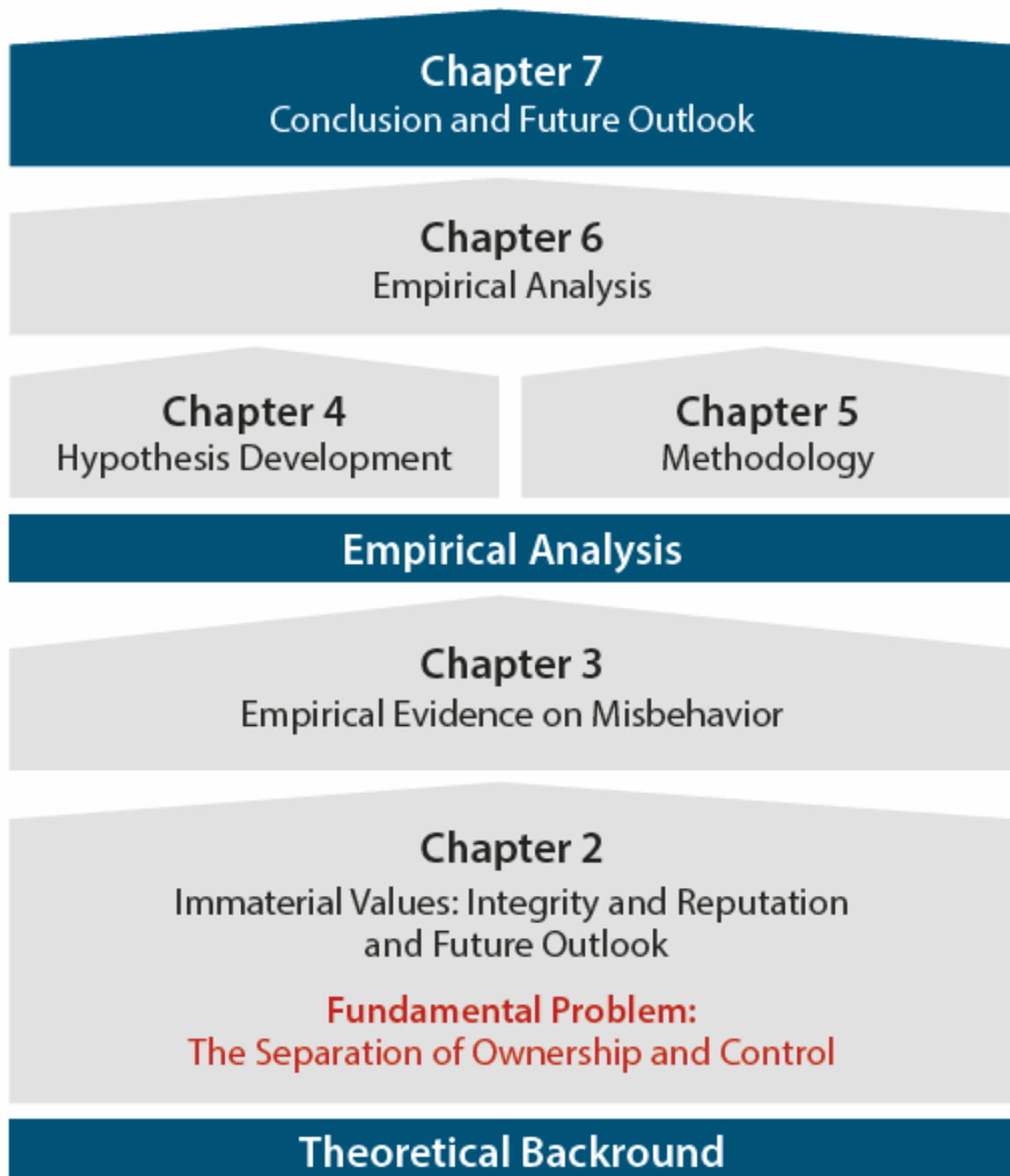
1.3 Structure of Thesis

The structure of this thesis is based on the motivation, aims and contributions pointed out above. In a first step the theoretical background will be illuminated by investigating the fundamental problem highlighted by the principal-agent theory: the separation of ownership and control that has led to the appearance of so many cases of illegal bank behavior. The evident impact of such behavior on a bank’s credibility makes it necessary to define the immaterial values of reputation and integrity, and to investigate their economic significance. This will also form part of Chapter 2. The

¹⁹ Cf. Andres et al. (2014); Fang (2005); Livingston and Miller (2000)

theoretical background will be complemented with a presentation of the empirical evidence of misbehavior in Chapter 3. An investigation of the way in which misbehavior on the one hand and the correlative immaterial assets on the other have been analyzed by economists is a precondition for developing hypotheses and methodology for the empirical analysis. This will form part of Chapters 4 and 5, leading immediately up to the empirical analysis. Finally the empirical analysis itself will constitute Chapter 6. Chapter 7 will present the conclusions of the investigation, together with a future outlook. The conceptual framework of the thesis is illustrated below in Fig. 4.

Figure 4: Conceptual Framework of the Thesis
Source: Own figure



2. Theoretical Background

This chapter presents the theoretical background for the empirical analysis. First, the fundamental problem of the separation of ownership and control will be explained in terms of the principal-agent theory. This theory is so important that its development, and the contributions made to it by different branches of economics, will be described in detail.

The next step will be to define as clearly as possible the two immaterial values 'integrity' and 'reputation' and determine their economic (and academic) significance. In this way light will be shed on the elemental role of both these values in the economy on the one hand and the relatively young field of scientific economics on the other. In both these respects the recent surge in misbehavior by banks and companies described in Chapter 1 will be taken into consideration. The problem of measuring integrity will be addressed and explicated in Chapter 3, which generally summarizes the empirical evidence of misbehavior. This chapter will close with *Fortune's* 'Most Admired Companies' scale, and the leading role of this scale in the scientific assessment of reputation will become clear.

2.1 The Principal-Agent Theory

The separation of ownership and control, as between the owner of a company and an appointed manager,²⁰ leads to problems of uncertainty and information asymmetry.²¹ This set of problems is described by the principal-agent theory. The agent's decisions have an impact on his own as well as on the principal's prosperity. But these decisions cannot always be controlled or monitored by the principal.²² In classical principal-agent conflict the owner suffers damage caused by the manager's or agent's activities.

The principles of the principal-agent theory were outlined by Adam Smith in 1776. Adam Smith was a Scottish philosopher and one of the pioneers of the science of economics. In his publication *An Inquiry into the Nature and Causes of the Wealth of Nations* he describes the principles of the separation of ownership and control that form part of the principal-agent theory. His presentation in that work of the South Sea Company's trading portfolio, with a volume of £3.8 million plus the Bank of England's holding of £10.8 million clarifies these principles. In this context he calls the directors of such huge companies "managers of other people's money", and continues that these managers perform their task with less attention than they pay to their own belongings.²³ An investigation of the literature shows that Adam Smith (1776) was one of the first to pinpoint the principal-agent relationship and the conflicts arising from it. However he does not go into the economic impacts of separating ownership from control.

Berle and Means (1932) picked up Smith's (1776) thoughts in 1932 in their publication *The modern Corporation and Private Property*.²⁴ The authors define the modern corporation as a company in which the property of many individuals is pooled and managed by a professional manager. Historically, the focus lies increasingly on the separation of ownership and control in large companies, and the consequences of that separation. According to Berle and Means (1932), the transfer of control over one's own property leads to a new definition of ownership that requires reformulation of the

²⁰ Cf. Adams (1776), p. 408.

²¹ Cf. Arrow (1986), p. 1183.

²² Cf. Arrow (1986), p. 1184.

²³ Cf. Smith (1776), p. 408.

²⁴ Cf. Berle and Means (1932), p. 345.

mutual conditions governing it.²⁵ They add that it is a precondition for the survival of society that the control units of large companies should comply not with their own needs but with the common good of society, and that every sector of society should therefore share in that control.²⁶ Berle and Means (1932) thus offer one of the first approaches to solve the problem of principal-agent structure, although the development of this term only followed decades later.

In the 1960s several economists (e.g. Radner (1964)²⁷ and Wilson (1968)²⁸) researched the behavior of decision makers acting under the condition of uncertainty and gaining payment dependent on their success. Wilson analyzed the interaction of different decision makers with diverse estimations of probability and risk tolerance with regard to uncertain events.²⁹ According to Wilson (1968), it is necessary, in order to make consistent decisions, that any group of decision makers have the same risk tolerance and caution in comparable scenarios.³⁰ Yet he fails to establish a relationship to the financial market except for a short example about an equity investment.³¹ Nevertheless his study shows that different risk tolerances among group participants who gain a collective income will produce conflict. This central idea can be transferred to the principal and agent and plays a role in the development of the principal-agent theory.

Even though the terms ‘principal’ and ‘agent’ made no appearance in Wilson’s (1968) publication, the 1970s saw an increase in their use (e.g. Stiglitz (1974)³² and Ross (1973)³³). Stephen A. Ross (1973) developed the economic agency theory from which the principal-agent theory derived.³⁴ Ross (1973) describes the relationship between principal and agent as one of the oldest and most codified of all social interactions. Examples of this relationship are universal and nearly all contractual agreements, like the relationship between employer and employee or state and governed, contain elements of it.³⁵ In his study Ross (1973) aims to determine the optimal scale of fees between principal and agent by maximizing the utility functions of principal and agent.

²⁵ Cf. Berle and Means (1932), p. 2.

²⁶ Cf. Berle and Means (1932), p. 2.

²⁷ Cf. Radner (1964), p. 31.

²⁸ Cf. Wilson (1968), p.119.

²⁹ Cf. Wilson (1968), p. 120.

³⁰ Cf. Wilson (1968), p. 131.

³¹ Cf. Wilson (1968), p. 130-131.

³² Cf. Stiglitz (1974), p.219.

³³ Cf. Ross (1973), p. 134.

³⁴ Cf. Jensen (1983), p. 334.

³⁵ Cf. Ross (1973), p. 134.

He describes payment of the agent in accordance with his achievement as an effective construct. If the agent behaves exactly in the principal's interests, the principal has the highest benefit. With proportionate remuneration, the agent's benefit will also be maximized. So, following the principal's instructions is the best solution for both parties. Since the principal has no certainty about the agent's behavior Ross (1973) mentions the question of instituting a monitoring process. On the one hand, such a monitoring process would be helpful, but on the other hand it is problematic because it is not economically cost-efficient.³⁶

Contemporaneous with Ross's (1974) study Mitnick (1973) published his approach to the institutional agency theory. It is less quoted although, like Ross (1973), it shows structures of the principal-agent relationship and should, therefore, at least be mentioned here.³⁷

One of the most meaningful studies of the principal-agent theory in the field of finance is the 1976 publication by Jensen and Meckling (1976), who transfer all the ideas contributed so far concerning the agency theory to the financial sector and, in doing so, define the term 'agency costs'.³⁸ Based on their findings the two authors define the term 'company' in a new way, and show how shareholder value can be raised despite the payment of agency costs.³⁹ The importance of this study demands that its results be expounded in some detail.

Jensen and Meckling (1976) define agency costs as:

1. Monitoring
2. Bonding expenditures
3. Residual costs⁴⁰

Monitoring costs have to be paid by the principal to control the agent. On top of that, the principal will in most cases spend even more on committing (bonding) the agent to himself. Another instrument lies in the imposition of an obligation of confidentiality. Residual costs are defined as the difference between the hypothetically best solution in

³⁶ Cf. Ross (1974), p. 135.

³⁷ Cf. Mitnick (1973), p. 1.

³⁸ These are the costs the principal has to pay when hiring an agent.

³⁹ Cf. Jensen and Meckling (1976), p. 1.

⁴⁰ Cf. Jensen and Meckling (1976), p. 6.

the case of complete information and the actually realized solution.⁴¹ Agency costs are part of the agency theory as developed by Wilson (1968) and Ross (1973), i.e. as the relationship between applicant and contractor. In fact Jensen and Meckling (1976) distribute agency costs more accurately into three segments, whereas Ross primarily focuses on the principal's monitoring costs.

Jensen and Meckling (1976) acknowledge the fact that the agency problem had until then focused on the issue of motivating an agent to maximize the principal's wealth. But this problem can occur in every organization and form of cooperation, such as universities, agencies, offices and unions. The authors distinguish their approach from earlier studies which focused on normative aspects of agency theory,⁴² whereas their approach expresses the formal derivation of the optimal contractual relationship motivating the agent in a way that leads to a maximization of the principal's wealth.⁴³ Among earlier approaches are attempts to interpret existing contracts, as well as investigations of divergence from optimal status, instead of forming an optimal contract.⁴⁴

Other academic economists adopted Jensen and Meckling's (1976) interpretation of the modern company. Fama (1980) picks it up and develops it.⁴⁵ He defines a company as a team whose members are motivated by self-interest, but at the same time accept that the survival of each individual in the team depends on the survival of the whole team in competition with other teams. In classical theory the agent is the entrepreneur-manager who at the same time bears the residual risk. Fama (1980) criticizes the trend of the literature of the time to separate the manager from the shareholder. Thus he disagrees with the theory of property rights as set up by Jensen and Meckling (1976). Summing up, his main thesis says that the separation of share ownership from control must be accepted as an efficient type of economic organization. Hence, the owner's tasks should be treated as separate factors in a group of contracts that taken together represent the company.⁴⁶

⁴¹ Cf. Jensen and Meckling (1976), p. 6.

⁴² Jensen clarified the terms 'positive' and 'normative' theory in 1983. The results will be pointed out later.

⁴³ Cf. Stiglitz (1974), p. 219.

⁴⁴ Cf. Jensen and Meckling (1976), p.6-7.

⁴⁵ Cf. Fama (1980), p. 289.

⁴⁶ Cf. Fama (1980), p. 289.

Three years later Hölmstrom (1979) picked up the idea of the principal-agent-relationship, linking the expressions ‘moral hazard’ and ‘information asymmetry’ to it. The first term had been coined by Arrow in 1963 and dealt with the tendency to take greater risks if an insurance to cover the risk has been concluded beforehand.⁴⁷ Hölmstrom (1979) adapted this concept to the principal-agent-relationship. After the contract has been concluded the agent can change his behavior. Hölmstrom (1979) explains that this subsequent hidden change in behavior is difficult to regulate by contract. One way is to increase investment in the agent’s monitoring. The information gained might be included in later contracts. Simple scenarios make a complete monitoring of the agent possible and, furthermore, the optimal principal-agent relationship to maximize wealth can be reached by contracts that punish dysfunctional behavior on the part of the agent. In contrast, complex scenarios are characterized by the high costs and enormous effort of monitoring.⁴⁸ The author adds that alternative information systems like cost accounting can help optimize contracts. In reality the principal will always have incomplete information about the agent and his actions before closing the contract. This can only be remedied by monitoring over time.⁴⁹

Hölmstrom (1979) pinpointed a gap in research resulting from the fact that the models dealing with the principal-agent-relationship had until then only considered short-term effects. Multi-period long-term monitoring had not been undertaken.⁵⁰ Fama’s (1980) model had a single-period character, but in contrast to Jensen and Meckling (1976) he included the signaling effect of the agent’s behavior on labor and capital markets.⁵¹

It was Fama’s (1980) idea that managers provide a company with their human capital, and that the future success or failure of managerial decisions has an impact on the company’s capital market value. Company reputation and management remuneration are inextricably linked as parts of that corporate value.⁵² Fama (1980) investigated how signals from the labor market, as well as from the capital market, can discipline managers to counteract the typical principal-agent problem. He came to the conclusion that internal information systems at top management level represent a good counter to

⁴⁷ Cf. Arrow (1963), p. 943-945.

⁴⁸ Cf. Hölmstrom (1979), p. 74.

⁴⁹ Cf. Hölmstrom (1979), p. 90.

⁵⁰ Cf. Hölmstrom (1979), p. 91.

⁵¹ Cf. Fama (1980), p. 291.

⁵² Cf. Fama (1980), p. 291.

middle management opportunism – after all, top management will be criticized first if the capital market sends negative signals. In due course this will affect the labor market and, finally, the top-manager's own reputation. One can, therefore, expect top-managers to be interested in maximizing company wealth to prevent such negative impacts.⁵³ Fama (1980) concludes that internal information systems such as the board of directors are suitable for reducing problems arising from the principal-agent relationship. This matches Hölmstrom's (1979) ideas. Fama (1980) maintains that real ownership structure is irrelevant: it is the pressure on the agent from capital markets and labor markets that makes him act in the shareholders' and/or principal's interests, thus enhancing the possibility of the company's survival.⁵⁴ Fama's (1980) approach to solving the problematic relationship between principal and agent reverts in this way to an analysis of the role of capital and labor markets.

Reviewing earlier studies in the context of the principal-agent relationship, Hölmstrom (1979) complained that all of them were based on single observation periods. This changed in 1981, when Radner (1981) investigated multiple-period models in which conditions over time remained constant.⁵⁵ Lambert was in line with Radner's (1981) model, which implemented strategies containing an epsilon-equilibrium.⁵⁶⁵⁷ Lambert (1983), however, investigated the role of long-term contracts and how they reduce the problem of moral hazard.⁵⁸ Since the agent's compensation in the second period depends on his behavior in the first period, the principal has the opportunity to diminish his uncertainty by analyzing the agent's performance.⁵⁹ He shows that the agent has to make decisions about future investments. An investment today can reduce success in the current period but raise it in the following period. So it is important to record in the contract between principal and agent whether the agent makes short-term or long-term decisions. In this way the agent's motivation can be sustained through several periods.⁶⁰

⁵³ Cf. Fama (1980), p. 292.

⁵⁴ Cf. Fama (1980), p. 294.

⁵⁵ Cf. Radner (1981), p. 31.

⁵⁶ Epsilon equilibrium is an attenuated version of Nash Equilibrium. Participants have a small possibility of changing their behavior.

⁵⁷ Cf. Radner (1981), p. 31-33.

⁵⁸ Cf. Lambert (1983), p. 441.

⁵⁹ Cf. Lambert (1983), p. 441.

⁶⁰ Cf. Lambert (1983), p. 451.

Summing up: Studies in the 1980s offered some approaches to reduce the problem of the principal-agent relationship – e.g. internal information systems by Fama (1980), or long-term contracts by Lambert (1983)– and the point of view changed in that decade from single period to multiple-period observation. Yet, the term principal-agent-theory was coined only in 1983 – by Jensen. According to Jensen and Meckling’s 1976 study, agency theory can be subdivided into normative and positive approaches: normative theory deals with the determination of optimal contracts, which it aims simply to structure. Jensen (1983) gives the example of general price level accounting, where normative theory asks how changes in price can be implemented in reports. In contrast, positive theory deals with the impact of existing contracts: its purpose, therefore, is explanatory. Taking the example above, positive theory asks how existing accounting influences corporate value.⁶¹ Jensen (1983) describes himself as a representative of positive theory;⁶² in his 1983 publication he uses Ross (1973) and Hölmstrom’s (1979) term ‘principal-agent’ for the normative approach.⁶³

In 1986 Arrow published his study containing terms which had been adopted in educational books such as ‘hidden action’ and ‘hidden information’. The issue of hidden actions had previously been investigated by Ross in 1973 but Arrow (1986) formed the terms as they are used today. He describes hidden actions as the agent’s activity. It is difficult for the principal to observe the real thrust of the agent’s efforts. Hidden information occurs in situations in which the agent has better information about the company and its processes than the principal. In this scenario the latter is no longer able to tell whether the agent is making use of his information wisely when making decisions.⁶⁴ Both of these problems are based on information asymmetry – or what is also called moral hazard⁶⁵ – and play an important role in economic theory.

These two issues are complemented by a third: ‘hidden characteristics’. Hence, there are overall three main problems of information asymmetry in principal-agent theory. ‘Hidden characteristics’ is part of the concept of adverse selection proposed by Akerlof in 1970. Every supplier and/or agent knows the quality of his products. A potential purchaser or employer can only determine the quality when he has made a purchase.

⁶¹ Cf. Jensen (1983), p. 320.

⁶² Cf. Jensen (1983), p. 334.

⁶³ Cf. Jensen (1983), p. 334.

⁶⁴ Cf. Arrow (1986), p. 1184-1185.

⁶⁵ For more information about moral hazard see Arrow (1963).

This applies to the principal-agent-relationship as well as to products: in this case the agent's product is his commitment to work.⁶⁶

The core terms of the principal-agent-theory have now finally been assigned to their sources in economic theory. In doing so light has been shed on the development of the theory from its origins in the separation of ownership and control, followed by the behavior of groups gaining collective income, and leading to the distinct field of economics that deals with problems of moral hazard and adverse selection. In conclusion, it remains only to outline the contemporary impact of the principal-agent theory in the field of economics.

The basic principal-agent-problem is the reason why corporate governance is necessary. Good corporate governance will choose the most talented managers and hold them responsible to shareholders.⁶⁷ Corporate governance includes the question how investors can ensure earnings on their employed capital.⁶⁸ A number of economists deal with this issue.⁶⁹ Two different methods have been developed to reduce the fundamental problem of the principal-agent relationship: on the one hand mechanisms initiated by the company itself ('internal governance'); on the other mechanisms affecting the company from outside ('external governance').

The board of directors and management are an internal mechanism⁷⁰ One way in which they can reduce the principal-agent problem is by adding payment incentives for managers in the contractual terms and conditions.⁷¹ Another way is by replacing equity with debt capital.⁷² This reduces the level of dividend payments in relation to interest to creditors. And interest *must* be paid whereas dividends *can* be paid. As fixed costs have to be paid, they represent an incentive for managers to perform efficiently.⁷³

External mechanisms include, for example, regulation policies and buy-outs. Regulation policies force managers to publish their accounts and reports, and protect investors by giving them the right to participate in stockholders' meetings and elect the

⁶⁶ Cf. Akerlof (1970), p. 489-490.

⁶⁷ Cf. Tirole (2001), p. 1-2.

⁶⁸ Cf. Shleifer and Vishny (1997), p. 737.

⁶⁹ For detailed information see Gillian(2006), Tirole (2001), Denis (2001), Denis and McConnell (2003).

⁷⁰ Cf. Hölmstrom (1979), p. 74.

⁷¹ Cf. Shleifer and Vishny (1997), p. 741.

⁷² Cf. Jensen (1986), p. 323.

⁷³ Cf. Deniz (2001), p. 205.

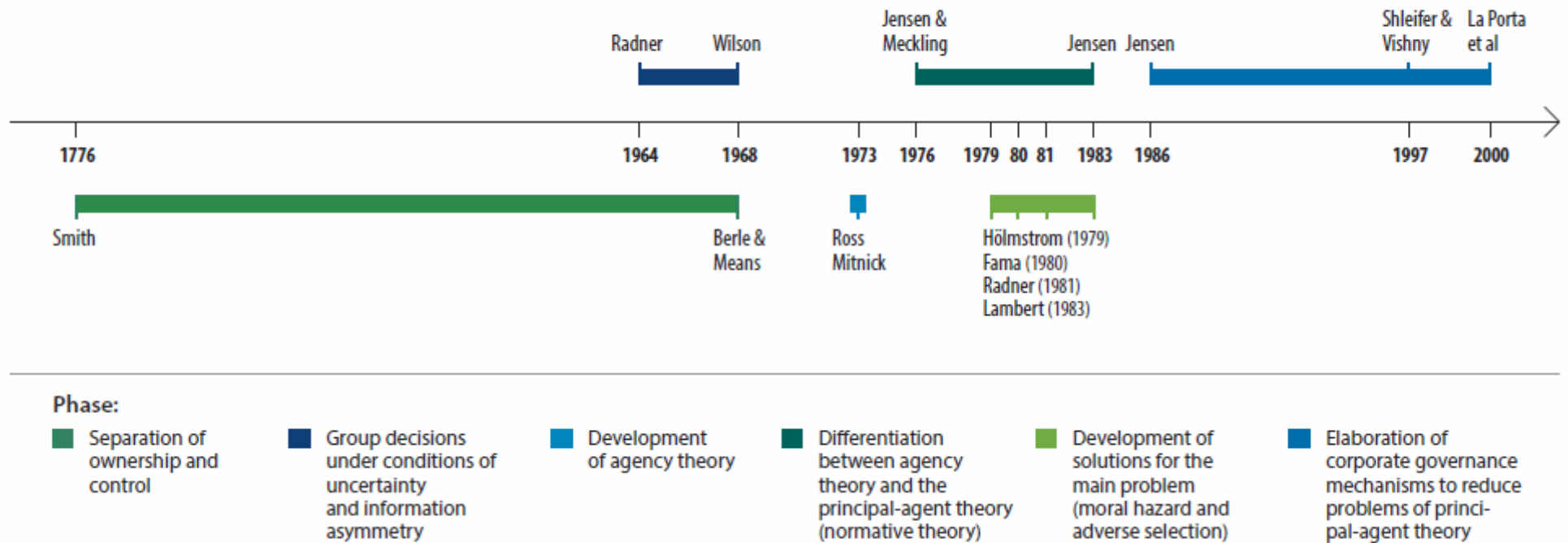
board of directors.⁷⁴ Buy-outs occur if the buyer thinks that company profits and value will rise under new management. Theoretically the old management will be anxious to save its own position by maximizing performance.⁷⁵

This thesis is based on the fundamental problem of the separation of ownership and control, which is connected with the principal-agent-theory. Therefore it is necessary to understand the development of the problem and its details. In order to clarify this, a general overview is provided in the following illustration, which is intended as a complement to the continuous text.

⁷⁴ Cf. La Porta et al. (2000), p. 3-6.

⁷⁵ Cf. Jensen and Ruback (1983), p. 29.

Figure 5: The Development of the Principal-Agent-Theory over Time: An Overview
 Source: Own figure



2.2 Integrity and Reputation as Intangible Assets of Banks

The following two chapters will give an overview of current definitions of integrity and reputation and outline the approaches that will form the basis for the empirical analysis presented later in this thesis. It is important to define these two immaterial values and show the role they play in the field of economics before addressing the problem of measuring them.

Since there is no established measurement for integrity, the analytic section of the thesis will have to determine a way of making integrity measurable. With regard to reputation, however, *Fortune*'s 'Most Admired Companies' score provides an outstanding scale that has been used profitably in the literature.⁷⁶ This section of the thesis will, therefore, conclude with an explanation and evaluation of the *Fortune* score.

2.2.1 The Definition of Integrity and its Role as an Immaterial Asset in the Field of Economics

The meaning of the word integrity might not be obvious at once; moreover it is necessary to develop an interpretation that can generate appropriate variables in the empirical analysis. Audi and Murphy (2006) pointed out the lack of clarity in the word's meaning either in general or in the economic context.⁷⁷ The basic literature contains several variant definitions that will be introduced here.

The word's source lies in the Latin word *integritas* which means authenticity or intactness. Commonly accepted definitions are those of Paine (1997) and Solomon (1992).⁷⁸ Paine (1997) defines integrity as autonomy with respect to moral standards. Basically it consists of the characteristics of moral assiduousness, responsibility, commitment and uniformity or reliability.⁷⁹ Solomon (1992) interprets integrity as the

⁷⁶ e.g. Maug et al. (2013); Anginer et al. (2011). A full list is enclosed in the annex.

⁷⁷ Cf. Audi and Murphy (2006), p. 3

⁷⁸ Cf. Audi and Murphy, p. 7

⁷⁹ Cf. Paine (1997), p. 335

wholeness of a person or organization⁸⁰, and sees it as entailing not only individual independence and uniformity, but also loyalty, congeniality, cooperation, and reliability.⁸¹

Another approach comes from Dalla Costa (1998), who uses integrity and honesty as synonyms and declares that investigations in the field of integrity only consider the honesty of persons or companies with regard to specific data sets.⁸² DeGeorge (1992), on the other hand, uses moral/ethical behavior and integrity as synonyms and adds that the only difference between these words is that integrity has less judgmental connotations than moral or ethical.⁸³ In 1999 Simons developed a definition of integrity for company management. For him integrity represents the perceived concord between the values communicated outwards and those really practiced. The level of management integrity inside a company depends on the conformity between communicated and implemented values as perceived by employees.⁸⁴ Simons (1999) emphasizes that integrity can operate on different levels of abstraction. Persons as well as organizations such as companies can have integrity.⁸⁵ Heres et al. (2011) define integrity as actions that accord with relevant moral values, norms and rules.⁸⁷ These examples from the relevant literature indicate the range and diversity of current definitions of integrity, which constitute an initial stumbling block to any investigation of the impact of integrity.⁸⁸

Erhard et al (2009) seize on this suggestion and develop a positive model of integrity to solve the problem. Their solution contains the terms moral and ethical and is empirically verifiable.⁸⁹ It approves Simons' (1999) statements insofar as integrity stands for concord between words and actions. Beyond this, they add that integrity is

⁸⁰ Cf. Solomon (1992), p. 109

⁸¹ Cf. Solomon (1992), p. 109

⁸² Cf. Dalla Costa (1998), p. 191

⁸³ Cf. DeGeorge (1992), p. 20

⁸⁴ Cf. Simons (1999), p. 90

⁸⁵ Simons interprets a high level of integrity as a necessity for a management for a transformational leadership inside a company. Transformational leadership stands for a charismatic way of leadership, individual consideration of their needs and an impulse to motivate dealing with new challenges in an above-average way. (Cf. Simons (1999), p. 91)

⁸⁶ Cf. Simons (1999), p. 101

⁸⁷ Cf. Heres et al. (2011), p. 387

⁸⁸ Cf. Audi and Murphy (2006), p. 8

⁸⁹ Cf. Erhard et al. (2009), p.2

possible even if one cannot keep one's word.⁹⁰ This positive model will be explained in detail later. The focus will lie on the behavior of banks and companies, as banks in particular are the object of investigation in this thesis.⁹¹ Nevertheless, the explanations are readily transferable to personal integrity.

Erhard et al. (2009) define integrity as the "state or condition of being whole, complete, unbroken, unimpaired, sound, [...in] perfect condition"⁹² Whether a company meets this definition depends on its words and statements. A company has integrity if its words have integrity.⁹³ A company's word is on the one hand the statements of the members of the company to each other; on the other hand it is constituted by the statements given by the company to its stakeholders.⁹⁴

A company has integrity if its words have integrity, as defined by Erhard et al. (2009). This is the case when the company honors its word.⁹⁵ It is reasonable to examine the issues and conditions that define a company's word and what it means in this context to honor one's word. Erhard et al. (2009) see a company's word as entailing six different issues:

1. Statements about what will and will not be done.
2. Knowledge about what will and will not be done.
3. The stakeholder's expectations of the company. Essentially these expectations are unexpressed demands to the company.
4. The company's statements about facts, circumstances, and so on.
5. What a company stands for.
6. Expectations and suggestions of the group or the state to which the company belongs and from whose membership it benefits. These are especially moral concepts, ethical ideas and governmental stipulations that determine right and wrong within a group or state.⁹⁶

⁹⁰ Cf. Erhard et al. (2009), p.27-28

⁹¹ Banks and companies will be seen as the same, as this makes no difference to the aim of the empirical analysis.

⁹² Cf. Erhard et al. (2009), p.2

⁹³ Cf. Erhard and Jensen (2013), p.14

⁹⁴ Cf. Erhard et al. (2009), p.2

⁹⁵ Cf. Erhard and Jensen (2013), p.15

⁹⁶ Cf. Erhard and Jensen (2013),p.15

Corporate integrity demands, in this view, that a company's word has integrity in all of these six categories. At this point there are relations to Heres et al. (2011), who bring forward the argument that an organization behaves with integrity when integrity exists not only inside an organization, but also toward external actors, and in adherence to relevant moral norms and values – e.g. social rules and laws.⁹⁷

A company will be deemed to possess integrity when it honors its word, which is possible on the one hand by keeping and fulfilling announced promises in due time. On the other hand it can keep its word even if fulfillment becomes impossible. In this case it has to inform the aggrieved party that the promise cannot be fulfilled in due time as soon as this becomes evident. Furthermore, it is its duty to make a statement about the subsequent point of time when the promise will be fulfilled. At the same time it has to bear all the damage caused by inability to keep its word.⁹⁸

Summarizing these results so far might lead to the question why integrity plays such an important role for a company, or conversely why violations of integrity have a negative impact on the company. Erhard and Jensen explain in this context that it does not depend on whether misbehavior becomes public knowledge among stakeholders or not. They maintain that it is not merely a matter of external individuals or companies being affected by the company's violations of integrity⁹⁹, because it is not the case that the aggrieved party's interests alone are violated as long as the violation does not become public. The authors argue that the company which acts without integrity always suffers from its own violations, whether these actions become public or not.¹⁰⁰

It is easier to follow the argument by if one considers the connection between integrity and added value postulated by Erhard et al. In their model integrity represents the necessary and sufficient condition for a company's operational readiness. Companies taking integrity as a guideline can achieve their desired aim. A company's operational readiness on the other hand is a necessary but not a sufficient condition for performance. Therefore a company in breach of integrity will not achieve operational readiness or reach maximum possible performance. Diminishing integrity on the part of a company is associated with a drop in maximum possible performance, and vice

⁹⁷ Cf. Heres et al. (2011), p. 387-388

⁹⁸ Cf. Erhard and Jensen (2013), p. 15

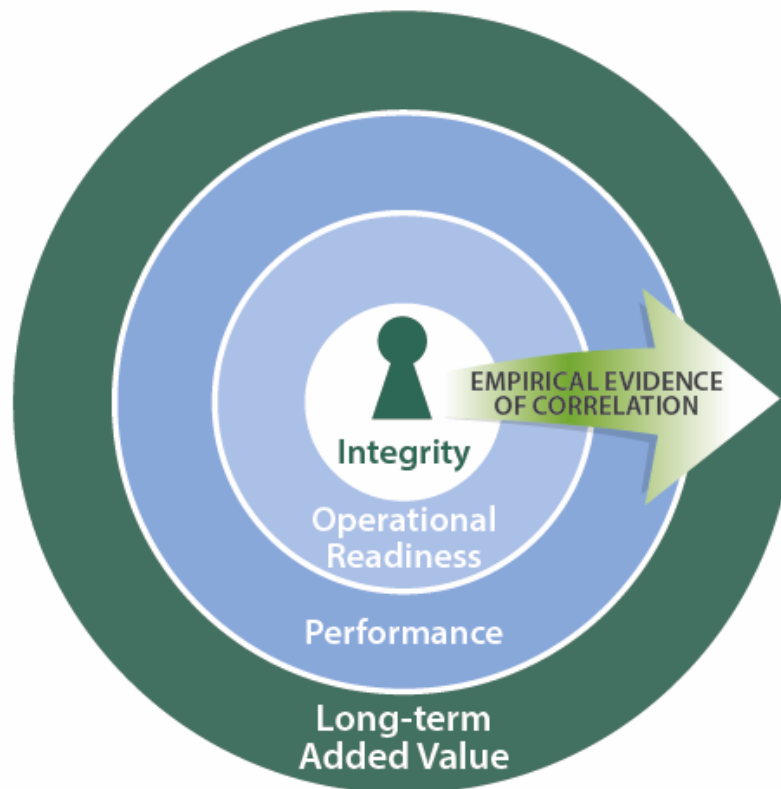
⁹⁹ Cf. Erhard and Jensen (2013), p. 8

¹⁰⁰ Cf. Erhard and Jensen (2013), p. 15

versa. Integrity is required even if it is insufficient for long-term added value.¹⁰¹ Thus, integrity becomes just as important a factor for corporate productivity as, for example, R&D.¹⁰²

This new view of integrity as a positive phenomenon leads to an important new insight in the field of business finance. The hypothesis that long-term added value requires integrity inside a company can be investigated empirically. Integrity becomes an empirically verifiable phenomenon which can be illustrated as follows:¹⁰³

Figure 6: Integrity as an Empirically Verifiable Phenomenon
Source: Own figure



To date only a few empirical financial studies have examined the impact of corporate values¹⁰⁴ and individual manager abilities on company costs and/or performance.¹⁰⁵

¹⁰¹ Cf. Erhard and Jensen (2013), p. 12

¹⁰² Cf. Erhard et al. (2009), p. 17

¹⁰³ Cf. Erhard and Jensen (2013), p. 13

¹⁰⁴ Corporate values in this context represent immaterial values such as reputation and integrity.

¹⁰⁵ Cf. Guiso et al. (2012), p. 19; Bamber et al. (2010), p. 1131

This is surprising, because corporate values and manager abilities offer serious approaches to solving the problem of principal-agent theory expounded above.¹⁰⁶ The conclusion of a comprehensive contract between shareholders (representing the principal) and manager (representing the agent) is impossible in a company due to the unpredictable events to which every company is subject. In a situation in which the agent's and the principal's aims fail to coincide, the agent can behave in an opportunistic way because of his superior knowledge. This opportunistic behavior nullifies the possibility of a first best solution and causes agency costs that lead to inefficiency.¹⁰⁷ Inefficiency of this kind could be reduced by values like integrity.¹⁰⁸ If the manager of a company has integrity he will not act in an opportunistic way because – following Erhard et al. (2009) – integrity includes the attitude not to breach the principal's expectations.¹⁰⁹ This connection, however, requires additional empirical evidence.¹¹⁰

In general it is conspicuous that empirical financial studies distinguish between the categories of corporate values and manager's characteristics. The impact of both on the operating result is currently being investigated.

The literature dealing with the influence of management characteristics on financial performance can again be divided into two groups. The first disregards the reasons leading to a connection between an individual manager's characteristics and the influence of these on performance. The focus lies here on empirical evidence only.¹¹¹ The second approach takes the causes into consideration and presents the empirical results in each study as a function of transparent analysis characteristics such as the complexity of a CEO's network.¹¹²

The studies of Bertrand and Schoar (2003) and Bamber et al. (2010) can be assigned to the first of the two categories described. Bertrand and Schoar (2003) confirm in their empirical analysis that a manager's individual characteristics influence investment and financial policy, as well as company strategy. Unique differences within the

¹⁰⁶ Cf. Guiso et al. (2012), p. 19

¹⁰⁷ Cf. Jensen and Meckling (1976), p. 309

¹⁰⁸ Cf. Guiso et al. (2012), p. 19

¹⁰⁹ Cf. Erhard et al. (2009), p. 15

¹¹⁰ Cf. Guiso et al. (2012), p. 19

¹¹¹ Cf. Dikolli et al. (2013), p. 5

¹¹² Cf. Dikolli et al. (2013), p. 6

characteristics result in variations in leadership decisions. These differences in leadership decisions again produce variations in a company's performance.¹¹³

Bamber et al. (2010) set out to determine whether there is a connection between the individual characteristics of a manager and voluntary financial publications. They find a significant impact of a manager's career, age-bracket, military experience, and grade of degree on a company's voluntary publications. For example managers who have had military experience tend to release slightly improper information immediately, in contrast to those who have not had military experience.¹¹⁴

Studies by Chevallier/Ellison (1999), Schrand/Zechmann (2012) and Engelberg (2013) can be classified as considering the reasons for a connection – i.e. as belonging to the second group mentioned above.¹¹⁵ Chevallier/Ellison (1999) employ a regression analysis and find a significant correlation between a student's above average SAT scores¹¹⁶ acquired at the department where they took their first academic degree, and the risk-adjusted performance of the company.¹¹⁷ Schrand and Zechmann (2012) find a statistically significant negative relation between a manager's overconfidence and false information in restatements.¹¹⁸ Engelberg et al. (2013) show that managers with a bigger social network generate higher profits than those with a small social network.¹¹⁹

The quintessence of all these studies is that their assumptions are no longer based on the neoclassical theory of a homogeneous and perfectly substitutable manager.¹²⁰ Studies of the determinants of a company's capital structure show that few differences can be explained by 'hard' parameters such as market-to-book ratio, but studies of the impact of a manager's individual characteristics can close this gap.¹²¹

¹¹³ Cf. Bertrand and Schoar (2003), p. 1204-1205.

¹¹⁴ Cf. Bamber et al. (2010), p. 1156

¹¹⁵ Cf. Dikolli et al. (2013), p. 6

¹¹⁶ The SAT score represents the score achieved in an obligatory standard test for college admission in the U.S.

¹¹⁷ Cf. Chevalier and Ellison (1999), p. 875.

¹¹⁸ Cf. Schrand and Zechmann (2012), p. 312

¹¹⁹ Cf. Engelberg et al. (2013), p. 79

¹²⁰ Cf. Bertrand and Schoar (2003), p. 1173.

¹²¹ Cf. Bertrand and Schoar (2003), p. 1170.

Hunton et al. (2011) and Feng et al. (2011) have analyzed the connection between management integrity and performance without explicitly operationalizing integrity.¹²² Hunton et al. (2011) empirically investigated the correlation between the tone of a manager's language and business profits. The authors defined tone as the manager's attitude to implementing internal quality controls, ethical decision making, and meeting or outmatching the earnings hurdle rate, and they found a significant correlation.¹²³ Feng et al. (2011) surveyed the causes of CFO's accounting manipulations, which they interpreted as violations of integrity. In their result they state that CFOs were not being misled into violations of integrity by compensation-scheme-oriented incentive systems, but by pressure from the CEO.¹²⁴

Verschoor (1998), Donker et al. (2008) analyzed the coherence between corporate values and performance.¹²⁵ Verschoor's (1998) main result is that companies committing themselves to correct ethical behavior towards stakeholders demonstrate significantly higher financial performance than companies without such commitment.¹²⁶ Donker et al. (2008) examined the connection between corporate values in the Code of Conduct¹²⁷ and financial performance. Like Verschoor (1998), this investigation again shows that corporate values boost a company's financial performance.¹²⁸

Other studies proceed on the basis of the findings of Erhard et al. (2009) concerning integrity and performance. Taking Erhard's (2009) definition of integrity, Dikolli et al. (2013) have empirically investigated the connection between CEO integrity and company performance.¹²⁹ At this juncture they measure integrity by the number of reasoning conjunctions like "because" and "hence". This approach rests on the reflections of Erhard et al. (2009), who define explanations, excuses and justifications as a symptom for lack of behavioral integrity. Persons as well as organizations tend to avoid confrontation with the consequences of their behavior. Instead they contrive excuses for negative consequences. This is why a high level of conjunctions in a

¹²² Cf. Dikolli et al. (2013), p. 20.

¹²³ Cf. Hunton et al. (2011), p. 1

¹²⁴ Cf. Feng et al. (2011), p. 21-36.

¹²⁵ Cf. Dikolli et al. (2013), p. 20

¹²⁶ Cf. Verschoor (1998), p. 1509-1510.

¹²⁷ The Code of Conduct has been quantified by the Corporate Value Index developed by the authors.

¹²⁸ Cf. Donker et al. (2008), p. 527-528.

¹²⁹ Cf. Dikolli et al. (2013), p. 1

CEO's statements can be interpreted as a low level of integrity, and vice versa.¹³⁰ After the operationalization of integrity the focus now lies on the influence of a CEO's integrity on the quality of RAP¹³¹ in the balance sheet. Dikolli et al. (2013) come to the conclusion that there is a positive connection between CEO integrity and the quality of RAP.¹³² The analysis consists of 16,637 observations representing 3583 companies between 1988 and 2002.¹³³ First the authors validate the chosen measurement of conjunctions by estimating the correlation of conjunctions with the stakeholder's perception of the CEO's integrity. An empirically significant negative correlation can be shown. This indicates that a rising level of conjunction use accords with a decreasing level of perception of the CEO's integrity among stakeholders.¹³⁴

Dikolli et al. (2013) could, therefore, validate their hypothesis, which prognosticated a correlation between the quality of RAP and the integrity of CEOs.¹³⁵ The authors measure RAP quality, using appropriate models to determine expected RAP over the five years before each point of observation.¹³⁶ The variable "quality of RAP" is defined as the standard deviation of the estimated and real RAP from $t=-5$ to $t=-1$. Thus, a high value variable stands for low RAP quality, because the standard deviation is high.¹³⁷ The correlation coefficient of RAP quality with the incidence of unexpected conjunctions in the shareholder report has a significant negative value. A CEO with low integrity is seen to use many conjunctions, and at the same time reveals low RAP quality.¹³⁸ To verify the result, the authors add the control variable "CEO's style of speech"; even then they can show a significant outcome with a correlation coefficient of 0.088 on a 0.01 level of significance.¹³⁹ In contrast the variable "Abilities of the CEO" has no influence on the measure of integrity used in this analysis.¹⁴⁰

¹³⁰ Cf. Dikolli et al. (2013), p. 2

¹³¹ RAP (risk-adjusted performance) stands for place-holders between a company's financial statements regarding the outlook of future cash flows.

¹³² Cf. Dikolli et al. (2013), p. 3-4.

¹³³ Cf. Dikolli et al. (2013), p. 16

¹³⁴ Cf. Dikolli et al. (2013), p. 12

¹³⁵ Cf. Dikolli et al. (2013), p. 18

¹³⁶ Details to the models can be found on Dikolli et al. (2013), p. 14-15.

¹³⁷ Cf. Dikolli et al. (2013), p. 15

¹³⁸ Cf. Dikolli et al., p. 18.

¹³⁹ Cf. Dikolli et al. (2013), p. 19

¹⁴⁰ Cf. Dikolli et al. (2013), p. 19.

Guiso et al. (2012) test a model that investigate the connection between integrity and the company's organizational structure and performance. For this they use a sample from the "Great Place to Work" institute which contains information of employees from 679 American companies between 2007 and 2011. The authors operationalize integrity through the employees' responses to the following statements, which express the level of accordance with their own situation in the company:

1. The management's actions match their statements.
2. The management's business behavior is honest and ethically correct.
3. You can count on the cooperation of other company employees.¹⁴¹

The empirical tests of coherence between integrity and performance refer to a subsample of 385 companies listed on the stock exchange, because the necessary financial ratios of those companies are known.¹⁴² Guiso et al. (2012) use an OLS regression analysis with Tobin's Q and return on sales (ROS) as the two dependent variables.¹⁴³ In the process the authors need to consider the problem of the halo effect which appears during the emergence of a carry-over in the process of data collection.¹⁴⁴ In this case the halo effect becomes evident in the strong significant correlation of employees' statements concerning integrity measurements. The correlation coefficient of employees' acceptance is positive.¹⁴⁵ The authors face the halo effect by implementing two control variables: employees' statements about job safety, and their sense of being able to be themselves when doing their job. These control variables are also affected by the halo effect, but they do not correlate with true company integrity.¹⁴⁶ The authors can show a significant positive connection between employees' perception of management integrity and Tobin's Q.

In the end the authors can confirm the positive model developed by Erhard et al. Regarding the coherence between integrity and a company's organizational structure, Guiso et al. (2012) find that companies listed on the stock exchange have difficulties

¹⁴¹ Cf. Guise et al. (2012), p. 1-3.

¹⁴² Cf. Guiso et al. (2012), p. 16.

¹⁴³ Guiso et al. count Tobin's Q as total assets minus shareholder equity plus market value of equity divided by total assets (Guiso et al. (2012), p. 25). ROS is counted in this study as net income divided by sales (Guiso et al. p. 24).

¹⁴⁴ Brown and Perry (1994) describe the halo effect elaborately as a critical matter between e.g. the financial performance and the Fortune Score. A company's good financial performance leads to the effect that the probability increases to gain a higher score. Hence distortions occur.

¹⁴⁵ Cf. Guiso et al. (2012), p. 13.

¹⁴⁶ Cf. Guiso et al. (2012), p. 15.

building a high level of integrity. On the other hand, companies led by the company's founder possess a higher level of integrity.¹⁴⁷

2.2.2 The Definition of Reputation and its Role as an Immaterial Asset in the Field of Economics

The other intangible asset that plays an essential role in this thesis is the reputation of a company or bank.¹⁴⁸ Disregarded in the past, the importance of reputation as an intangible asset for companies is now growing continuously; it is even occasionally characterized as a component of shareholder value.¹⁴⁹ In general reputation stands for the way outsiders value a name or quality of a product, person or organization in public.¹⁵⁰ To be more specific, a common definition of a company's reputation comes from Fombrun: "*A corporate reputation is a perceptual representation of a company's past action and future prospects that describes the firm's overall appeal to all of its key constituents when compared with other leading rivals.*"¹⁵¹ Reputation can be established by a company by the repetition of specific actions that are linked in a positive way with the company in public perception.¹⁵²

Through its influence on product quality, strategies, and perspectives, as well as career prospects and other characteristics readily comparable with competing companies, a good reputation has an immediate effect on stakeholders¹⁵³, enabling companies with a high reputation to acquire qualified employees more easily, get capital on cheaper conditions, and thus achieve higher product prices and lower acquisition costs.¹⁵⁴ A high reputation also boosts trust in the quality of a company's products and/or services, and hence leads to an increase in customer loyalty.¹⁵⁵ In this way it represents an elemental factor for sustainable competitiveness in a globalized economic world. On

¹⁴⁷ Guiso et al. (2012), p. 19.

¹⁴⁸ Subsequent observations and analyses are based on companies and banks. Although the focus of this thesis lies on the reputation of banks, differentiation is not necessary in this context.

¹⁴⁹ Cf. Srivastava et al. (1997), p. 62

¹⁵⁰ Cf. Schwaiger (2004), p. 48

¹⁵¹ Cf. Fombrun (1996), p. 72

¹⁵² Cf. Anginer et al. (2011), p. 1

¹⁵³ Cf. Fombrun and Shanley (1990), p. 233

¹⁵⁴ Cf. Cordeiro and Schwalbach (2000), p. 3

¹⁵⁵ Cf. Schwaiger (2004), p. 50

top of that a positive reputation lowers barriers to market entry and promotes competitive advantages.¹⁵⁶

That reputation influences corporate financial performance¹⁵⁷ has been shown by Dowling and Roberts (2002), who demonstrate that a high reputation creates the requirements for sustained high performance and profitability.¹⁵⁸ Other things being equal, a company's efficiency will, in other words, increase along with its reputation.¹⁵⁹ Investment decisions are also influenced:¹⁶⁰ companies with a high reputation can more easily enter capital markets, thus reducing capital costs.¹⁶¹ Anginer et al. (2011) show in their study that there is an inverse relation between a company's reputation and credit spreads of corporate bonds. An improvement in reputation indicates a significant reduction in capital costs.¹⁶² The study shows especially that both hard and soft information play an important role in the process of screening loan applicants, as well as in the determination of capital costs. The expression *hard information* stands for material values like creditworthiness, which represent debt redemption within the period prescribed; *soft information* represents e.g. immaterial values.¹⁶³ Soft information cannot be documented or verified.¹⁶⁴ It covers, for example, the lender's subjective appraisal concerning a manager's integrity and personality, as well as his awareness of the company's quality and innovative capacity.¹⁶⁵ It follows from Anginer's (2011) study that reputation plays an important role in the process of certification, and that building and maintaining a reputation is consequently advantageous for companies active in capital markets.

Due to asymmetrically incomplete financial market information, bond issuers will on the one hand tolerate high underwriters' fees, but on the other prefer to contact investment banks directly rather than hire underwriters who suffer from a lack of credibility.¹⁶⁶ Companies need capital on the market, whereas underwriters evaluate

¹⁵⁶ Cf. Schwaiger (2004), p. 47.

¹⁵⁷ e.g. see Eberl and Schwaiger (2005) or Dunbar and Schwalbach (2000).

¹⁵⁸ Cf. Dowling and Robert (2002), p. 1078.

¹⁵⁹ Cf. Schwaiger (2004), p. 50

¹⁶⁰ Cf. Srivastava et al. (1997), p. 63.

¹⁶¹ Cf. Schwaiger (2004), p. 50

¹⁶² Cf. Anginer et al. (2011), p. 24

¹⁶³ Cf. Anginer et al. (2011), p. 2 f.

¹⁶⁴ Cf. Anginer et al. (2011), p. 3

¹⁶⁵ Cf. Anginer et al. (2011), p. 3

¹⁶⁶ Cf. Chemmanur and Fulghieri (1994), p. 59 and Beatty/Ritter (1986), p. 214

issuers and their projects and pass on their assessment to potential investors.¹⁶⁷ A bank can lessen the asymmetrical incompleteness of information by mediating between the issuer and potential investors.¹⁶⁸ But investors cannot ascertain the intensity of strictness with which the investment bank applies standards and scales when assessing investments. Hence, investors refer to the bank's previous performance.¹⁶⁹ This explains why investment banks are anxious to conduct accurate screening and monitoring, lest bad performance damage their reputation.¹⁷⁰ Particularly famous banks are even more careful in their choice of firms as clients.¹⁷¹

Conversely, a bad reputation has negative consequences, as issuers are guided mainly by an underwriter's reputation and prefer to choose well-established names.¹⁷² Because their existence as well as their future income depend on their reputation, investment banks take pains to be continuously active on the financial market.¹⁷³

Transactions made by reputable banks present trustworthy and reliable signals¹⁷⁴ that put significant pressure on the process of certifying the quality of corporate financial figures, leading to the impression of a sustained development of investment income.¹⁷⁵ Conversely, companies with less well-established reputations will agree to pay higher fees for a reputable underwriter in order to lower the risk of a bad bond placement.¹⁷⁶

Moreover, using underwriters can reduce capital costs for the issuer.¹⁷⁷ The investment bank's reputation affects the issuing price and the offer price of bonds in both equity and debt capital funding.¹⁷⁸ Fang (2005) reveals that reputable investment banks earn lower credit spreads – and thus higher revenue – for their applicants in comparison with less reputable banks, but in exchange they demand higher fees.¹⁷⁹ Nevertheless the net yield is cost-effective for the issuer, because the advantage of lower capital

¹⁶⁷ Cf. Chemmanur and Fulghieri (1994), p. 58

¹⁶⁸ Cf. Fang (2005), p. 2729

¹⁶⁹ Cf. Chemmanur and Fulghieri (1994), p.58

¹⁷⁰ Cf. Gopalan et al. (2011), p. 2083

¹⁷¹ Cf. Flandreau et al. (2010), p.27

¹⁷² Cf. Chemmanur and Fulghieri (1994), p. 75

¹⁷³ Cf. Fang (2005), p. 2729.

¹⁷⁴ Cf. Bushman and Wittenberg-Moerman (2010), p. 1

¹⁷⁵ Cf. Bushman and Wittenberg-Moerman (2010), p. 35

¹⁷⁶ Cf. Andres et al. (2014), p. 3

¹⁷⁷ Cf. Fang (2005), p. 2729.

¹⁷⁸ Cf. Livingston and Miller (2000), p. 22

¹⁷⁹ Cf. Fang (2005), p. 2730

costs outweighs the bank's higher fees.¹⁸⁰ Besides, Andres et al. (2014) have shown that reputable underwriters can decrease credit spreads from high yield bonds by more than fifty basis points.¹⁸¹ This leads again to the finding that an issue with supported by a reputable investment bank is a profitable option for companies with low reputation and low creditworthiness. In contrast, companies with solid creditworthiness, a high awareness level and a long-term track record are able to attract investors for themselves and can therefore be active on the market directly.¹⁸² All in all, the reputation of both companies and underwriters represents an important factor with a significant impact on the capital market.

2.2.3 The *Fortune* Score as a Reputation Measure

Reputation is an intangible variable that plays an important role in the underwriting process of bond issues and hence also in the regression analysis conducted in this thesis. It is, therefore, essential at this point to explain the most common and accepted method used by economists to convert this intangible asset into a measurable value. However, before emphasizing its important role in economic theory, it is necessary to explain the characteristics of *Fortune*'s 'Most Admired Companies' score.

Every year in its March edition the economic magazine *Fortune* creates an annual ranking of the "World's Most Admired Companies" (WMAC). Subdivided into different industries, it is based on the two rankings "*Fortune* 1000" and "*Fortune* Global 500". These refer to the 1000 companies with the highest sales in America and the 500 with the highest sales in the world. The score is established through a survey conducted every year in October, in which executive managers, directors and analysts evaluate companies in their industry on the basis of nine criteria, each of which is classified on an eleven point scale. Zero points stand for bad and ten for excellent.¹⁸³

¹⁸⁰ Cf. Fang (2005), p. 2730.

¹⁸¹ Cf. Andres et al. (2011), p. 27 f.

¹⁸² Cf. Diamond (1989), p. 859

¹⁸³ The score, which is published by *Fortune* and called "World's Most Admired Companies" or "Global Most Admired Companies" is prepared in collaboration with HayGroup consulting and has been published annually since 1997.

The criteria are:

- (1) The ability to acquire, evolve and keep talented employees
- (2) Quality of management
- (3) Social responsibility to society and the economy
- (4) Innovative capacity
- (5) Quality of products and services
- (6) Effective use of assets
- (7) Financial balance
- (8) Long-term investment value
- (9) Effectiveness in the accomplishment of global transactions.¹⁸⁴

The resultant 'reputation score' corresponds with the average of all the assessments across these nine criteria. The score determines a company's ranking within its industry e.g. computing, metal-working, banking or telecommunications.¹⁸⁵ One condition needs to be fulfilled: to be included in the ranking a company's reputation score must be at least among the top 50%.¹⁸⁶

In addition to these lists, *Fortune* publishes a second so called *All Star List* as a survey of the fifty most admired companies.¹⁸⁷ This ranking is developed by another poll in which the same group specifies its personal ten top companies outside its own industry.¹⁸⁸ And apart from the WMAC ranking (published annually since 1997), another evaluation covers "America's Most Admired Companies" (AMAC). Published since 1983, it uses eight criteria; the ninth one drops out.¹⁸⁹

Having clarified the method behind the *Fortune* score and its cognates, the economic relevance of these scales of measurement must now be addressed. Cao et al. use the AMAC ranking to show that companies announcing a restatement exhibit a significantly higher chance not to enter the *Fortune* ranking in the following five years than those without a restatement.¹⁹⁰ *Fortune* rankings have the advantage of an

¹⁸⁴ Cf. HayGroup (2013), p. 1.

¹⁸⁵ Cf. HayGroup (2013), p. 1.

¹⁸⁶ Cf. *Fortune* (2013), p. 1.

¹⁸⁷ The All Star Rankings are not part of the present analysis.

¹⁸⁸ Cf. HayGroup (2013), p. 1.

¹⁸⁹ Cf. Cordeiro and Schwalbach (2000), p. 5 f.

¹⁹⁰ Cf. Cao et al. (2012), p. 957.

extensive control sample involving assessments by thousands of experts,¹⁹¹ who are thereby implicitly acknowledged as possessing expert knowledge of the product market as well as of management abilities.¹⁹² Moreover, the evaluation has outstanding consistency due to its 30 year existence, which makes long-term studies possible.¹⁹³

Its widespread acknowledgment by economists is a good indication of the significance of the *Fortune* score as a reputation measure. An overview has been placed in the annex to provide a comprehensive analytic list of studies using the *Fortune* score to date.

From this it becomes evident that the first studies implementing the score were made in 1986. Since the present research was undertaken in 2013, a period of 28 years has elapsed in which the *Fortune* score has played an important role in economics. During these 28 years 52 studies have been published in widely diverse journals investigating the impact of reputation on various issues. Only three of these studies found no significant relation between reputation and the investigated issues: nearly all agree that a high reputation has positive effects, whether due to decreasing costs or higher performance. Nevertheless a disadvantage of the *Fortune* score is indicated in some studies,¹⁹⁴ whose authors impute that contributors to the survey are influenced by a company's past financial success. All in all, however, the *Fortune* score is an accepted and frequently used measure of reputation.¹⁹⁵

¹⁹¹ Cf. Fryxell and Wang (1994), p. 1.

¹⁹² Cf. Anginer et al. (2011), p. 3.

¹⁹³ Cf. Fryxell and Wang (1994), p. 1.

¹⁹⁴ Cf. Fombrun et al. (1999); Brown and Perry (1994); Fryxell and Wang (1994).

¹⁹⁵ The list contains AMAC and WMAC rankings and has been created to the best of the author's knowledge. It provides an overview of economics studies on the impact of reputation. No claim is made to absolute completeness.

2.3 The impact of bond issues on a company's capital costs and performance

Corporate bonds can be understood as a contract in which the issuing company promises to make interest and redemption payments at a predefined future date or dates. In return it receives cash now.¹⁹⁶ Companies can commission investment banks or underwriters to issue bonds on the market, where investors can buy them.¹⁹⁷ It is not absolutely necessary to appoint an underwriter, but companies prefer to make use of an underwriter in markets with high information asymmetry.¹⁹⁸ It is possible to appoint one or several underwriters, but fees must be paid for each.¹⁹⁹ The underwriting fee represents the underwriter's compensation for the risk assumption connected with the issuing process.²⁰⁰

The following diagram gives an overview of the process of bond issues, with its various participants and roles:

¹⁹⁶ Cf. Littermann and Iben (1991), p. 52

¹⁹⁷ Since investment banks regularly assume the function of underwriters, banks are treated in this thesis as underwriters.

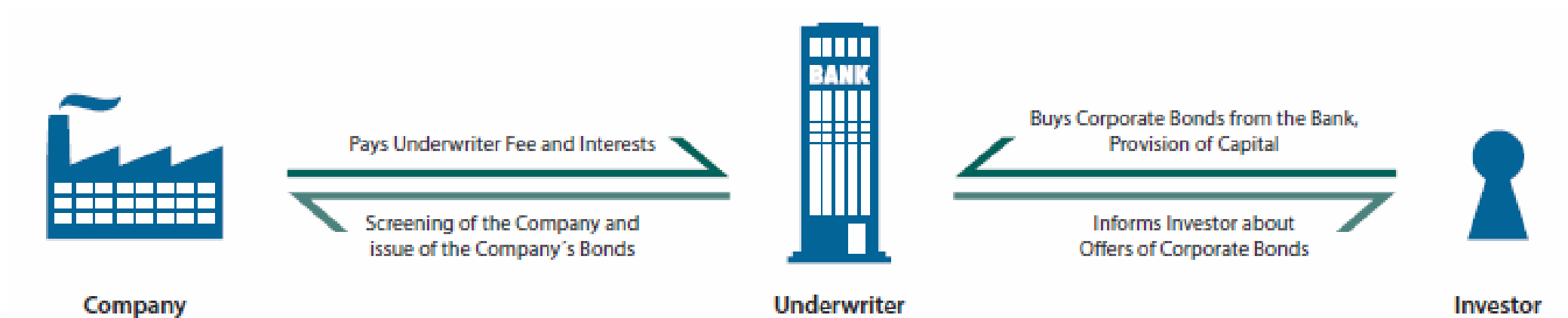
¹⁹⁸ Cf. Chemmanur and Fulghieri (1994), p. 75.

¹⁹⁹ Cf. Chemmanur and Fulghieri (1994), p. 58.

²⁰⁰ Cf. Livingston and Miller (2000), p. 26.

Figure 7: The Process of Corporate Bond Certification

Source: Own figure



The value of corporate bonds depends on three basic components. First, the structure of the period of validity, second, the call options included with the bond, and third, the credit (or default) risk. Risk is part of the process, because companies might not be able to perform their obligations in full and at the promised time.²⁰¹ This default risk was in the past the main criterion distinguishing corporate from government bonds, but the current financial crisis has changed this situation in several countries. Today not all government bonds can be declared riskless any more.²⁰²

In general, corporate bonds bear higher risk than government bonds, so investors expect a higher return; this is called the credit spread. Thus, the level of credit spread correlates with the level of risk. The credit spread itself depends on multiple factors. A company can issue different bonds with different individual spreads.²⁰³ The credit spread can be described as the difference between the return on maturity date of a corporate bond and a government bond with the same period of validity.²⁰⁴ According to Elton et al. (2001), the difference can be traced back to three factors: (a) expected default risk, (b) tax rate, and (c) risk rate.²⁰⁵ These will now be considered in that order.

- (a) Some bond repayments will default with a specific probability. Hence, investors expect a higher predetermined redemption payment to compensate the default risk. The latter depends among other things on the rating of each company. The difference between the underwriter's advertised price and the price currently being paid on the capital market is called underwriter gross spread.²⁰⁶ This contains a management fee, an underwriting fee, a sales commission, and further relationship-specific underwriting fees.²⁰⁷ In addition, the level of the fee depends on the default risk, the period of validity, the volume of the bond issue, and the underwriter's reputation;²⁰⁸ it is calculated as the quotient of the underwriter's financial compensation and the issue

²⁰¹Cf. Collin-Dufresne et al. (2001), p. 2178.

²⁰²Cf. <http://www.faz.net/aktuell/finanzen/meine-finanzen/anleihen-aktien-und-gold-was-ist-sicher-was-bringt-rendite-11549870.html>

²⁰³ Cf. Littermann and Iben (1991), p. 52

²⁰⁴ Cf. Elton et al. (2001), p. 251.

²⁰⁵ Cf. Elton et al. (2001), p. 247.

²⁰⁶ Cf. Wang et al. (2013), p. 11.

²⁰⁷ Cf. Wang et al. (2013), p. 11.

²⁰⁸ Cf. Kollo (2005), p. 13.

volume.²⁰⁹ The so called gross spread stands for the underwriter gross spread expressed in percentage.²¹⁰ Elton et al. (2001) investigate AA, A and BBB bonds with periods of validity of between two and ten years.²¹¹ In their result they show that in general the spread is higher in the financial than in the industrial sector. Furthermore, the spread is higher for both sectors in cases of low ratings.²¹²

However the marginal probability of default increases for the high-rated debt and decreases for low-rated debt. This occurs because bonds can change their rating during the period of their term. For example a bond rated by Standard & Poor's as AAA may in the following year show a default risk of zero, whereas the probability after twenty years may rise 0.206%. The other extreme is a bond rated as CCC which in the following year shows a default risk of 22.052%. In this case the probability of default will decrease over twenty years to 2.928%.²¹³

Credit rating agencies have information about companies which are not public, so in their bond ratings they can inform investors about the credibility of the respective debtor.²¹⁴ In general bond ratings are assigned to bonds at the time of issue and verified onward by credit rating agencies.²¹⁵ A change in rating indicates that the debtor's creditworthiness has improved or deteriorated.²¹⁶ Standard & Poor ratings of BBB- or better are valued as investment grade, whereas bonds with a lower rating are called high yield or junk bonds and are valued as non-investment grade.²¹⁷ These relatively risky bonds are generally characterized by high returns, intended to incentivize investors and at the same time compensate them for the high risk connected with the bonds.²¹⁸ Since from the company's point of view bonds represent debt, a rating downgrade leads to higher capital costs and vice versa.²¹⁹ Hence, companies

²⁰⁹ Cf. Fang (2005), p. 2732.

²¹⁰ Cf. Chahine (2004), p. 7.

²¹¹ The different bond gradings are AAA, AA, A, BBB, BB, B, CCC et cetera.

²¹² Cf. Elton et al. (2001), p. 252-254.

²¹³ Elton et al. (2001), p. 258.

²¹⁴ Cf. Kisgen (2006), p. 1038.

²¹⁵ Cf. Altman and Kao (1992), p. 64.

²¹⁶ Cf. Altman and Kao (1992), p. 64.

²¹⁷ Cf. Standard & Poor's (2007), p. 1.

²¹⁸ Cf. Anginer and Yildizhan (2010), p. 1.

²¹⁹ Cf. Kisgen (2006), p. 1036.

with poor credibility or credit history can profit from the services of a financial intermediary.²²⁰

- (b) Interest on corporate bonds is generally taxable at a rate of 5-10% in the U.S., whereas interest on government bonds is free of tax. Hence, investors seek compensation in the form of a tax rebate.²²¹
- (c) As the return on corporate bonds is riskier than for government bonds, investors should receive a risk rate as well as interest. This is the case because a huge part of the risk is systematic and therefore impossible to diversify. However, this aspect is disputed in the literature.²²² Despite the work of Elton et al. (2001), 46.17% of the spread remains unexplained.²²³

An approach to the analysis of this unexplained element is to examine the impact of immaterial values. Anginer et al. (2011) criticize the literature's excessive focus on 'hard facts' – i.e. information that can be easily documented, such as the progress of a company's repayments. Soft facts, representing the opposite of hard, are often disregarded because they are difficult to evaluate and frequently subjective. It may well, therefore, be appropriate to explore the impact of 'soft facts' more intensively – as Anginer et al. (2011) emphasize in their study of the influence of reputation on credit costs.²²⁴ Their results show that reputation influences credit costs not only statistically but also economically. They indicate that a rise in Fortunes reputation ranking leads to a reduction in credit costs.²²⁵

²²⁰ Cf. Diamond (1989), p. 859.

²²¹ Cf. Elton et al. (2001), p. 263.

²²² Cf. Elton et al. (2001), p. 247.

²²³ Cf. Elton et al. (2001), p. 273.

²²⁴ Cf. Anginer et al. (2011), p. 2-3.

²²⁵ Cf. Anginer et al. (2011), p. 17.

3. Empirical Evidence of Economic Effects due to Misbehavior

This chapter outlines the economic role played by the variables to be applied in the later empirical analysis. This field of research is as yet quite unexplored: none of these variables has, to the author's knowledge, been used previously to determine behavior lacking in integrity. In fact, most research has a slightly different approach, focusing not on integrity but on variables connected with compliance violation. Chapter 3 will summarize the current state of research in order to develop new hypotheses. In each section an explanation of the term will be followed by relevant empirical evidence. As the use of some of these variables is new, limited case studies will replace empirical evidence to show the existence of the violations concerned.

3.1 Restatements

The most important regulations for capital-market-oriented companies operating in the U.S. market are the International Accounting Standards IFRS and US-GAAP.²²⁶ The financial information provided by the accounting standards is intended to reduce the information gap between entrepreneurs and the financial market; it is also generally used to inform outsiders about a company's ownership, and its financial and earnings position.²²⁷ Hence, financial statements represent an important source of information for both investors and financial analysts, whose forecasts are based on an evaluation of a company's economic situation.²²⁸

Ball and Brown (1968) stress the value of financial accounting, and Beaver (1968) shows that financial ratios are an early indicator of a company's possible default.²²⁹ This information is also used for monitoring.²³⁰ Chen et al. (2012) assign auditors great influence in the process of controlling annual reports, because they can reduce a manager's opportunistic projections, and as an external control mechanism they represent a per se credible function.²³¹ In this respect Gaa (2007) emphasizes the need for independent auditors to behave with integrity, in order to protect shareholders' interests.²³²

If financial statements are published by a company and in the course of time are corrected and republished due to mistakes which may lead outsiders to draw false conclusions, this is called a financial restatement.²³³ Some of these corrections may be voluntary, others may result from the instructions of auditors and regulatory authorities.²³⁴ The American Securities Act requires companies to correct incorrect, incomplete or misleading reports.²³⁵ A company may discover misreporting or misstatements (i.e. faulty descriptions of their accounting ratios) in the process of

²²⁶ The following explanations are mainly based on the American capital market.

²²⁷ Cf. Lee et al. (1993), p. 369; Anderson and Yohn (2002), p. 5

²²⁸ Cf. Chen et al. (2012), p. 5

²²⁹ Cf. Ball and Brown (1968), p. 176; Beaver (1968): p. 179-191

²³⁰ Cf. Chen et al. (2012), p. 5

²³¹ Cf. Chen et al. (2012), p. 26 f.

²³² Cf. Gaa (2007), p. 27

²³³ Cf. Skinner (1997), p. 251 f.

²³⁴ Cf. Palmrose et al. (2004), p. 61

²³⁵ Cf. Palmrose et al. (2004), p. 61

internal audit or other internal control procedures.²³⁶ On the other hand, the Securities and Exchange Commission (SEC) or independent auditors can induce rectification of faulty entrepreneurial documents identified through inspection.²³⁷ Announcement of such rectifications takes place in one or more press releases by the affected company, or by submission of what is known as ‘Form 8-K’.²³⁸ Depending on the period of the corrected financial reports, capital-market-oriented companies might have to complete a modification of ‘Form 10-Q’ or ‘Form 10-K’.²³⁹

There are many different reasons for restatements e.g. a typing error can happen, or a specific accounting standard may be overlooked, either of which can lead to wrong balance sheet figures followed by incorrect accounting. Moreover the implementation of a new accounting method within a company may make it necessary to revise previous balance sheets and adjust them to new regulations.²⁴⁰ The restatement may, in fact, lead to a better result than the original announcement, though in most cases the opposite is more likely and the financial situation of the company turns out to be worse than expected.²⁴¹

In the context of restatements two types of misreporting can be distinguished. Accounting errors are said to be made unintentionally in the processing of transactions or in the application of accounting standards, with the result that the financial statements no longer conform to US-GAAP.²⁴² Financial reporting fraud, however, entails the intention to fake balance sheets or to intentionally implement accounting standards wrongly.²⁴³ In most cases these actions are performed to achieve a better external presentation of the company’s economic situation than is actually the case. A characteristic of these companies is their large financial leverage, aimed at reducing external financing costs.²⁴⁴

²³⁶ Cf. Palmrose et al. (2004), p. 61

²³⁷ Cf. Palmrose et al. (2004), p. 61

²³⁸ Cf. Palmrose et al. (2004), p. 61

²³⁹ Cf. Palmrose et al. (2004), p. 61 Form 8-K describes a standardized SEC report which has to be submitted by American companies if an important event like default occurs.

²⁴⁰ Cf. GAO (2002), p. 1

²⁴¹ Cf. Graham et al. (2008), p. 46

²⁴² Cf. GAO (2006), p. 1

²⁴³ Cf. GAO (2006), p. 1

²⁴⁴ Cf. Richardson et al. (2003), p. 25

The announcement of a restatement generally signals that previous annual reports include mistakes and are therefore unreliable.²⁴⁵ Although it may often be just one specific part of the balance sheet that has to be corrected, the whole balance sheet – and with it the company’s entire performance – is automatically subjected to doubt. Mistakes of this kind increase the information gap between creditor and borrower²⁴⁶ and undermine investors’ confidence in a company’s accuracy.²⁴⁷

Moreover, restatements motivate outsiders to scrutinize the quality and accuracy of company announcements, which may still further diminish credibility.²⁴⁸ The impact of restatements depends on the gravity of their cause. Restatements due to fraudulent financial reporting will clearly be more detrimental, as they will be discussed in public and will almost certainly have a negative effect on a company’s reputation.²⁴⁹

Especially for companies listed on the stock exchange, restatements may have long-term consequences. For example, market capitalization may be influenced negatively, because market reaction to announcements in which previous financial statements had to be adjusted is very sensitive.²⁵⁰ Predictably, the strongest negative market reaction is found after restatements that unequivocally rectify a company’s earnings downwards.²⁵¹ Hribar and Jenkins (2004) show that the relative increase in capital costs in the month following a restatement lies between 7% and 19%, depending on the method of valuation. Restatements initiated by auditors trigger the highest increase in capital costs,²⁵² and companies with high leverage in their debt likewise show higher increase than others,²⁵³ because investors demand higher yields. The demand is justified by the uncertainty about the management’s credibility and authority, as well as the investor’s perception of the company’s economic situation.²⁵⁴

Palmrose et al. (2004) analyzed restatements and resultant market reactions and established that the average abnormal return in a time slot of two days after the

²⁴⁵ Cf. Anderson and Yohn (2002), p. 19

²⁴⁶ Cf. Graham et al. (2008), p. 46

²⁴⁷ Cf. Graham et al. (2008), p. 46

²⁴⁸ Cf. Graham et al. (2008), p. 44

²⁴⁹ Cf. Graham et al. (2008), p. 45 f.

²⁵⁰ Cf. GAO (2006), p. 1

²⁵¹ Cf. Hirschey et al. (2005), p.16

²⁵² Cf. Hribar and Jenkins (2004), p. 338

²⁵³ Cf. Hribar and Jenkins (2004), p. 338

²⁵⁴ Cf. Hribar and Jenkins (2004), p. 354

announcement of a restatement decreases. The negative return was even higher in cases in which fraud was involved, more than one mistake was admitted, or profits had to be reduced.²⁵⁵ The significant downgrade in earnings forecast by financial analysts after a restatement carried considerable weight.²⁵⁶

Anderson and Yohn (2002) showed that corrections in revenue recognition caused the highest spread in the stock market, and that their impact on investors' perceptions of corporate value, as well as on the information gap, was even higher than that caused by restatements concerning other financial data.²⁵⁷ The results of these empirical studies emphasize the important role of restatements for a company, characterized as these are by substantial loss in shareholder value on the one hand, and by growth in capital costs on the other.²⁵⁸

In the process of borrowing, which represents a primary type of business financing, the cost of capital can also rise.²⁵⁹ Graham et al. (2008) point out that contracts closed after a restatement are typified by significantly higher spreads, shorter periods of validity, and stricter contract terms than credits concluded before misreporting.²⁶⁰ Companies affected also have to pay higher commissions and fees, and the number of lenders decreases after a restatement.²⁶¹ The different impacts can be easily explained: a restatement constitutes incorrect information given to lenders. The correction of a balance sheet in the form of a downgrade is a sign that the company's financial management is worse than previously supposed.²⁶² This is followed by a stricter reappraisal of the credit risk, declining credibility, and higher default risk.²⁶³

Moreover, restatements can cause higher costs in the form of underwriter fees in the process of bond issue.²⁶⁴ Wang et al. (2013) show that the quality of restatements also influences a company's capital costs because investment banks consider previous

²⁵⁵ Cf. Palmrose et al. (2004), p. 60

²⁵⁶ Cf. Palmrose et al. (2004), p. 60

²⁵⁷ Cf. Anderson and Yohn (2002), p. 4

²⁵⁸ Cf. Graham et al. (2008), p. 45

²⁵⁹ Cf. Graham et al. (2008), p. 46

²⁶⁰ Cf. Graham et al. (2008), p. 44

²⁶¹ Cf. Graham et al. (2008), p. 44

²⁶² Cf. Graham et al. (2008), p. 46

²⁶³ Cf. Graham et al. (2008), p. 46

²⁶⁴ Cf. Wang et al. (2013), p. 1

restatements both in setting up an underwriting contract and in the corresponding negotiations.²⁶⁵

Since the risk of cooperating with a company that has had an instance of misreporting in the past is higher for the investment bank, their expenditure for the due diligence process is also higher. If investors are deceived, the consequences affect both issuer and underwriter.²⁶⁶ Moreover, the demand for bonds is lower among companies with a history of misreporting, leading to a higher risk in the liquidity of these bonds, as well as higher marketing expenditure.²⁶⁷ The impact on underwriter fees is higher during the years immediately following a restatement, and it generally decreases with improvements made in the field of corporate governance.²⁶⁸ In contrast, companies that intentionally published fake reports have a higher probability of default.²⁶⁹

Additional studies have investigated the connection between integrity and restatements. Cao et al. (2012) explore the connection between the quality of annual reports and corporate reputation.²⁷⁰ Restatements have been observed mainly in companies that introduce a shareholding component into their compensation for the CEO (Bergstresser and Philippon (2006), Efendi et al. (2007)).²⁷¹

3.2 Money laundering

Given the variety of different types of money laundering, it is difficult to choose one specific definition. It makes sense to focus on an explanation of the term with an international relevance, for instance the definition set by the Financial Action Task Force (FATF) of the OECD. The principle of money laundering is to channel earnings from criminal activities into the business cycle with the aim of covering the source tracks and legalizing the illegally acquired funds. The main sources of income in this

²⁶⁵ Cf. Wang et al. (2013), p. 33

²⁶⁶ Cf. Wang et al. (2013), p. 4

²⁶⁷ Cf. Wang et al. (2013), p. 4

²⁶⁸ Cf. Wang et al. (2013), p. 32

²⁶⁹ Cf. Wang et al. (2013), p. 33

²⁷⁰ Cf. Cao et al. (2012), p. 956 f.

²⁷¹ Cf. Bergstresser and Philippon (2006), p. 512 and Efendi et al. (2007), p. 668

sector are arms trade, drug distribution, human trafficking, smuggling, and prostitution, joined by beguilement, burglary and corruption.²⁷²

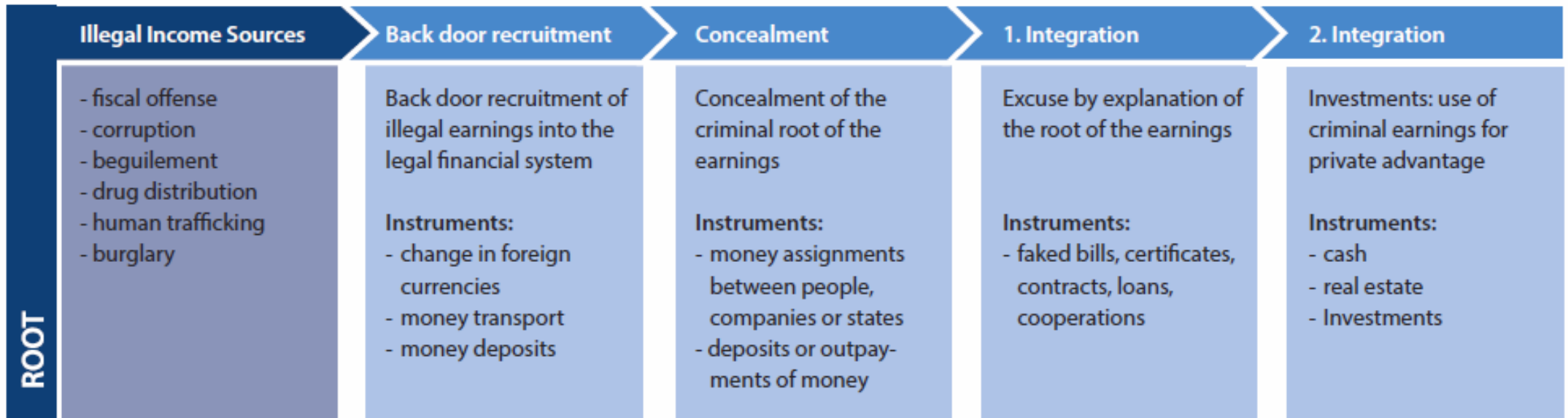
The following image illustrates the methodology of money laundering and its relevant stages. First the illegal earnings have to be transferred into the legal financial system by changing it into foreign currencies or assets such as gold. This step is followed by deposits into domestic or foreign accounts. Permanent assignments of varying amounts to accounts distributed among various states, people and companies create the intended camouflage. These earnings are then justified by false documents: e.g. bills, certificates, contracts, loans, lottery prizes, company shares and investments in real estate. Finally the laundered money is invested in consumer goods and property to gain private advantage.²⁷³

²⁷² Cf. <http://www.fatf-gafi.org/pages/faq/moneylaundering/>

²⁷³ Cf. Zentrum für Steuerpolitik und Verwaltung, (2009), p. 13-14.

Figure 8: Explicit stages of the money-laundering process

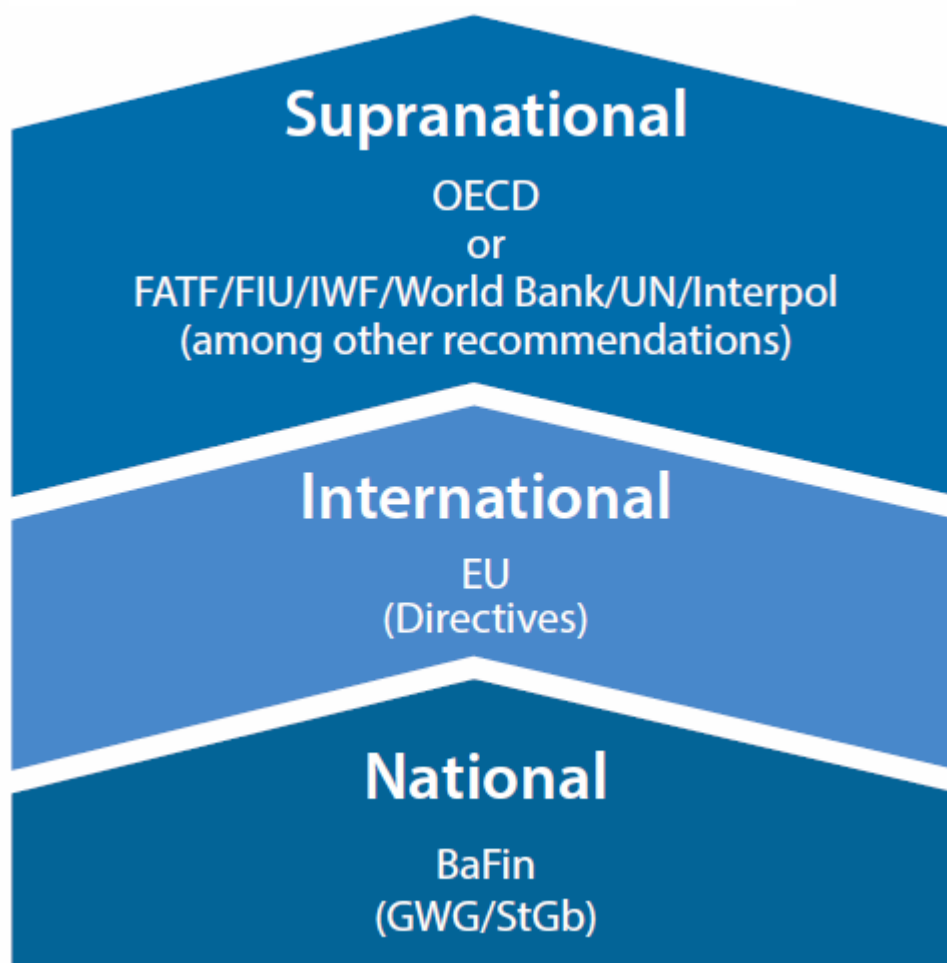
Based on: Handbuch "Geldwäsche" für den Innen- und Außendienst der Steuerverwaltung, Zentrum für Steuerpolitik und Verwaltung, OECD (Source: Berk/DeMarzo 2013, p.170).



In 2009 the United Nations Office on Drugs and Crime performed a statistical analysis to investigate the complex of problems related to money laundering. They discovered that the sums concerned amounted to “[...] around \$1.6 trillion or 2.7 per cent of global GDP [...] This figure is consistent with the 2 to 5 per cent range previously established by the International Monetary Fund to estimate the scale of money laundering.”²⁷⁴ This data indicates the globally important role of money laundering.

The following diagram illustrates the different public authorities that work on national, supranational and international levels with the aim of preventing and penalizing money laundering:

Figure 9: Different levels of authorities dealing with money laundering
Source: Own figure



²⁷⁴ Cf. http://www.unodc.org/unodc/en/frontpage/2011/October/illicit-money_-how-much-is-out-there.html

Founded in 1989 by the G7 states to suppress terrorism and money laundering, FATF operates throughout the territory of the OECD.²⁷⁵ Today it is one of the most important authorities worldwide.²⁷⁶ Its relevance is characterized by the fact that it includes 36 member states covering the most important financial centers of Asia, Europe and North and South America. Non-cooperating states are being gradually integrated into the work of FATF to increase pressure on them. States known to be high risk, which have not yet implemented international standards to combat money laundering, are blacklisted as described in detail below. This applies to states that fail to implement the more than 40 directives (supplemented by 9 more after 9/11) to fight terrorism and save the financial system. Developing countries in particular are included in this system.²⁷⁷

FATF established the Financial Intelligence Units,²⁷⁸ whose function is to detect and analyze money laundering worldwide. Germany's legislation in this area is embodied in its Money Laundering Act (Geldwäschegesetz: GWG), whose §10 addresses the solution of money laundering cases.²⁷⁹ In close cooperation with FATF, the International Monetary Fund (IMF) has developed better international regulations on money laundering,²⁸⁰ which have been approved by the World Bank and added to national codes of legislation.²⁸¹

Cases of international money laundering are documented by the UNODC – an international unit fighting drugs and crime that supports member states in the implementation of regulations against money laundering, as well as with software to reduce the crime rate.²⁸² Interpol is yet another institution that supports international investigations with the exchange of data and the prosecution of money laundering.²⁸³

²⁷⁵ Cf. <http://www.fatf-gafi.org/pages/aboutus/>

²⁷⁶ Cf. <https://www.bmf.gv.at/finanzmarkt/geldwaesche-terrorismusfinanzierung/geldwaesche.html>

²⁷⁷ Cf. Sharman (2008), p. 636

²⁷⁸ Cf. International Monetary Fund and World Bank (2004), p. 1

²⁷⁹ Cf.

http://www.bka.de/nn_204270/sid_AC8D2D94D4F36FBEA5A4E55C980A3790/DE/ThemenABisZ/Delikt_sbereiche/GeldwaescheFIU/geldwaesche__node.html?__nnn=true

²⁸⁰ Cf. International Monetary Fund (2012), p. 34

²⁸¹ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

²⁸² Cf. <https://www.unodc.org/unodc/en/money-laundering/technical-assistance.html?ref=menuaside>

²⁸³ Cf. <http://www.interpol.int/Crime-areas/Financial-crime/Money-laundering>

The American standards were established by the Bank Secrecy Act of 1970.²⁸⁴ This was followed by the Money Laundering Control Act in 1986 and the USA PATRIOT Act as a consequence of the terrorist attacks of 2001. These were the most important laws aimed at countering terrorism and controlling bank customers' transactions.²⁸⁵

The EU has supported the implementation of anti-money-laundering standards in collaboration with FATF by setting up 40 recommendations.²⁸⁶ In June 1991, in response to international pressure, the Council of the European Community issued an initial²⁸⁷ “directive [...] to prevent the use of the financial system for money laundering No. 91/308/EEC”²⁸⁸ Laws against money laundering – addressed not only to banks but also to financial service institutions and insurance companies – followed in due course.²⁸⁹

The directive was implemented in Germany in 1992 by the introduction of the “law to fight illegal trade in drugs and other types of organized crime” (OrgKG in §261 StGB), which in turn became the foundation of the German money laundering law (GWG).²⁹⁰ The area of application was extended in 2001 and 2005 to specific professional groups including insurance intermediaries, legal professions and some classes of industrial retailer.²⁹¹ The main focus however lies on the financial sector, companies and banks. In line with GWG §16 clause 2 no. 2 the Federal Financial Services Agency (BaFin) supervises preventive measures in this area.²⁹² This act empowers BaFin to control credit companies, financial service companies, payment institutions (especially life policy companies), capital investment companies, and people and companies selling or trading electronic money. These duties are regulated by the Money Laundering Act

²⁸⁴ Cf. http://www.fincen.gov/news_room/aml_history.html

²⁸⁵ Cf. http://www.fincen.gov/news_room/aml_history.html

²⁸⁶ Cf. Mitsilegas and Gilmore (2007), p. 120

²⁸⁷ Cf. Lang (2001), p. 11

²⁸⁸ Cited by Lang from EG L 166/77

²⁸⁹ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

²⁹⁰ Cf. Lang (2001), p. 1

²⁹¹ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

²⁹² Cf. http://www.gesetze-im-internet.de/bundesrecht/gwg_2008/gesamt.pdf

(GWG), Credit Act (KWG), Insurance Supervision Act (VAG), Payment Supervision Act (ZAG), and Investment Act (InvG).²⁹³

It is BaFin's intention to prevent not only the abuse of the financial sector but also the funding of terrorism.²⁹⁴ Beyond this, the organization aims to create transparency in business relationships and financial transactions, and to safeguard customer care.²⁹⁵

The same principles govern the 2001 regulations of the Basel Committee on Banking Supervision regarding a "bank's duty of care in the legitimate concerns of its customers". Especially with the aim of preventing abuses, the committee declares the measures of the worldwide banking system in connection with the identification of customers to be necessary in the light of adequate risk management for banks.²⁹⁶ The Basel Committee explicitly considers the risks of reputation loss and states that investors, trustees and the market should have a high degree of confidence in banks. The risk of negative publicity in the wake of reputation loss, no matter if it is based on truth or lies, is defined as affecting confidence in an institute's integrity.²⁹⁷

BaFin's homepage states similarly that companies in the financial sector should avoid transactions with a criminal background. Emphasis is laid on processes of money laundering and financing terrorism, as well as other criminal actions leading to the compromise of an institute's propriety. These can threaten an abused company's reputation and solidity and, beyond this, endanger the integrity and stability of the whole financial sector.²⁹⁸

The last-mentioned passages make it clear that awareness of immaterial assets such as integrity and reputation, and their connection with a company's value, has risen. Money laundering represents a high risk factor, since it systematically misuses the

²⁹³ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

²⁹⁴ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

²⁹⁵ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

²⁹⁶ Cf. Basel Committee on Banking Supervision(2001), p. 1

²⁹⁷ Cf. Basel Committee on Banking Supervision(2001), p. 3

²⁹⁸ Cf.

http://www.bafin.de/DE/Aufsicht/Geldwaeschebekaempfung/geldwaeschebekaempfung_node.html

banking industry for illegal causes and activities. Hence, a properly functioning identification procedure is necessary to increase the alertness of financial institutes.²⁹⁹

The following paragraphs cite empirical evidence of money laundering, illustrating its importance as a variable in the empirical section of the thesis. According to Sharman (2008) there were no laws or directives on money laundering two decades ago. Today more than 170 countries have passed legislation or issued directives in this matter.³⁰⁰

Verhage (2009) lists national monetary volumes, inflation rates, interest-fees and exchange rates as factors influenced by cash flows of laundered money. Causing immense damage to the economy, these cash flows complicate every central bank's aim to establish a balanced financial system based on adequate monetary policies. Verhage (2009) goes on to observe that in this context economies not directly affected by money laundering also feel its negative impacts through interactions on the international markets that lead to unfair conditions of competition.³⁰¹

Masciandaro (1999) adds another consequence: the high costs caused by efforts to control and combat money laundering. The special software needed for the investigation of transactions generates considerable costs. Depending on the grade of efficiency, compliance with regulations also inevitably causes costs.³⁰²

Johnson and Lim (2002) investigate whether countries belonging to FATF have better anti-money-laundering policies, and whether membership of FATF influences the relation between money laundering policy and relevant banking standards.³⁰³ They conclude that most countries achieve a better relation after joining FATF.³⁰⁴

Bartlett (2002) thematizes in particular the damage to the financial systems of developing countries. Money laundering undermines the financial systems in three different ways: first it raises the possibility that individual customers are betrayed by corrupt bank employees. Secondly the rate of criminal wheeling and dealing inside the banks rises. Thirdly financial institutes themselves suffer financial damage.³⁰⁵ Thus,

²⁹⁹ Cf. Basler Ausschuss für Bankenaufsicht (2001), p. 3

³⁰⁰ Cf. Sharman (2008), p. 635

³⁰¹ Cf. Verhage (2009), p. 11

³⁰² Cf. Masciandaro (1999), p. 227

³⁰³ Cf. Johnson and Lim (2002), p. 9

³⁰⁴ Cf. Johnson and Lim (2002), p. 18

³⁰⁵ Cf. Bartlett (2002), p. 5

Bartlett (2002) points out the operational risk as well as the crucial reputation risk in terms of loss of trust in the integrity of the institute concerned.³⁰⁶

Sharman (2008) investigates the impact of anti-money-laundering laws in the context of developing countries. He concludes that these laws are implemented indiscriminately and under pressure,³⁰⁷ and that FATF's blacklisting systems (see above) have already caused considerable damage to reputations, inasmuch as these countries are being avoided intensively.³⁰⁸

Harvey and Lau (2009) investigate compliance activities conducted by banks to counter money laundering. They look at these in connection with the bank's annual reports³⁰⁹ and conclude that banks that remain silent about their anti-money-laundering compliance harm themselves because they ignore the large additional payments this may cost them, as well as the lost opportunity to raise their reputation.³¹⁰

Verhage (2009) focuses his research on banks that had been used for money laundering before enduring a loss of reputation. The loss in reputation caused by money laundering leads to a loss of trust in the banks themselves, in addition to immediate pecuniary damage. Banks therefore have a strong vested interest – in such cases rooted in bitter experience – in complying with legal standards and intra-company behavioral codes. Strict adherence to money laundering regulations can be interpreted as a signal to the market and eventually functions as a marketing tool, with the consequence that the loss of reputation ends up creating leverage.³¹¹

As can be seen from this overview, a number of studies investigate the relation between money laundering and the financial system; none, however, investigates the impact of money laundering on intangible assets such as reputation, integrity, or the shareholder value that derives from them.

³⁰⁶ Cf. Bartlett (2002), p. 8

³⁰⁷ Cf. Sharman (2008), p. 635

³⁰⁸ Cf. Sharman (2008), p. 644

³⁰⁹ Cf. Harvey and Lau (2009), p. 57

³¹⁰ Cf. Harvey and Lau (2009), p. 69

³¹¹ Cf. Verhage (2009), p. 12

3.3 Settlement payments

In the case of an accusation against a company or bank, the accused will often prefer to make a settlement payment, especially if serious – or even fatal – consequences must be feared from a prosecution. An out of court agreement has several benefits. It definitely shortens the period in which the accused party is mentioned in the media, suffering continuous damage to its reputation. Moreover, the punishment, whether monetary or penal in other ways, will generally be cheaper or might even be avoided. Nevertheless a fulfilled settlement payment always produces the feeling of a confession towards the accuser.

Since no research literature has so far investigated settlement payments, their significance and impact can be illustrated by a recent incident involving HSBC, one of the world's biggest banks. In 2012 the bank was confronted with the allegation of having practiced and supported drug distribution between 2004 and 2010.³¹² Between 2007 and 2008 HSBC Mexico is said to have transferred \$7 billion dollars to HSBC USA. Even more billions are said to have been lodged in Iranian banks.³¹³ HSBC was on the verge of being punished with a fine of several billion dollars and by the removal of its operating license.³¹⁴

The bank's reaction was to confess its misdemeanors and announce to its employees that responsibility had to be taken for the 'mistakes'.³¹⁵ The North American head of HSBC apologized in public and declared that the resultant deficits would be made good.³¹⁶ In 2012, to buy its way out of the misery, HSBC made a settlement payment of \$1.9 billion, the highest penalty imposed on a bank to date. In addition, the bank had to improve its internal controlling, which cost a further \$700 million. Nevertheless its

³¹² Cf. <http://www.spiegel.de/wirtschaft/unternehmen/vorwurf-der-geldwaesche-us-senat-rueffelt-hsbc-fuer-laxe-kontrollen-a-844958.html>

³¹³ Cf. <http://www.spiegel.de/wirtschaft/grossbank-hsbc-soll-geldwaesche-betrieben-haben-a-845158.html>

³¹⁴ Cf. <http://www.spiegel.de/wirtschaft/unternehmen/vorwurf-der-geldwaesche-us-senat-rueffelt-hsbc-fuer-laxe-kontrollen-a-844958.html>

³¹⁵ Cf. <http://www.handelsblatt.com/unternehmen/banken/neuer-bankenskandal-hsbc-unter-geldwaesche-verdacht/6870274.html>

³¹⁶ Cf. <http://www.spiegel.de/wirtschaft/unternehmen/vorwurf-der-geldwaesche-us-senat-rueffelt-hsbc-fuer-laxe-kontrollen-a-844958.html>

benefit from the money laundering still by far exceeds the penalty.³¹⁷ Writing in the *New York Times*, the public authorities gave two reasons why the penalty was not even higher: to avoid weakening the financial system and deterring investors.³¹⁸

The scandalizing news had little impact on the equity price of HSBC shares. Given the penalty, investors were clearly not disturbed by the confession of guilt. It seems the opposite was the case, for on announcement of the fine the share lost a little in price, but it has subsequently risen by 14%.³¹⁹ The case illustrates succinctly how settlement payments can be used to avoid the more serious consequences that can arise from an allegation.

3.4 Corruption and bribery

Since the terms corruption and bribery stand for a type of offense, it is wise to remember the characteristics of the Codes of Conduct as explained in the Introduction to this thesis. A short overview of German practice will be given here before turning to the American approach to these matters.

In Germany, the importance of compliance finally came home to the minds of managers, politicians and the general public after the publication of the German Corporate Governance Code (DCGK) in 2002.³²⁰

In this context, compliance indicates behavior in accordance with the law.³²¹ The incidence of public scandals in German business prior to 2002 highlighted the importance of corporate governance and compliance not just in the banking sector but across the board.³²² Although, as a set of recommendations, the Code represents a soft

³¹⁷ Cf. <http://www.spiegel.de/wirtschaft/unternehmen/hsbc-kauft-sich-vom-vorwurf-der-geldwaesche-und-terrorfinanzierung-frei-a-872300.html>

³¹⁸ Cf. http://dealbook.nytimes.com/2012/12/10/hsbc-said-to-near-1-9-billion-settlement-over-money-laundering/?_r=0

³¹⁹ Cf. <http://www.spiegel.de/wirtschaft/unternehmen/hsbc-kauft-sich-vom-vorwurf-der-geldwaesche-und-terrorfinanzierung-frei-a-872300.html>

³²⁰ Cf. Andres et al. (2013), p. 92

³²¹ Cf. Wieland (2004), p. 203

³²² Cf. Andres et al. (2014), p. 96

law, compliance has advanced to the rank of a key management task affecting the trust of both the customer and the financial market.³²³

Binding on each employee, compliance recommendations represent a raft of commitments based on external, legal specifications and intra-company rules.³²⁴ The Sarbanes-Oxley Act (SOX), passed in the U.S. also in 2002, was motivated by a series of bank scandals. As the most important law in the field of compliance, it regulates both commitments and direct measures aimed to avoid irregular behavior.³²⁵

Compliance violations can be classed as infidelity, fraud, disregard of the Federal Data Protection Act, and more serious illegal activities culminating in corruption and bribery. It is difficult to calculate the long-term risk and damage which these latter cause for companies and the economy.³²⁶

Probably the most famous example of corruption and bribery was the case of Enron in 2001, which led to the collapse of one of the biggest companies in the energy sector and the loss of thousands of jobs and billions of shareholder dollars. Since then Enron has stood as a notorious example of the consequences of greed and corruption for the national and global economy.³²⁷

In recent years the effects of compliance violations have taken center stage in the press, yet the topic has been little researched.³²⁸ Some empirical studies show that corruption has negative consequences on economic stability: as well as its negative impact on the investment rate, employment rate, and growth rate of a country, and the concomitant reduction in GDP, corrupt behavior especially threatens the stability of the financial system.³²⁹ Nevertheless it is often regarded as a necessary evil for initial business contact: the World Bank estimates that each year \$1 trillion is paid in bribes. Especially the banking sector is accused of doing little to combat corruption.³³⁰

³²³ Cf. Wieland (2004), p. 203

³²⁴ Cf. Berndt (2019), p. 89

³²⁵ Cf. Sauer (2009), p. 5

³²⁶ Cf. Lambsdorff and Nell (2005), p. 784

³²⁷ Cf. www.zeit.de/2006/06/Enron

³²⁸ Cf. Andres et al. (2014), p. 13

³²⁹ Cf. Kaufmann (2004)

³³⁰ Cf. <http://www.spiegel.de/wirtschaft/korruption-pro-jahr-fliesst-weltweit-eine-billion-dollar-schmiergeld-a-475320.html>

Cheung et al. (2012) have investigated the impact of corruption on company value. They show that \$1 paid as a bribe leads to an \$11 increase in company value, but at the same time to fines and settlement payments,³³¹ and to other risks that are difficult to calculate but mainly show up as serious damage to reputation.³³² The loss of credibility and public trust ultimately weighs more than any measurable financial loss.³³³ A study of business crime conducted by PriceWaterhouseCoopers (PWC) in 2009 showed that 44% of all companies suffer from serious reputation loss caused by criminal activity,³³⁴ of which a substantial proportion can be ascribed to corruption.

Besides its effect on a company's immaterial value, corruption has a direct impact on business financing. Investigating the impact of the announcement of bribes on the financial market, Smith et al. (1983) established a negative reaction in share prices that was directly related to the level of bribery payments. Their investigation supported the theory that the announcement of corrupt practices undermines a company's share price because a turbulent future is henceforth predicted for the company.³³⁵ Hamilton and Rao (1996) agreed with this assumption in their study. They investigated 58 cases between 1989 and 1993 in the U.S., including those of bribery, and showed that an negative abnormal return arises monthly in the wake of such an announcement.³³⁶

Karpoff et al. (2009) demonstrated that bribes lead not only to a negative reaction in share value but to significant costs for the company as well. They found that on the day of the announcement of corrupt behavior the shareholder value declined. Focusing on the whole period from the announcement of the bribery to the point when counter-measures took effect, a decrease in shareholder value could be seen. Compared with a company that had not shown corrupt behavior of any kind, the average cost of equity rose.³³⁷

Fan et al. (2008) studied the impact of corrupt behavior on a company's capital structure. In this context the ratio of debt to equity is crucial for the rating of

³³¹ Cf. Zeume (2013), p. 1

³³² Cf. Lambsdorff and Nell (2005), p. 784

³³³ Cf. <http://www.pwc.de/de/pressemitteilungen/2009/schaden-durch-wirtschaftskriminalitaet-steigen-drastisch-imageverluste-wiegen-schwer.jhtml>

³³⁴ Cf. <http://www.pwc.de/de/pressemitteilungen/2009/schaden-durch-wirtschaftskriminalitaet-steigen-drastisch-imageverlust-wiegen-schwer.jhtml>

³³⁵ Cf. Smith et al. (1984), p. 154

³³⁶ Cf. Rao and Hamilton (1996), p. 1321

³³⁷ Cf. Karpoff et al. (2009), p. 24

internationally operating companies. In this respect the payment of bribes can lead to a wrong classification. Fan proved that the debt ratio of corrupt companies decreased in comparison to companies acting in compliance, and in particular that long-term debt decreased. The investigation revealed a financial advantage that remained as long as the corrupt link between two parties existed. This advantage faded as soon as the corruption was revealed. Along with this investigation Fan et al. examined whether the fading advantage had an influence on shareholder value. Results indicated that the value of the company decreased in the wake of stock market reaction.³³⁸

Summary: All the results lead to the conclusion that compliance violations, characterized by the discovery of corruption or bribery, on the one hand impact the financial market, and on the other hand lead to a loss of reputation. Diminishing credibility in the company results in a loss of trust. When it comes to the cause of corruption and bribery, Lasthuizen et al. (2011) see this as lack of integrity, a condition which the resultant criminal activities inevitably further exacerbate.³³⁹

3.5 Class-action lawsuits

Since little has been written on class-action lawsuits in the relevant literature, this section will be completed with a brief case study. In class action lawsuits one or more parties sue representatively for a number of other parties, or several plaintiffs sue several similarly acting companies.³⁴⁰ The number of plaintiffs varies from a low double-digit number up to millions.³⁴¹ Loughran et al. (2007) inspected 10,000 annual reports between 1994 and 2006 with a focus on terms and expressions related to ethics.³⁴² They found that especially companies suffering from class-action lawsuits, as well as from bad corporate governance, used such expressions in their annual

³³⁸ Cf. Fan et al. (2008), p. 360

³³⁹ Cf. Lasthuizen et al. (2011), p. 389

³⁴⁰ Cf. Koku (2005), p. 510.

³⁴¹ Cf. Koku (2005), p. 510.

³⁴² Cf. Loughran et al. (2007), p. 6.

reports.³⁴³ The authors evaluated these findings as a lack of integrity, in line with the definition of Erhard et al. (2009).³⁴⁴

Billings et al. (2012) cite shareholder class-action lawsuits to illustrate how the literature focuses on the influence of compliance cases on shareholder earnings.³⁴⁵ They show that close to the date of submission of a shareholders' class-action lawsuit the defendant's bond earnings decrease significantly and the corresponding trade volume increases.³⁴⁶ Vermeulen and Zetsche (2010) show that shareholder class-action lawsuits are generally used improperly and have a negative impact on the company concerned.³⁴⁷

In the current lawsuit between Dandong and Pinnacle Performance Ltd., several investors from Singapore are claiming the status of a class-action law suit.³⁴⁸ The main accusation against the parent company, Morgan Stanley, is that the Synthetic Collateralized Debt Obligations (CDOs) had to fail because of the way they were constructed.³⁴⁹ On top of that Morgan Stanley took money out of these deals.³⁵⁰ Class-action lawsuits are generally time and cost intensive and harm the defendant's reputation.³⁵¹ This is why settlements out of court are favored.³⁵² Considering the fact that the process has been running as an individual suit since October 2010, an agreement out of court, including a settlement payment, may well come soon.³⁵³

³⁴³ Cf. Loughran et al. (2007), p. 16.

³⁴⁴ Cf. Loughran et al. (2007), p. 15 f.

³⁴⁵ Cf. Billings et al. (2012), p. 1.

³⁴⁶ Cf. Billings et al. (2012), p. 3.

³⁴⁷ Cf. Vermeulen and Zetsche (2010), p. 2.

³⁴⁸ Cf. Bloomberg (2013b).

³⁴⁹ Cf. Bloomberg (2013b):

³⁵⁰ Cf. Bloomberg (2013b).

³⁵¹ Cf. Koku (2005), p. 514.

³⁵² Cf. Koku (205), p. 514.

³⁵³ Cf. Bloomberg (2013b).

3.6 Misuse, embezzlement and misappropriation

Cases of misuse in the banking sector are often connected with insider information. A recent example is the U.S. bank Goldman Sachs.³⁵⁴ A former director of the bank, Rajat Gupta, was sentenced to two years imprisonment on October 24, 2012 for giving insider information to the hedge fund manager Raj Rajaratnam four years earlier.³⁵⁵ In 2012 two further employees of Goldman Sachs working in the Taiwan office were under suspicion of passing on insider information.³⁵⁶ After his conviction Gupta said he had lost a reputation he had spent years building.³⁵⁷

Cases of embezzlement may be a consequence of poor internal controls in a company. The British Standard Chartered Bank in Taiwan had to pay a fine of \$168,500 because its internal controlling had failed to detect a misappropriation of client funds in connection with credit cards in time.³⁵⁸ The assumption that in cases of bad internal control systems other control devices such as screening will not function satisfactorily is self-evident.

³⁵⁴ Cf. Bloomberg (2013e).

³⁵⁵ Cf. Bloomberg (2013c).

³⁵⁶ Cf. Bloomberg (2013e).

³⁵⁷ Cf. ZEIT ONLINE (2013).

³⁵⁸ Cf. Bloomberg (2013f.).

4 Hypotheses and Variables

This chapter is based on the previous chapters. Chapter 2 explained the problem that occurs when separating ownership and control, as well as the theoretical background of immaterial values like reputation and integrity. After the explanation of the process of certification, which serves for a better understanding of the development of this thesis, Chapter 3 formulated the current state of research regarding the impacts of misbehavior on performance and costs of corporate misbehavior.

Six hypotheses will now be formulated to check whether a bank's integrity and reputation have an impact on costs and performance in the process of certification. The following step will explain the approach of this thesis in creating new variables for integrity, as well as the application of the Fortune Most Admired Score.

4.1 Development of the hypotheses

The aim of this thesis is to investigate the impact of underwriters' integrity and reputation on companies and investors in the bond market. Trust in underwriters is very important for companies, because they need their services to issue bonds in the market, as well as for investors, who act as buyers in the market and take the risk of financial loss. In the following empirical part of this thesis the point of view of both parties is, therefore, relevant, and checks will be made for a significant connection to integrity and reputation.

The first step is to analyze the impact on corporate bond performance. If more than one lead underwriter acts, the total number of underwriters will be termed a syndicate in the sense of Andres et al. (2014).³⁵⁹ The pool of data accessed here contains cases of bond issues arranged by up to five underwriters.

According to Andres et al. (2014) and the literature quoted there, investment banks, in their function as lead underwriters, have the elemental duty of screening, which means that they have to select those companies whose bond issues they recommend and those they reject. Hence the lead underwriter will choose the issuer and analyze the bonds on offer.³⁶⁰ In the process of certification, each bank defines its own underwriting standards, and due to their diversity they play an important role in the screening process. Banks that pursue high underwriting standards can be expected to be extremely accurate in their screening and focus on the quality of the issuer and its corporate bonds. Given the interaction with investors, high screening standards should then be reflected in the performance of supervised corporate bonds.

Bouvard and Levy (2011) argue that banks with a higher reputation improve the quality of information in the capital market. The bank's reputation affects the market positively, so that companies issuing bonds there perceive the market as more attractive for investments.³⁶¹

³⁵⁹ Cf. Andres et al. (2014), p. 10.

³⁶⁰ Cf. Andres et al. (2014), p. 32.

³⁶¹ Cf. Bouvard and Levy (2011), p. 1.

In line with Andres et al. (2014) the bank's influence in their role as underwriter will be checked here in the bond market.³⁶² But the focus of this thesis lies on both reputation and integrity, and reputation is measured differently. More precisely it is a quality of corporate bonds supervised by high integrity underwriters. It is the purpose of this study to determine whether the integrity and reputation of an underwriter or syndicate has an effect on supervised bonds, or in other words if banks with high integrity or reputation apply better underwriting standards.³⁶³ The corresponding hypotheses are:

H₁ a): The higher the underwriter's or syndicate's integrity, the better the performance of the underwritten bond.

H₁ b): The higher the underwriter's or syndicate's reputation, the better the performance of the underwritten bond.

The first hypothesis will be tested with a logit regression analysis using "first rating action downgrade" as dependent variable, following Andres et al. (2014).³⁶⁴ This variable takes the value of 1 if a downgrade occurs, and zero otherwise.³⁶⁵

Lando and Skødeberg (2002) see the dependent variable as appropriate because it generates an adequate uniform distribution. If bond default were chosen as the measure, the distribution would be falsified by the asymmetrical appearance of the event: bond default would be classified as rare.³⁶⁶

Andres et al. (2014) describe the significant negative influence of a downgrade on the bond price. They continue that downgrades have a negative price effect and can lead to more own-capital backing, which obviously results in less liquidity.³⁶⁷ In contrast to an upgrade, a downgrade is more important for the empirical analysis.³⁶⁸

³⁶² Cf. Andres et al. (2014), p. 3.

³⁶³ In this analysis the bank's reputation is still being controlled.

³⁶⁴ Cf. Andres et al. (2014), p. 8.

³⁶⁵ Cf. Andres et al. (2014), p. 8.

³⁶⁶ Cf. Lando and Skødeberg (2002), p. 424.

³⁶⁷ Cf. Wansley et al. (1992), Hand et al. (1992), Hite and Warga (1997).

³⁶⁸ Cf. Andres et al. (2014), p. 8.

Impact on performance will affect pricing, as if the market were conscious of the bank's integrity and reputation.³⁶⁹ This is the reason for testing whether the market incorporates the future performance of the bond in its pricing. Pricing is measured on the basis of yield spread, which is the second variable. As already shown in this thesis, and concordantly with Andres et al. (2014), yield spread is the difference between the bond return and the U.S. Treasury with the same period of validity.³⁷⁰ Hence it constitutes the risk-adjusted financial costs of the bond issuer.

As an alternative measure to yield spread for determining company costs, gross spread – a measure of underwriting fees – can be used.³⁷¹ Following Livingston and Miller (2000) as well as Fang (2005), gross spread has to be paid to the underwriter as a compensation for their services during the issue of bonds. If banks are, in fact, associated with better underwriting standards, this may be reflected in the underwriting fees, because issuers are willing to pay more to banks with higher standards. The higher willingness to pay could be explained by a lower risk due to the relationship between issuer and underwriter, because banks with high integrity and reputation will have best practices and customer focus.³⁷² Hence the second hypothesis states:

H₂ a): The higher the syndicate of underwriter's integrity, the higher the gross spread.

H₂ b): The higher the syndicate of underwriter's reputation, the higher the gross spread.

Subsequent analysis along these lines will determine whether an underwriter's integrity and reputation have an influence on the performance of corporate bonds and hence on the pricing of underwriters' fees.

³⁶⁹ Cf. Andres et al. (2014), p. 9.

³⁷⁰ Cf. Andres et al. (2014), p. 9.

³⁷¹ Cf. Andres et al. (2014), p. 4.

³⁷² We assume that syndicates with less integrity will charge lower fees, because the issuer's willingness to pay for the underwriter is lower. An adequate reason is the question of trust.

4.2 Development of variables for integrity and reputation

Since the focus of this study lies on the impact of integrity, the first step is to establish variables that make it possible to measure that quality. However, it is difficult to find variables that would reliably measure integrity as defined by Simons (1999) and Jensen (2009), whose work was discussed in the theoretical part of this thesis. The converse approach – creating variables for violations of integrity – is in fact more promising, as violations of integrity can be measured more easily. Given the focus of this thesis on the behavior of banks, it is not important whether actions detrimental to integrity have been performed intentionally or accidentally. Either way they harm trust.

Motivated by the cases mentioned in the introduction to this thesis, in which banks lost trust due to their actions (e.g. settlement payments), the following seven variables are suggested as means to measure violations of integrity:

1. Restatements of operating results
2. Settlement payments
3. Money-laundering
4. Corruption and bribery
5. Class action lawsuits
6. Embezzlement and misappropriation
7. Misuse

The first variable, restatements of operating result, follows several authors who have already connected restatements with integrity.³⁷³ The following seven variables are all new and to the best of my knowledge have not been used so far in economic science as proxies for integrity. Settlement payments as well as class action lawsuits represent actions which indicate some kind of confession of guilt, which always brings a loss of trust in its wake. Money-laundering, corruption, bribery, embezzlement, misappropriation and misuse are actions that violate the law and therefore also cause mistrust once they become known. Finally, regulatory enforcements always have a good reason for being set up. These enforcements make lack of integrity on the part of their subject public. If a bank has not committed such violations, it can be deemed to possess integrity.

³⁷³ Cf. Gaa (2007); Wang et al. (2013); Cao et al. (2012); Graham et al. (2007).

In addition to integrity, the influence of reputation is also important here. In this context the variable is whether or not a bank's reputation score is higher than average. The relevant measurement procedure has been described in detail in 2.2.3: The Fortune Score as a reputation measure.

4.3 Control variables

The set of variables is completed with the control variables which have already proven significant in the context of bond certification. A short description of the main control variables follows. These are based on Andres et al. (2014) and the literature cited there.³⁷⁴

Credit ratings: Following Guedhami and Pittman (2008) as well as Andres et al. (2014), Standard & Poor's (S&P) issue-specific credit rating is applied on notch level to test the impact on pricing and performance in the process of certification of corporate bonds.³⁷⁵

Number of underwriters: A very important issue for the marketing of securities is underwriting syndicates, as their promotional efforts can influence investors.³⁷⁶ Corwin and Schulz (2005) establish that syndicates with more underwriters lead to a revision of offer prices in equity IPOs.³⁷⁷ The approach of Puri (1996) and Andres et al. (2014) is followed here when testing for numbers of underwriters.³⁷⁸

NYSE/AMEX listing: Affleck-Graves et al. show that other listed firms have lower minimum listing requirements than those listed on NYSE or AMEX.³⁷⁹ Baker et al. (1999) find that there is a connection between higher firm visibility and NYSE listings.³⁸⁰ Moreover, the exchanges' quantitative and qualitative standards are given if a firm is listed on NYSE or AMEX. In this context Datta et al. (1997) show that costs

³⁷⁴ Cf. Andres et al. (2014), p. 14-19.

³⁷⁵ Cf. Guedhami and Pittman (2008), p. 38-58; Andres et al. (2014), p.16-19.

³⁷⁶ Cf. Cook et al. (2006), p. 35-61.

³⁷⁷ Cf. Corwin and Schulz (2005), p. 443-486.

³⁷⁸ Cf. Puri (1996), p. 373-401.

³⁷⁹ Cf. Affleck-Graves et al. (1993), p. 99-108.

³⁸⁰ Cf. Baker et al. (1999), p. 46-54.

of IPOs of corporate bonds are lower if a firm is listed on NYSE or AMEX.³⁸¹ Summarizing, the borrowing costs of firms listed on NYSE or AMEX, when acting as issuers in bond markets, can be expected to be lower.

Other controls: Further variables used here all concern initial yield spreads. Here again Andres et al. (2014) are followed, as their approach is similar to that of this thesis. These variables include callable bonds³⁸², the BofA/Merrill Lynch high-yield (HY) index spread over 10-year Treasuries³⁸³, bond maturity³⁸⁴, and zero or step-up bonds.³⁸⁵ The following variables have been little researched so far: equity claw back provisions³⁸⁶ and SEC Rule 144A issues.³⁸⁷ All regressions control for economic and industry effects using indicator variables for years and industries (first-digit SIC codes).

The following Table 2 gives a clear overview of all variables included in the regression analysis, as well as a detailed description of each one. Pair-wise correlations are shown in Table 3.

Table 1: Description of employed variables

Variables	Definition	Literature
Callable	Dummy variable that takes a value of one if the bond is callable, zero otherwise.	<i>Livingston/Miller (2000), Fang (2005)</i>
Clawback	Dummy variable that takes a value of 1 if the bond has an equity clawback commission, zero otherwise.	<i>Goyal et al. (1998), Daniels et al. (2009)</i>
Credit rating	The issuing specific credit rating on notch level from S&P at the point of the bond issue.	<i>Fenn (2000), Andres et al. (2013)</i>
Downgrade	Dummy variable that takes a value of 1 if the bond's first rating action is a downgrade (in comparison to an upgrade), zero otherwise. Issue specific credit rating from Standard & Poor (S&P) are being used.	<i>Andres et al. (2013)</i>
Gross spread	Measures the fee underwriters charge for compensation. The gross spread is calculated as the relation of the fee in UUS Dollar	<i>Fang (2005)</i>

³⁸¹ Cf. Datta et al. (1997), p. 379-396.

³⁸² Cf. Livingston and Miller (2000), p. 21-34.

³⁸³ Cf. Friedson and Garman (1998), p. 28-39.

³⁸⁴ Cf. Helwege and Turner (1999), p.1869-1884.

³⁸⁵ Cf. Fenn (2000), p. 383-405.

³⁸⁶ Cf. Goyal et al. (1998), p. 301-320.

³⁸⁷ Cf. Livingston and Zhou (2002), p. 5-27.

relative to the issue volume of the bonds.

High-yield index spread	Measures the return of the B of A/Merrill Lynch High-Yield Master Index for ten years old high yield bonds by risk-free U.S. treasuries.	<i>Fridson/Garman (1998), Andres et al. (2013)</i>
Industry dummies	To control for industry specific effects dummy variables are being used for each industry (following Fama-French 12 industry classifications), which the issuers are part of.	<i>Based on Gande et al. (1997), who use 1-digit SIC codes</i>
Integrity index	Dummy variable that takes a value of 1 if the whole syndicate neither has had a no case of corruption or bribery, restatement, money-laundering nor settlement payment.	<i>To the best of our knowledge not used so far.</i>
Integrity index linear	Dummy variable which that sums up the dummies of the four compliance cases and hence can have a value of 0 to four. The value four stands for the highest integrity of the supervising underwriter syndicate.	<i>To the best of our knowledge not used so far.</i>
Make whole	Dummy variable that takes a value of 1 if the bond has a make whole commission, zero otherwise.	<i>Powers/Tsyplakov (2008)</i>
Maturity	The logarithm of maturity in the bond's months.	<i>Fenn (2000), Fang (2005)</i>
NYSE/AMEX	Dummy variable that takes a value of line 1 if the issuing firm is listed on either NYSE or AMEX, zero otherwise.	
Proportion LUs with bribery or corruption case 3 yrs	Divides the number of lead underwriters (LU) which supervise a bond in a syndicate of underwriters and which have had a case of bribery/corruption in the last three years before the bond issue by the number of lead underwriters (LU) which supervise a bond (in a syndicate).	<i>To the best of our knowledge not used so far.</i>
Proportion LUs with class action lawsuit case 3 yrs	Divides the number of lead underwriters (LU) which supervise a bond in a syndicate of underwriters and which have had a case of class action lawsuit in the last three years before the bond issue by the number of lead underwriters (LU) which supervise a bond (in a syndicate).	<i>To the best of our knowledge not used so far.</i>
Proportion LUs with compliance case 3 yrs	Divides the number of lead underwriters (LU) which supervise a bond in a syndicate of underwriters and which have had a case of compliance in the last three years before the bond issue by the number of lead underwriters (LU) which supervise a bond (in a syndicate). Compliance cases include bribery/corruption, class action lawsuits, money-laundering, misuse, misappropriation, embezzlement and settlement payments.	<i>To the best of our knowledge not used so far.</i>
Proportion LUs with misuse, misappropriation or embezzlement case 3	Divides the number of lead underwriters (LU) which supervise a bond in a syndicate of underwriters and which have had a case of misuse, misappropriation or embezzlement in the last three years before the bond issue by the number of lead underwriters	<i>To the best of our knowledge not used so far.</i>

yrs	(LU) which supervise a bond (in a syndicate).	
Proportion LUs with money-laundering case 3 yrs	Divides the number of lead underwriters (LU) which supervise a bond in a syndicate of underwriters and which have had a case of money-laundering in the last three years before the bond issue by the number of lead underwriters (LU) which supervise a bond (in a syndicate).	<i>To the best of our knowledge not used so far.</i>
Proportion LUs with settlement payment case 3 yrs	Divides the number of lead underwriters (LU) which supervise a bond in a syndicate of underwriters and which have had a case of settlement payment in the last three years before the bond issue by the number of lead underwriters (LU) which supervise a bond (in a syndicate).	<i>To the best of our knowledge not used so far.</i>
Time dummies	To control macroeconomic effects and time trends the dummy variables are being used for each year of the observation period (each calendar year of the bond issue.).	<i>Fang (2005), Andres et al. (2013)</i>
Public firm	Dummy variable that takes a value of 1 if the issuer is a publicly traded company, zero otherwise.	<i>Fenn (2000), Andres et al. (2013)</i>
Rule 144A	Dummy variable that takes a value of 1 if the bond is issued under SEC Rule 144A which stands for an accelerated bond issue, zero otherwise.	<i>Fenn (2000), Andres et al. (2013)</i>
Senior unsecured	Dummy variable that takes a value of 1 if is senior unsecured (but has a high seniority in capital structure), zero otherwise.	<i>Based on John et al. (2010), Andres et al. (2013)</i>
Syndicate w/o compliance case 3 yrs.	Dummy variable that takes a value of 1 if the syndicate of the supervising lead underwriters has not had a case of compliance before the bond issue. Compliance cases cover the following separately investigated categories: corruption and bribery, money-laundering, restatements of operating results, settlement payments, class action lawsuits, misappropriation and embezzlement, misuse, regulatory enforcements.	<i>To the best of our knowledge not used so far.</i>
Top 8 lead underwriters	Dummy variable that takes a value of 1 if the lead underwriter of a bond is among the top 8 lead underwriters in the yearly league table of Bloomberg. If a bond is supervised by more leading underwriters in line with Fang (2005), the one with the highest ranking in the league table is chosen (the maximum of the underwriter's reputation).	<i>Fang (2005)</i>
Volume	The logarithm of the bond's issuing volume.	<i>Puri (1996), Andres et al. (2013)</i>
Yield spread	Pricing is measured by yield spreads. The yield spread represents the risk-adjusted costs of financing the bond issuer. Following Andres et al. (2013) yield spread is equal to the offering return minus the return of a US Treasury or similar	<i>Livingston/Miller (2000), Andres et al. (2013)</i>

	maturity at the issuing date.	
Zero or step-up	Dummy variable that takes a value of 1 if the bond has the coupon type step-up or zero coupon, zero otherwise.	<i>Fenn (2000), Andres et al. (2013)</i>
# Covenants	Measures the number of covenants a bond has.	<i>Based on Powers/Tsyplakov (2008)</i>

Table 2: Pair-wise Correlations

#	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	Callable	1.00																										
2	Clawback	0.06	1.00																									
3	Credit rating	-0.10*	-0.06	1.00																								
4	First-rating down	-0.03	-0.05	0.09*	1.00																							
5	Fract bribecorrupt	0.10*	0.13*	-0.12*	-0.20*	1.00																						
6	Fract classaction	0.13*	0.07	-0.06	-0.23*	0.34*	1.00																					
7	Fract compcases	0.12*	0.07	-0.07	-0.15*	0.52*	0.44*	1.00																				
8	Fract laundering	0.09*	-0.02	0.02	-0.10*	-0.08*	0.31*	0.64*	1.00																			
9	Fract misemb	0.00	-0.00	-0.01	0.08*	-0.10*	0.08*	0.56*	0.16*	1.00																		
10	Fract restatements	0.08*	-0.08*	0.03	-0.12*	0.01	0.39*	0.23*	0.32*	0.06	1.00																	
11	Fract settlementp	0.08*	0.08*	-0.09*	-0.04	0.20*	0.46*	0.17*	-0.09*	0.19*	0.21*	1.00																
12	Gross Spread	0.09*	0.51*	-0.50*	-0.01	0.09*	0.02	0.04	-0.02	-0.02	-0.08*	0.05	1.00															
13	LU Rep lavg	0.04	-0.14*	0.28*	-0.15*	0.11*	0.36*	0.10*	0.09*	-0.05	0.18*	0.13*	-0.16*	1.00														
14	LU Rep lmdian	0.06	-0.14*	0.28*	-0.15*	0.12*	0.36*	0.10*	0.08*	-0.37*	0.17*	0.13*	-0.16*	0.99*	1.00													
15	LU NoComplCase	-0.09*	-0.02	0.02	0.17*	-0.51*	-0.51*	-0.81*	-0.51*	0.00	-0.31*	-0.17*	0.01	-0.17*	-0.17*	1.00												
16	LU was LU	-0.07	-0.07	0.07	-0.04	0.01	0.02	-0.04	-0.07	0.00	0.07	0.05	-0.07	0.08*	0.09*	-0.04	1.00											
17	Make whole	0.55*	-0.14*	0.04	-0.00	0.09*	0.21*	0.12*	0.09*	0.03	0.11*	0.14*	-0.04	0.08*	0.08*	-0.14*	-0.06	1.00										
18	Maturity	0.14*	-0.14*	-0.13	0.08*	0.01	0.02	0.03	0.01	0.05	-0.03	0.08*	0.18*	-0.03	-0.04	-0.01	-0.06	0.17*	1.00									
19	Numb Covenants	0.15*	0.72*	0.60*	-0.11*	0.16*	0.18*	0.11*	0.06	-0.04	0.01	0.11*	0.42*	-0.08*	-0.08*	-0.08*	-0.08*	0.01	0.16*	1.00								
20	NYSE/AMEX	0.06	-0.01	0.06	-0.08*	0.05	0.16*	0.03	0.04	-0.06	0.08*	0.02	-0.02	0.21*	0.21*	-0.06	-0.00	0.08*	0.03	0.07	1.00							
21	Public Firm	0.06	-0.02	0.06	-0.12*	0.12*	0.22*	0.10*	0.09*	-0.06	0.08*	0.04	-0.04	0.25*	0.25*	-0.14*	-0.02	0.11*	0.01	0.11*	0.85*	1.00						
22	Putable	0.06	-0.01	-0.01	-0.02	-0.01	0.02	-0.01	-0.01	-0.01	0.02	0.01	-0.01	0.04	0.04	0.02	0.02	0.01	0.02	-0.00	0.02	0.01	1.00					
23	Rule 144a	-0.00	0.06	-0.04	0.06	-0.03	-0.10*	-0.05	-0.03	-0.02	-0.06	-0.07	0.24*	-0.05	-0.05	0.06	0.01	-0.06	-0.00	-0.03	-0.01	-0.02	-0.00	1.00				
24	Senior unsecured	-0.06	-0.44*	0.35*	0.02	-0.05	0.04	-0.00	0.02	0.02	0.08*	-0.00	-0.28*	0.10*	0.10*	-0.03	0.02	0.11*	-0.10*	-0.34*	0.07	0.09*	0.01	-0.05	1.00			
25	Top 8 Lead Under	0.07	-0.06	0.02	0.11*	0.10*	0.16*	-0.10*	-0.15*	-0.14*	0.16*	0.22*	-0.01	0.07	0.08*	-0.06	0.07	0.11*	0.02	0.01	0.10*	0.10*	0.01	-0.00	0.04	1.00		
26	Volume	-0.17*	-0.21*	0.31*	0.06	0.01	-0.05	-0.05	-0.05	-0.04	-0.03	-0.11*	-0.17*	0.15*	0.15*	-0.01	0.10*	-0.14*	-0.04	-0.30*	-0.03	-0.01	-0.00	-0.00	0.17*	0.02	1.00	
27	Yield Spread	0.06	0.45*	-0.06	-0.03	0.07	0.18*	0.02	0.07	-0.14*	0.13*	0.04	0.42*	-0.12*	-0.12*	-0.04	-0.08*	-0.06	0.01	0.42*	-0.02	-0.03	0.07	0.05	-0.2*	0.06	-0.1*	1.00

This table reports the pair-wise correlations of the main variables employed in the regression analyses. All variables are defined in Table 1. Asterisks (*) indicate significance at least at the 5% level.

5. Methodology

The aim of this chapter is to establish the theoretical background for the regression analysis to be conducted in Chapter 6. Chapter 4 has already initiated the first steps of the empirical analysis by describing the development of the variables and hypotheses relating to integrity.

To check the hypotheses and the implemented variables a model is necessary which makes that possible. The method applied in this thesis is regression analysis. The empirical study involves multiple regression analysis, as well as binary logistic regression analysis, so those two analytic models will be explained in this chapter. The chapter thus facilitates understanding of the subsequent empirical section.

5.1 Basics of the Multiple Linear Regression Model

In general a classical multiple linear regression model investigates the connection between a dependent variable Y and various independent variables X_1, X_2, \dots, X_p . The regression function with p regressors is:

$$y_v = \beta_0 + \beta_1 x_{1v} + \beta_2 x_{2v} + \dots + \beta_p x_{pv} + \varepsilon_v \quad \text{with } v = 1, \dots, n. \quad (1)$$

where ε represents an error term for which the following characteristics are valid: $E(\varepsilon_v) = 0$ and $\text{Var}(\varepsilon_v) = \sigma^2$; ε_v and ε_w are independent for all $v \neq w$.³⁸⁸ Every influential variable x_j has its own effect on the target Y which is described by the regression coefficient β_j .³⁸⁹ The principle of the regression model is to attribute the change in the dependent variable Y to the influence of the model, depending on specified variables.³⁹⁰ The regression estimate principally only seeks to determine the strength of the impact of the independent variables on the dependent variable.³⁹¹

The application of multiple linear regression analysis needs an approximation of the coefficients.³⁹² In this case β_0 stands for the intercept, or the estimated intercept point, of the regression line with the Y axis, while the coefficients β_j specify the estimated gradient of the regression axis.³⁹³ During the further procedure these unknown constants are marked as $\hat{\beta}_0, \hat{\beta}_1, \dots, \hat{\beta}_p$.³⁹⁴ To estimate the regression coefficients the ordinary least squares method is generally used. This minimizes the sum of the squared distances corresponding to the following function:

$$\sum_{v=1}^n (y_v - (\hat{\beta}_0 + \hat{\beta}_1 x_{1v} + \hat{\beta}_2 x_{2v} + \dots + \hat{\beta}_p x_{pv}))^2 = \min. \quad (2)$$

³⁸⁸ Cf. Schlittgen (2008), p. 421 and 443.

³⁸⁹ Cf. Sachs and Hedderich (2009), p. 654.

³⁹⁰ Cf. Urban and Mayerl (2011), p. 39.

³⁹¹ Cf. Urban and Mayerl (2011), p. 39.

³⁹² Cf. Schlittgen (2008), p. 444.

³⁹³ Cf. Urban and Mayerl (2011), p. 42.

³⁹⁴ Cf. Gani et al. (2010), p. 310.

³⁹⁵ Cf. Schlittgen (2008), p. 444.

In the multiple regression model the interpretation of the regression coefficients is of particular interest. The coefficient's sign reveals whether the independent variable has a positive or negative impact on the dependent variable.³⁹⁶ Furthermore, the value of the β_j signals in which way the command variable changes if the appropriate variable x_j rises by one and all the other factors are kept constant.³⁹⁷

In addition, the multiple regression model tests single coefficients for their explanatory power and determines to what extent they are really necessary.³⁹⁸ Statistical tests help investigate this connection.

5.2 Hypothesis Testing on Statistical Significance

An hypothesis testing is conducted to inspect whether conclusions about control samples apply to the population as well.³⁹⁹ Hypotheses are conclusions derived from general theory. In an empirical study a distinction is made between the alternative hypothesis and the null hypothesis. Alternative hypotheses are innovative statements that aim to extend the current state of research. Consequently, it will be exciting to see whether reality is mirrored more precisely by the innovative conclusions made in the empirical analysis in Chapter 6 than could have been foreseen from the theories described in Chapter 3.⁴⁰⁰

Prior to determining the statistical significance of the results in the regression analysis, a competing null hypothesis has to be formulated; this expresses the complementary prediction to the alternative hypothesis as true. The inspection of the alternative hypothesis assumes the denial of the null hypothesis. Therefore showing that the null hypothesis is wrong opens the way to acceptance of the alternative hypothesis.⁴⁰¹

³⁹⁶ Cf. Schlittgen (2008), p. 446.

³⁹⁷ Cf. Schlittgen (2008), p. 446.

³⁹⁸ Cf. Schlittgen (2008), p. 447.

³⁹⁹ Cf. Esser (2011), p. 451.

⁴⁰⁰ Cf. Bortz (2000), p. 108

⁴⁰¹ Cf. Bortz (2000), p. 110.

Nevertheless, the difficulty remains that the results of the investigation are based on a control sample, but the hypotheses refer to the population as such.⁴⁰²

Hypothesis tests, as well as significance tests, address the question whether an effect in a control sample is random or whether it is representative for the whole population.⁴⁰³ Two mistakes may happen here. On the one hand the alternative hypothesis can be erroneously accepted although the null hypothesis is valid for the population. This is called α error or type 1 error. On the other hand the null hypothesis may be accepted although the alternative hypothesis is valid for the population. The second mistake is called β error or type 2 error.⁴⁰⁴ In practice the latter error is rarely taken into consideration, because its probability can only be determined by additional assumptions with regard to the content.⁴⁰⁵

Significance tests primarily determine the probability of an α error. In this thesis the tests focus on differences in the arithmetic average between population and control sample. These scatter around null and follow a distribution. In the case of small control samples they follow the so called t distribution, and in the case of bigger control samples they follow the standard normal distribution or z distribution. A test statistic can be estimated from sample size, arithmetic average and variances. This test statistic is standardized by a standard scale which matches either the t or the z distribution.⁴⁰⁶ In this way the results of different studies become comparable.⁴⁰⁷

The test statistic that inspects each coefficient for the null hypothesis $H_0 : \beta_j = 0$ is defined as:

$$t_j = \frac{\hat{\beta}_j}{\hat{\sigma}_{\hat{\beta}_j}}. \quad (3)$$

⁴⁰² Cf. Bortz (2000), p. 110.

⁴⁰³ Cf. Bortz (2000), p. 437.

⁴⁰⁴ Cf. Bortz (2000), p. 110

⁴⁰⁵ Cf. Esser et al. (2011), p. 442.

⁴⁰⁶ The explicit calculations of t distributions and z distributions consciously are not part of the explanations in this thesis.

⁴⁰⁷ Cf. Esser et al. (2011), p. 451.

⁴⁰⁸ Cf. Sachs and Hedderich (2009), p. 361.

Where $\hat{\beta}$ designates the standard error of the estimated regression coefficients.⁴⁰⁹

The level of significance results from the tests of differences in arithmetic averages conducted in this thesis as a test statistic. It describes the probability of an α error, but the significance does not allow any conclusions concerning the probability of its existence or of its theoretical importance on the effect.⁴¹⁰ To guarantee comparability and the quality of the present research, it has been decided not to deny the null hypothesis until the probability of an error is less than or equal to five percent. If this probability is less than or equal to one percent it is called highly significant.⁴¹¹

If the hypothesis $H_0 : \beta_j = 0$ is correct, then the test statistics have t distributions with $(n - (p+1))$ variances with a normal error distribution curve.⁴¹² Here the variance determines the level of freely available observations that arise from the sampling scope n minus the level of parameters estimated from the sample statistic.⁴¹³ The p-value mentioned above, which determines the relevant variable as eminent or not, appears to be more differentiated here than has so far been explained. A three star symbolism has established itself in this context to facilitate recognition of the significance of the results.⁴¹⁴ The empirical analysis following in Chapter 6 accepts this convention within the following limits:

[*] $0.10 \geq P \geq 0.05$, [**] $0.05 \geq P \geq 0.01$, [***] $P \leq 0.01$.

Hence a value of $P > 0.10$ is not significant in this context.

The coefficient of determination R^2

After the procedure of regression analysis, it is necessary to investigate to what extent the model's assumptions are fulfilled. Thus the coefficient of determination R^2 is calculated, giving an indication of the reproduction level between model and reality. It

⁴⁰⁹ Cf. Groß (2010), p. 197.

⁴¹⁰ Cf. Esser et al. (2011), p. 454

⁴¹¹ Cf. Bortz (2000), p. 114.

⁴¹² Cf. Schlittgen (2008), p. 447.

⁴¹³ Cf. Sachs and Hedderich (2009), p. 251.

⁴¹⁴ Cf. Sachs and Hedderich (2009), p. 379.

can be described as the quality of the model.⁴¹⁵ If the result comes close to 1, the reproduction will be more precise, and hence the dependent variable can be explained better.⁴¹⁶

The explained segment of the variance of the y values generally rises automatically with the increase of regressors in the linear correlation.⁴¹⁷ As a result, the coefficient of determination cannot shrink if the number of independent variables increases.⁴¹⁸ If the R^2 is small and therefore signals a low level of the variance to be explained, the x values can have a significant influence.⁴¹⁹

Binary logistic regression

A binary logistic regression, which is also known as the logit model for binary data, is usually used when the dependent variable Y has only two parameter values: e.g. "is true" ($Y = 1$) or "is not true" ($Y = 0$).⁴²⁰ It is obvious then that the dependent variable is binary, or coded as binary.⁴²¹ In contrast to a linear regression, which determines the level of the dependent variable itself, a logistic regression estimates the likelihood of occurrence concerning the chosen dependent variables Y.⁴²² This calculates the predicted value of conditional probability.⁴²³ The aim of a binary logistic regression is to estimate the probability with which the coefficient β_j reacts on the independent variable x_j .⁴²⁴ During the process of binary logistic regression it is essential to investigate in which direction, positive or negative, and how strongly each variable influences this probability.⁴²⁵

⁴¹⁵ Cf. Schlittgen (2008), p. 448.

⁴¹⁶ Cf. Sachs and Hedderich (2009), p. 653 f.

⁴¹⁷ Cf. Schlittgen (2008), p. 448.

⁴¹⁸ Cf. Schlittgen (2008), p. 448.

⁴¹⁹ Cf. Dancer and Tremayne (2005), p. 485.

⁴²⁰ Cf. Urban and Mayerl (2011), p. 331 f.

⁴²¹ Cf. Urban and Mayerl (2011), p. 332.

⁴²² Cf. Albers et al. (2007), p. 199.

⁴²³ Cf. Urban and Mayerl (2011), p. 332.

⁴²⁴ Cf. Albers et al. (2007), p. 199 f.

⁴²⁵ Cf. Albers et al. (2007), p. 204.

Part of the modeling is unknown success probability π , whose influence can depend on various independent variables.⁴²⁶ The conditional probability $P(Y = 1|X = x) = \pi(x)$ is valid for the dependent variable Y .⁴²⁷ The link function in the logit transformation is:

$$g(x) = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p \quad (4)$$

$$\pi(x) = \frac{e^{g(x)}}{1 + e^{g(x)}} \quad \text{with } 0 \leq \pi(x) \leq 1. \quad (5)$$

The transformation of (5) leads to:

$$g(\pi(x)) = \ln \left(\frac{\pi(x)}{1 - \pi(x)} \right). \quad (6)$$

where $g(\pi)$ denotes the logit function.⁴²⁸ In this model the influencing values are assumed as interval-scaled quantitatively ascertained characteristics.⁴²⁹ Binary variables can also be used in this model equation if they are scaled 0/1.⁴³⁰ If multiple independent variables are being investigated in the process of a regression model, the effect (or impact) which each variable adds for explanation of the dependent variable is reflected in the coefficients.⁴³¹

The parameter estimates for testing the null hypothesis $H_0 : \beta_j = 0$ are ascertained by a so called Wald Statistic.⁴³² Instead of t values, which are part of the linear model, z values appear in the logit model:

$$z_j = \frac{\hat{\beta}_j}{\hat{\sigma}_{\hat{\beta}_j}}$$

The interpretation of those P values that correspond to the z values plays an important role for the impact of the corresponding determining factors in the model.⁴³³ As in the

⁴²⁶ Cf. Sachs and Hedderich (2009), p. 675.

⁴²⁷ Cf. Sachs and Hedderich (2009), p. 680.

⁴²⁸ Cf. Schlittgen (2009), p. 204.

⁴²⁹ Cf. Sachs and Hedderich (2009), p. 680.

⁴³⁰ Cf. Sachs and Hedderich (2009), p. 680. The regression model of this thesis contains among other things binary variables.

⁴³¹ Cf. Sachs and Hedderich (2009), p. 684.

⁴³² For detailed information about the method of the Wald Statistic see Sachs/ Hedderich (2009), p. 678 f.

⁴³³ Cf. Groß (2010), p. 227.

linear regression approach, a low P value signals the relevance of the corresponding determining factor.⁴³⁴

Finally pseudo- R^2 gives information about the quality with which the model expresses reality. But pseudo- R^2 ($0 \leq R^2 \leq 1$) is a relative measure indicating that high values signal an improvement in the model adaptation.⁴³⁵ So the interpretation of pseudo- R^2 differs from that of the linear regression, because the explanatory value of the exploited variance in the regression estimate is different.⁴³⁶ For example one problem is that, unlike the coefficient of determination in the linear regression⁴³⁷, pseudo- R^2 rarely reaches values of 0.8 or higher.

⁴³⁴ Cf. Groß (2010), p. 227.

⁴³⁵ Cf. Sachs and Hedderich (2009), p. 687.

⁴³⁶ Cf. Urban and Mayerl (2011), p. 346 f.

⁴³⁷ Cf. Schlittgen (2009), p. 210.

6. Empirical Analysis

Chapter 6 comprises the most important aspects of this thesis, as it presents the data on which the thesis is based. This is followed by an explanation of the set of corporate bonds, together with details of the banks operating as underwriters. The first section of the chapter ends with a description of the integrity and reputation measures, and the second section completes the empirical analysis with a discussion of the results for the main variables, integrity and reputation, and for the control variables, as well as of their influence on performance and costs represented by three dependent variables.

6.1 Data

This section of the thesis describes the data on which the empirical analysis is based. Every single variable in the set of variables and the pair-wise correlations have been shown in Table 2 and Table 3 of chapter 4.

Corporate bonds: Investment banks and lead underwriter are seen as synonymous. The data should help to illuminate the role of underwriters' integrity and reputation in the process of certification, as well as possible consequences due to a lack of integrity or reputation.

To complete the corporate bonds data, information has been collected from Standard & Poor's Capital IQ database.⁴³⁸ This includes all the information on corporate bonds in the U.S. market available in the database, once those bonds have been removed from the data set that do not show any information about the supervising underwriter or about the S&P credit rating assigned on the issuing date. After the removal procedure, 9769 corporate bonds issued by underwriters in the U.S. (more than 6000 of them American) remain for the period 2002-2010. The number of supervising underwriters is between 1 and 5. More detailed information about the allocation of the bond ratings is provided in Table 4.

⁴³⁸ All the data from Standard & Poor's Capital IQ database have been collected during a research visit at Karlsruhe Institute of Technology, Prof. Dr. Ruckes.

Table 3: Data of Misbehavior (2002-2010)

Cases	Cases between 2002-2010 (in total)	Remaining cases of banks (manually checked)
Restatements	3588	625
Settlement Payments	2340	2340
Money-Laundering	445	98
Corruption & Bribery	531	531
Class Action Lawsuits	6375	661
Embezzlement & Misappropriation	409	51
Misuse	401	35
Total	14089	4341

Banks: Between 2002 and 2010, 258 international banks were involved in the process of certification as underwriters. Those 258 banks in the data set can be divided into 84 parent companies and 174 subsidiaries. Although only American corporate bonds are considered here, their underwriters are international.

Integrity Measures: The following cases of compliance are used to establish measures of integrity: restatements of operating results, settlement payments, money-laundering, corruption and bribery, class action lawsuits, embezzlement and misappropriation, misuse, and regulatory enforcements. The information for all of these cases is again taken from the database S&P Capital IQ for the period 2002-2010.

Keyword searches are made in Capital IQ to extract the data for each case of compliance. In the next step each set of data is edited separately and manually, as keyword searches in themselves do not provide firm evidence. For example a keyword search with ‘compliance’ produces results not only for relevant compliance cases but also for news announcing changes in compliance structures. Each and every result must consequently be checked manually to ascertain whether it is a relevant case or not. Furthermore, in cases where S&P Capital IQ is not clear enough for interpretation

an Internet search is necessary. Table 5 gives an overview of the number of cases for each integrity measure, as well as the number of manually checked cases:

**Table 4: Allocation of bond ratings
(bond issues between 2002-2010 in the U.S.)**

Rating	Number of bonds:	Percentage of bonds:
AAA to AA-	391	4
A	293	3
A+	586	6
A-	489	5
BBB+	684	7
BBB	976	10
BBB-	782	8
BB+	391	4
BB	391	4
BB-	684	7
B+	879	9
B	1074	11
B-	1367	14
Without rating	782	8
Total:	9769	100

After these filtering stages, the information gained is matched with the corporate bond data set and the corresponding underwriters by setting up dummy variables. Every question answered with "yes" gets a "1" and stands for a compliance case, and "0" represents the answer "no" for every supervising bank.

Afterwards the numbers and dummy variables are aggregated on bond level and multiple variables are generated for the upcoming analysis. The variables have a value of "1" if none of the supervising underwriters for a bond has had a case of compliance. The variable is then named e.g. "LU w/o 'restatement' case". This procedure is repeated for each of the eight different cases of integrity; on this basis a new variable "LU w/o 'compliance' case is created. This variable has a value of "1" if none of the supervising underwriters for a bond has been involved in a case of compliance.

Furthermore, the ratio of underwriters with a compliance case is calculated on bond level as the percentage of the underwriter syndicate. This variable is called e.g. "Fraction LU restatement case".

Reputation Measure: To measure the impact of bank's reputation a variable with the value of "1" is created if the supervising underwriter has a higher than average reputation. The variable is called "LU Rep FMAC Score Irgavg". This approach to measuring reputation has been explained in detail in 2.2.3 above. The question whether an issuer chooses the same lead underwriter again is investigated with the variable "LU was LU for same Issuer before".

6.2 Empirical findings

The analysis procedure applied here follows Andres et al. (2014). To control for industrial fixed effects, as well as time effects, the Fama French 12 industry classification is used with time dummies. The following section seeks to answer the research questions developed in Chapter 4 of the thesis.

Bond performance and integrity

Since the aim of the present study is to investigate the impact of underwriters' integrity and reputation on companies and investors in the bond market, the first hypothesis will

be tested by means of a logit regression analysis with the dependent variable "first rating action downgrade", to check whether there is a significant connection between trust, as an important issue in the certification process for companies and investors, and integrity and reputation. The dependent variable "first rating action downgrade" supports analysis of the impact of integrity and reputation on bond performance, because investment banks, in their function as lead underwriters, have the elemental duty of screening. They have, therefore, to select those companies they recommend for a bond issue and those they reject. In this context lead underwriters choose the issuer and analyze the bonds to be issued.⁴³⁹ In the process of certification, underwriting standards are defined by each bank independently, and due to this diversity they play an important role in the screening process. Banks that follow high underwriting standards will be extremely accurate in their screening and focus the quality of the issuer and its corporate bonds. Since there is interaction with investors here, high screening standards should be reflected in the performance of the bonds.

The first hypotheses (H_{1a}) and H_{1b}), presented in Chapter 4, are tested with several logit regression analyses. In the first run, the influence of a syndicate of banks defined as possessing integrity is tested; none of these banks has had a case of violation in trust. This should yield a negative effect, indicating that the probability of a downgrade as the next rating action for the bond will decrease. Although the coefficient is as expected, it is not statistically significant at conventional levels (see Table 6, Regression 1). The next investigation focuses on the influence of six different groups of banks that have undergone a class action lawsuit, or case of restatement, bribery and corruption, misuse, misappropriation or embezzlement, settlement, or money-laundering. (Some of the measures of integrity are bundled together here because of their similarity.) A positive impact can be expected, as bad behavior influences both companies' and investors' trust and raises the likelihood of a rating drop as the next rating action. Although for each heading the impact is positive, again none of the results is significant (see Table 6 Regressions 2-7). Summing up, hypothesis 1a) cannot be confirmed, as the results are not statistically significant.

Two reasons for this are possible. First, the selected variables may not measure integrity as well as suggested. Secondly, integrity may be measured correctly but in

⁴³⁹ Cf. Andres et al. (2014), p. 32.

fact it has no influence on the bond market. Hypotheses 2 tests later on whether investors consider integrity as measured by this thesis in their pricing of bonds.

In general, misbehavior is associated with negative consequences for the causer. In certain cases the economic advantages of misbehavior may outweigh the penalties. Moreover, rating agencies will estimate the company's economic situation afterwards as better than it was before. This could explain why the relationship is as expected, but the results are not significant.

Bond performance and reputation

The variable "Parent bank's reputation has a Fortune Most Admired Score larger than average" defines the highly reputable underwriter. Here a negative impact is likely, meaning that the reputation of the underwriter decreases the probability that the bond will be downgraded in the next rating action. All regressions in Table 6 show a significant negative impact at the 1% level, which confirms this hypothesis.

Although this approach is based on Andres et al. (2014), these results do not match theirs. Focusing on the high-yield bond market, Andres et al. show that bonds underwritten by the most reputable underwriters and issued between 2000 and 2008 in the U.S. are associated with significantly higher downgrades and default risk.⁴⁴⁰

In contrast, the evidence presented in this thesis indicates that all bonds issued between 2002 and 2010 in the U.S. by reputable underwriters in the corporate bond market are beneficial to investors. The most plausible reason lies in the different approach to measuring reputation. Andres et al. (2014) use high-market share as an indicator of high reputation and focus exclusively on high-yield bonds.⁴⁴¹

A further investigation undertaken here is into the question whether banks have been lead underwriters for the same issuer before, which would indicate that they must have a good reputation for integrity. The impact on bond performance in this case should again be negative and decrease the probability of a downgrade. All logit regressions show a significant influence at the 10% level, indicating that companies tend to choose

⁴⁴⁰ Cf. Andres et al. (2014), p. 25.

⁴⁴¹ Cf. Andres et al. (2014), p. 1.

the same banks as underwriters again. To the best of my knowledge no previous literature refers to this proxy. Table 6 shows all the results in this context.

Table 5: Bond Performance (First Rating Action Downgrade) and Integrity/Reputation

This table contains the results of the logit regression on the corporate bond's performance measured as downgrade in the first rating. The bond issues have been taken place between 2002 and 2010 and have been supervised by different underwriter. All variables are defined and explained in table 1. Z statistics are based on standard errors which are called "White" and "issuer-clustered". "Issuer-clustered" follows the issuer-cluster standard errors referred to Petersen (2009). All regressions consider time and industry dummies. Statistical significance is on the 0.01(***), 0.05(**) 0.10(*)-level.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Syndicate w/o 'compliance' case	-0,093 (-1,22)						
Fraction LU 'restatement' case		0,068 (0,63)					
Fraction LU 'class action' case			0,175 (1,56)				
Fraction LU 'bribery/corruption' case				0,311 (1,44)			
Fraction LU 'misu/misappr/ embezz case'					0,225 (1,47)		
Fraction LU 'settlement' case						0,046 (0,51)	
Fraction LU 'money-laundering' case							0,303 (1,66)
LU was LU for same issuer before	-0,127 (-1,83)*	-0,127 (-1,83)*	-0,126 (-1,82)*	-0,125 (-1,79)*	-0,127 (-1,82)*	-0,126 (-1,81)*	-0,129 (-1,86)*
Parent Rep FMAC Score larger avg.	-0,437 (-3,85)***	-0,438 (-3,86)***	-0,441 (-3,89)***	-0,437 (-3,85)***	-0,438 (-3,86)***	-0,441 (-3,88)***	-0,447 (-3,93)***
Callable	0,064 (0,82)	0,064 (0,82)	-0,067 (0,85)	0,062 (0,79)	0,645 (0,82)	0,065 (0,83)	0,064 (0,82)
Clawback	-0,209 (-2,30)**	-0,209 (-2,29)**	-0,209 (-2,29)**	-0,213 (-2,33)**	-0,204 (-2,23)**	-0,210 (-2,30)**	-0,213 (-2,33)**
Credit Rating	0,161 (0,29)	0,159 (0,29)	0,158 (0,29)	0,165 (0,30)	0,179 (0,33)	0,168 (0,30)	0,171 (0,31)
Make Whole	0,164 (2,17)**	0,168 (2,22)**	0,168 (2,23)**	0,170 (2,25)**	0,163 (2,17)**	0,167 (2,21)**	0,169 (2,24)**
Maturity	0,216 (2,22)**	0,219 (2,26)**	0,219 (2,25)**	0,220 (2,27)**	0,214 (2,21)**	0,220 (2,27)**	0,220 (2,27)**
NYSE/AMEX	-0,377 (-3,20)***	-0,381 (-3,25)***	-0,376 (-3,19)***	-0,382 (-3,24)***	-0,375 (-3,18)***	-0,382 (-3,25)***	-0,391 (-3,32)***
Public Firm	0,008 (0,07)	0,012 (0,10)	0,004 (0,04)	0,001 (0,11)	0,005 (0,04)	0,013 (0,12)	0,024 (0,21)
Putable	1,393 (1,75)*	1,380 (1,74*)	1,369 (1,73*)	1,381 (1,74*)	1,383 (1,74*)	1,372 (1,73*)	1,358 (1,72)*
SEC144A	-0,021 (-0,21)	-0,021 (-0,21)	-0,020 (-0,19)	-0,020 (-0,20)*	-0,020 (-0,20)	-0,019 (-0,19)	0,276 (1,72)
Senior unsecured	-0,084 (-1,06)	-0,082 (-1,04)	-0,081 (-1,03)	-0,081 (-1,03)	-0,085 (-1,07)	-0,079 (-1,00)	-0,079 (-1,01)

Top 8 LUs	0,668 (7,88)***	0,665 (7,85)***	0,665 (7,85)***	0,665 (7,85)***	0,683 (8,00)***	0,660 (7,72)***	0,652 (7,63)***
Volume	-0,102 (-2,10)**	-0,097 (-2,00)**	-0,096 (-1,99)**	-0,098 (-2,03)**	-0,101 (-2,08)**	0,096 (-1,98)**	-0,095 (-1,96)**
# Covenants	-0,000 (-0,06)	-0,001 (-0,08)	-0,001 (-0,13)	-0,001 (-0,11)	-0,000 (-0,05)	-0,001 (-0,09)	-0,000 (-0,07)
Years	2002-2010	2002-2010	2002-2010	2002-2010	2002-2010	2002-2010	2002-2010
Observations	6009	6009	6009	6009	6009	6007	6009
Pseudo R ²	0.1145	0.1144	0.1146	0.1146	0.1146	0,0441	0,1147
p-value (Wald χ^2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time and Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes

It may be concluded that experience with banks and trust in their recommendations are important issues directly for companies, as well as indirectly for shareholders.

Price effect and integrity

Andres et al. (2014) describe the significant negative influence of a downgrade on bond price. They observe that downgrades can also lead to more own capital backing, which obviously results in less liquidity.⁴⁴² For empirical analysis, a downgrade is considerably more important than an upgrade.⁴⁴³

The employed proxies for integrity show no significant impact on bond performance, so a distinctive relationship between integrity and the price can't be expected anymore in an efficient market.⁴⁴⁴ To verify this assumption an additional analysis is performed on market efficiency and the pricing of bonds. If the market is efficient, none of the results will be significant. Pricing is measured here on the basis of yield spread, which represents the second dependent variable. Yield spread constitutes the risk-adjusted financial costs of an issuer of bonds. As already observed, and concordantly with Andres et al. (2014), yield spread is defined here as the difference between the return on the offering and the U.S. Treasury, both with the same period of validity.⁴⁴⁵

⁴⁴² Cf. Wansley et al. (1992), Hand et al. (1992), Hite and Warga (1997).

⁴⁴³ Cf. Andres et al. (2014), p. 8.

⁴⁴⁴ In this context an efficient market is defined the way that during the process of bond pricing the market is already aware of the fact that integrity has no influence on the bond performance.

⁴⁴⁵ Cf. Andres et al. (2014), p. 9.

In particular it can be expected that underwriters with established integrity⁴⁴⁶ will have no effect on the yield spread. This means that the risk-adjusted costs for issuers will not change because the market is efficient. Several ordinary least squared regressions are conducted to test these expectation. The procedure and the variables for integrity are the same as before, only the type of regression has changed. The syndicate with established integrity shows no impact on the yield spread, which indicates that the market is efficient. (see Table 7, Regression 1). The headings "class action lawsuit" and "misuse, misappropriation and embezzlement" don't show any impact either. Both groups match expectations. In line with these findings the remaining groups under the heading of violation of trust all are not significant, except for one, the "bribery and corruption" group. Here a significant impact on the yield spread is found, as such behavior decreases the issuer's costs significantly at the 5% level. For detailed results see Table 7, Regressions 2-7.

Summing up, integrity has no impact on the performance of bonds or company costs. Two reasons are possible: either the variables for integrity actually do not measure integrity or the market does not value integrity. Either way the results are consistent.

Price effect and reputation

Along with the last ordinary least squared regressions described above, checks were made for the impact of underwriters' reputation on the price measured as yield spread. In line with the findings in performance, here again significant results are found in each regression at the 1% level, indicating that high reputation is recognized by the market. This is in line with the literature, confirming the results of Anginer et al. (2011), who show that there is an inverse relation between a company's reputation and its bond credit spreads.⁴⁴⁷

In this connection it can also be shown that companies frequently choose the same issuer as before. To the best of my knowledge this has not been previously shown. The results are significant at a 1% level in every OLS regression. Detailed information is provided in Table 7, Regressions 1-7.

⁴⁴⁶ This is based on the way integrity has been measured in this thesis.

⁴⁴⁷ Cf. Anginer et al. (2011), p. 2.

Table 6: Yield Spread and Integrity/Reputation

This table contains the results of the OLS regression on the corporate bond's costs measured as yield spread. The bond issues have been taken place between 2002 and 2010 and have been supervised by different underwriter. All variables are defined and explained in table 1. Z statistics are based on standard errors which are called "White" and "issuer-clustered". "Issuer-clustered" follows the issuer-cluster standard errors referred to Petersen (2009). All regressions consider time and industry dummies. Statistical significance is on the 0.01(***), 0.05(**) 0.10(*)-level.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Syndicate w/o 'compliance' case	1,871 (0,29)						
Fraction LU 'restatement' case		-3,101 (-0,37)					
Fraction LU 'class action' case			2,231 (0,32)				
Fraction LU 'bribery/corruption' case				-31,655 (-2,33)**			
Fraction LU 'misu/misappr/ embezz case'					8,092 (0,88)		
Fraction LU 'settlement' case						7,826 (-0,82)	
Fraction LU 'money-laundering' case							-17,090 (-1,26)
LU was LU for same Issuer before	-28,434 (-5,37)***	-28,428 (-5,40)***	-28,475 (-5,39)***	-28,745 (-5,46)***	-28,488 (-5,39)***	-28,226 (-5,36)***	-28,620 (-5,38)***
Parent Rep FMAC Score larger avg.	-31,521 (-4,65)***	-31,574 (-4,56)***	-31,451 (-4,59)***	-31,633 (-4,61)***	-31,409 (-4,58)***	-31,524 (-4,56)***	-31,829 (-4,67)***
Callable	4,008 (0,79)	4,016 (0,80)	4,042 (0,80)	4,289 (0,85)	4,008 (0,79)	3,990 (0,80)	4,007 (0,81)
Clawback	-1,019 (-0,15)	-1,074 (-0,16)	-0,998 (-0,15)	-0,692 (-0,10)	-0,756 (-0,11)	-1,400 (-0,21)	-1,003 (-0,15)
Credit Rating	-20,281 (-12,43)***	-20,256 (-11,86)***	-20,307 (-12,21)***	-20,129 (-12,05)***	-20,309 (-12,23)***	-20,253 (-11,96)***	-20,293 (-12,21)***
Make Whole	8,656 (1,70)*	8,631 (1,68)*	8,656 (1,70)*	8,595 (1,67)*	8,407 (1,64)	8,809 (1,69)	8,456 (1,65)*
Maturity	-105,592 (-14,18)***	-105,664 (-14,13)***	-105,592 (-14,18)***	-105,718 (-14,13)***	-105,744 (-14,12)***	-105,630 (-14,11)***	-105,539 (-14,12)***
NYSE/AMEX	-39,657 (-2,19)**	-39,631 (-2,15)**	-39,657 (-2,19)**	-39,638 (-2,17)**	-39,291 (-2,14)**	-39,783 (-2,15)**	-40,008 (-2,19)**
Public Firm	-2,352 (-0,14)	-2,371 (-0,14)	-2,352 (-0,14)	-2,375 (-0,14)	-2,694 (-0,16)	-2,694 (-0,14)	-1,777 (-0,11)
Putable	146,337 (3,09)**	146,439 (3,05)**	146,337 (3,09)**	145,692 (3,05)**	147,395 (3,10)**	146,490 (3,06)**	145,405 (3,06)**
SEC144A	10,927 (1,17)	10,888 (1,18)	10,927 (1,17)**	10,554 (1,13)**	10,953 (1,18)**	10,793 (1,17)**	10,924 (1,18)**
Senior unsecured	-22,255 (-3,99)***	-22,228 (-3,99)***	-22,255 (-3,99)***	-22,216 (-3,99)***	-22,453 (-4,03)***	-22,213 (-3,99)***	-22,254 (-3,99)***
Top 8 LUs	-10,633 (-1,84)*	-10,522 (-1,75)*	-10,633 (-1,84)*	-9,823 (-1,67)*	-10,300 (-1,75)*	-9,653 (-1,47)*	-11,752 (-1,96)*
Volume	-13,251 (-3,71)***	-13,305 (-3,91)***	-13,251 (-3,71)***	-13,173 (-3,84)***	-13,519 (-3,93)***	-13,241 (-3,88)***	-13,292 (-3,86)***
# Covenants	0,603 (1,04)	0,604 (1,05)	0,603 (1,04)	0,635 (1,10)	0,612 (1,06)	0,616 (1,07)	0,612 (1,06)

Years	2002-2010	2002-2010	2002-2010	2002-2010	2002-2010	2002-2010	2002-2010
Observations	5639	5639	5639	5639	5639	5638	5639
Pseudo R ²	0.6126	0.6126	0.6126	0.6129	0.6129	0.6127	0.6127
p-value (Wald χ^2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time and Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Underwriter fees and integrity

For robustness the final regressions check whether integrity has a significant impact on the alternative measure of corporate costs, namely gross spread. It expresses a measure for underwriting fees.⁴⁴⁸ Here again, no significant results will be found if the market is efficient. Following Livingston and Miller (2000) and Fang (2005), the gross spread has to be paid to the underwriters as a compensation for their services during the issue of bonds. If banks are, in fact, associated with better underwriting standards, this would be measurable in the underwriting fees, because issuers are willing to pay more for those banks with better standards. The higher willingness to pay could be explained by lower risk, due to the relationship between issuer and underwriter, because banks with integrity and high reputation are presumed to have best practices and customer focus.⁴⁴⁹ This check resembles the previous check on market efficiency conducted with variable yield spread. It refers in particular to hypotheses H₂ a): "the higher the underwriter syndicate's integrity, the higher the gross spread", and H₂ b): "the higher the underwriter syndicate's reputation, the higher the gross spread".

As expected the ordinary least squared regression show no significant influence of integrity in the syndicate of underwriters on the gross spread. The two measures of integrity "misuse, misappropriation and embezzlement" and "settlement payments" show no significance either and match expectations. All other variables are in line with these results except restatements of operating results. This measure of integrity shows a significant influence at the 10% level. Summing up, these results only confirm hypothesis H₂ for integrity in the case of restatements of operating results.

⁴⁴⁸ Cf. Andres et al. (2014), p. 4.

⁴⁴⁹ We assume that syndicates with less integrity have to charge lower fees because the issuer's willingness to pay is lower for these underwriters. An adequate reason is the problem in trust as well.

Referring to the literature, Hribar and Jenkins (2004) show that the relative increase in capital costs in the month following a restatement lies between 7% and 19%.⁴⁵⁰ Graham et al. (2008) observe that restatements will be discussed in public and will almost certainly have a negative effect on a company's reputation.⁴⁵¹ Palmrose et al. (2004) analyzed restatements and resultant market reactions and established that the average abnormal return in a time slot of two days after the announcement of a restatement decreases.⁴⁵² Anderson and Yohn (2002) showed that corrections in revenue recognition caused the highest spread in the stock market, and that their impact on investors' perceptions of corporate value, as well as on the information gap, was even higher than that caused by restatements concerning other financial data.⁴⁵³ Restatements can also cause higher costs in the form of underwriter fees in the process of bond issuance, as Wang et al. (2013) show.⁴⁵⁴ The results for the variable restatements of operating results in the present study are thus in line with the consensus of the relevant literature. But all other variables match expectations of an efficient market.

Underwriter fees and reputation

The final investigation undertaken in this thesis is whether an underwriter's high reputation leads to higher fees for companies, measured in terms of gross spread. Even though the number of observations is considerably smaller (1769 as opposed to more than 6000) a significant impact on gross spread can be found at the 1% level for a high integrity syndicate and at the 10% level for all other measures of integrity. But in this context the results for the same issuer do not show any significance. All detailed information is provided in Table 8, Regressions 1-7. Again, the results for reputation are consistent with those shown for the performance and yield spread.

⁴⁵⁰ Cf. Hribar and Jenkins (2004), p. 338.

⁴⁵¹ Cf. Graham et al. (2008), p. 45 f.

⁴⁵² Cf. Palmrose et al. (2004), p. 60.

⁴⁵³ Cf. Anderson and Yohn (2002), p. 4.

⁴⁵⁴ Cf. Wang et al. (2013), p. 1.

Observations	1769	1769	1769	1769	1769	1769	1769
Pseudo R ²	0.4367	0.4377	0.4366	0.4367	0.4367	0.4130	0.4127
p-value (Wald χ^2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time and Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robustness

All results presented here show a significant impact of high reputation on each of the three dependent variables: first rating action downgrade, yield spread, and gross spread. Reputation was measured as a reputation score in Fortune Most Admired Companies, where it is higher than average. To check for robustness, a variable measuring reputation by median rather than average was used. Table 9, Regression 1 shows the logit regression on the variable “first rating action downgrade”; Regression 2 shows the OLS regression on the variable “yield spread”; and Regression 3 shows the OLS regression on the variable “gross spread”. The results remain significant at the 1% level even when the variable for reputation is based on the median.

Table 8: Robustness

This table contains the results of the logit and OLS regressions on the corporate bond's performance (measured as downgrade in the first rating (1)) and company costs (measured as yield spread (2) and gross spread (3)). The bond issues have been taken place between 2002 and 2010 and have been supervised by different underwriter. All variables are defined and explained in table 1. Z statistics are based on standard errors which are called "White" and "issuer-clustered". "Issuer-clustered" follows the issuer-cluster standard errors referred to Petersen (2009). All regressions consider time and industry dummies. Statistical significance is on the 0.01(***), 0.05(**) 0.10(*)-level.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Syndicate w/o 'compliance' case	-0,093 (-1,22)	1,877 (0,29)	0,160 (0,95)				
Fraction LU 'restatement' case							
Fraction LU 'class action' case							
Fraction LU 'bribery/corruption' case							
Fraction LU 'misu/misappr/ embezz case'							
Fraction LU 'settlement' case							
Fraction LU 'money- laundering' case							
LU was LU for same Issuer before	-0,128 (-1,83)*	-28,472 (-5,38)***	-0,364 (-1,15)				
Parent Rep FMAC Score larger med.	-0,427 (-3,77)***	-30,543 (-4,54)***	-0,649 (-2,98)***				
Callable	0,065 (0,84)	4,066 (0,81)	0,408 (1,67)*				
Clawback	-0,210 (-2,30)**	1,070 (-0,16)	2,715 (3,36)***				
Credit Rating	0,159 (0,29)	-20,329 (-12,49)***	-0,730 (-10,35)***				
Make Whole	0,165 (2,18)**	8,708 (1,71)*	1,208 (2,25)**				
Maturity	0,215 (2,22)**	-105,647 (-14,19)***	1,757 (5,48)***				
NYSE/AMEX	-0,376 (-3,19)***	-39,615 (-2,19)**	-0,050 (-0,10)				
Public Firm	0,007 (0,06)	-2,407 (-0,15)	-0,671 (-1,72)*				
Putable	1,394 (1,75)*	146,496 (3,11)***	-1,938 (-3,28)***				
SEC144A	-0,022 (-0,22)	10,898 (1,17)	18,178 (1,11)***				
Senior unsecured	-0,083 (-1,05)	-22,213 (-3,98)***	0,087 (-0,12)				
Top 8 LUs	0,668 (7,89)***	-10,609 (-1,84)*	0,064 (0,28)				
Volume	-0,102 (-2,10)**	-13,240 (-3,71)***	0,124 (-0,80)				
# Covenants	-0,000 (-0,06)	0,601 (1,04)	0,000 (0,00)				
Years	2002-2010	2002-2010	2002-2010				
Observations	6009	5639	1769				

Pseudo R ²	0.1144	0.6125	0.4368
p-value (Wald χ^2)	0.0000	0.0000	0.0000
Time and Industry Dummies	Yes	Yes	Yes

Other controls: bond performance

The control variables used here focus on results that are significant at the 1% level. The logit regression shows bonds issued by firms listed on the NYSE or AMEX with a lower chance of being downgraded. This is in line with the findings concerning the reputation variable. Being listed on the NYSE or AMEX seems to be an indicator for value and reputation, and is thus of value in the market. Again, these results counter those in the literature, namely Andres et al. (2014)⁴⁵⁵ and Rhee and Valdez (2009).⁴⁵⁶

The present results confirm those of Andres et al. (2014) that bonds underwritten by Top 8 lead underwriters have a significantly higher chance of a downgrade. Bloomberg's league table lists banks on the basis of e.g. market share and volume. These results, in combination with the present findings concerning the Fortune Most Admired Score, show that Top 8 lead underwriters in the league table do not seem to have a high reputation. In other words being one of the most economically successful banks seems, from the market's point of view, to be connected with low reputation.

Other controls: underwriter fees

The OLS regression on yield spread shows significant results for the control variable "maturity". In line with the literature, from Helwege and Turner (1999), through Livingston and Zhou (2010), to Andres et al. (2014), the coefficient of maturity is significantly negative. The spread rises with maturity.

The specific credit rating on notch level from S&P at the point of bond issue shows significant negative results.

⁴⁵⁵ Cf. Andres et al. (2014), p. 6

⁴⁵⁶ Cf. Rhee and Valdez (2009), p. 146.

Regression model validation

Multi-collinearity can be excluded, as the pair-wise correlations in Table 2 are all lower than 0.8. To check for homoscedasticity the White test was performed for all regressions subject to the prediction of the null hypothesis H_0 that the variance shows homoscedasticity. This is the case when p has a value of 0.05 or lower. The Durbin Watson test in each regression checks for autocorrelation by using the heteroscedastic and autocorrelation robustness estimator. Analogously to the White test, the value of p has to be 0.05 or lower to prove the null hypothesis H_0 . In both tests the null hypothesis H_0 can be confirmed, indicating homoscedasticity and positive autocorrelation for all regressions.

7. Conclusion and Outlook

This final section concludes the aims, processes and results developed in the present thesis and outlines the implications of its findings for banks, companies and investors in their role as participants in the financial market. Furthermore, the chapter provides an outlook based on the empirical findings of the thesis, with ideas for future research. All of these issues are formulated under the main question of how behavior can influence trust between two parties. In particular in what way integrity and reputation, as immaterial values, can influence the relationship between companies and investors on the one hand and banks on the other.

7.1 Summary

The trend in scientific economics shows that interest in corporate governance is rising rapidly. Of course the rise of misbehavior in the whole capital market is one reason for this trend, which affects many countries, including the industrialized ones. Hence it is even more important to find new ways and methods to make immaterial values measurable. Obviously this is difficult. It has, then, been the aim of this thesis to find new ways of measuring integrity.

The Introduction to the thesis identified and illustrated the development of misbehavior in capital markets. It was then necessary to clarify the main problem causing financial market participants to break the law. So Chapter 2 discussed the principal-agent problem and highlighted its treatment in the literature from the beginning to the present day. This suggested that solutions or approaches are possible if certain terms are defined clearly as a first step. Thus Chapter 2 contained definitions of the two immaterial values of integrity and reputation, as well as the Fortune Most Admired Score in its role as an accepted measurement of reputation.

The theoretical part of this thesis was completed with Chapter 3, which described the way the literature has dealt with issues of misbehavior in terms of the variables newly introduced in this thesis. These are "restatements of operating results", "money-laundering", "settlement payments", "corruption and bribery", "misuse", "misappropriation", "embezzlement" and "class action lawsuits". The establishment of these variables represents a distinctive contribution of the thesis to the science of economics.

The foundation has thus been laid to create new variables for measuring integrity and test its impact on bond performance and company's costs: variables which, to the best of the author's knowledge, have not been used so far. The approach is via measurement of violations of integrity. So Chapter 4 shows in particular the way these new variables were set up. It starts with the development of hypotheses formulating in general terms that there is a connection between the way a bank behaves and the performance of bonds they are supervising. It continues by illustrating the way the new variables are created, and adds the relevant control variables, which have already proven necessary in this context to complete the data set. Chapter 5 presents the

method of regression analysis as the principal instrument for the empirical aspect of the research.

After explaining the data, Chapter 6 presents the results. These show a strong connection between bank reputation and performance of corporate bonds on the one hand, and high reputation and higher fees on the other. In contrast integrity is still a relatively unexplored area and consistently none of the results for performance or costs is significant. Either the variables in this thesis actually do not measure integrity or the market does not value it. The results for high reputation remain significant if robustness is tested by replacing “higher reputation than average ”with“ median”.

Although these results focus on the capital market, and in particular on the process of certification, their main thrust is transferable to every process on the capital market.

7.2 Implications for market participants and future research

Although most of the present results concerning integrity and performance, as well as integrity and costs, have been non-significant, significance is evident for restatements of operating results and for corruption and bribery. The lack of clarity in many, if not most, results may derive from the fact that the importance of compliance has only started to grow in the last few years, when the market has become increasingly conscious of this topic.

The period of observation of this thesis lies between 2002 and 2010 but, as observed in the Introduction, the frequency of misbehavior has risen especially in more recent years, namely in 2012, 2013 and 2014. A future investigation focusing on these years may well add clarity to the results of the present study.

Nevertheless, the results adduced for the impact of reputation are obvious. The Fortune Score confirms its approved role in the field of economic science as a measure of reputation. Summing all these results up, companies and banks should become more aware of their behavior. Good behavior and sustainability are values to be considered in everyday work. The importance of reputation can already be measured, and it is just a matter of time before the value of further and yet more immaterial values becomes

public. The fact that results are becoming increasingly verifiable already demonstrates a growth in market participants' awareness.

It could also be interesting to investigate the relation between the monetary advantages due to e.g. bribery and the disadvantages caused by fines. If the advantages achieved by misbehavior still in the end pay off, market participants may be aware of this fact and therefore have no reason to condemn the practices concerned.

A distinctive relationship can certainly be perceived in the fact that all the coefficients are as expected, and at least some of the results demonstrate significance. In this light, an alternative approach may be helpful. With regard to the context, only individual proxies represent complex circumstances, but the way in which the variables for integrity are connected with each other remains as yet unknown. Further analysis might explain whether, and if so how, these variables are connected. This approach would aim to structure the proxies for integrity into factors according to a mathematical algorithm.⁴⁵⁷

The creation of new variables for measuring integrity could be implemented in future research. Here, synonyms may lead to better results. Moreover, as the present investigation was confined to the American market, results from other countries might be added and could well vary the picture. Summing up, there is a good deal of scope here for future research.

Finally, this thesis ends as it started, with a quotation from Warren Buffet, who said: "*It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently.*"

⁴⁵⁷ Cf. Brosius (2004), p. 773.

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Annex

Overview of Economic Papers using Fortune's 'Most Admired Companies' Score

Authors	Year	Title	Source	The influence of..	Result
Filbeck, G.G. Groman, R.F. Zhao, X.	2013	Are the best of the best better than the rest? The effect of multiple rankings on company value.	<i>Review of Quantitative Finance and Accounting</i> , No. 4, p. 695-722.	listing in the <i>Fortune</i> ranking on company performance.	<p>The authors find significant influence: Companies listed in the <i>Fortune</i> or Best Corporate Citizens ranking have sustainably better earnings per share.</p> <p>If the company is listed in two or three ratings it obtains above-average returns. This is not the case if the company is listed in all of the four considered ratings at the same time.</p>

Maug, E. Niessen-Ruenzi, A. Zivotova, E.	2013	Pride and Prestige: Why Some Firms Pay Their CEOs Less.	Working paper.	reputation on CEO salaries.	The authors find significant influence: Higher reputation leads to lower salaries.
Cao, Y. Myers, J.N. Myers, L.A. Omer, T.C.	2013	Company Reputation and the Cost of Equity Capital.	Working paper.	reputation on equity financing.	The authors find significant influence: Companies with a higher reputation have lower costs of equity capital.
Cao, Y. Myers, L.A. Omer, T.C.	2012	Does Company Reputation Matter for Financial Reporting Quality? Evidence from Restatements.	Working paper.	reputation on the quality of financial reporting.	<p>The authors find significant influence: Higher reputation leads to higher quality of financial reporting.</p> <p>The quality of the estimated provisions is higher if the company has a higher reputation.</p> <p>Companies with a higher reputation have to pay a higher fee to their auditors.</p>

Sum, V.	2012	Most Ethical Companies and Stock Performance: Empirical Evidence.	<i>International Research Journal of Applied Finance</i> , p. 1286-1292.	reputation on share performance.	The authors find significant influence: Companies with a high reputation generate particularly high share performance in comparison to the market.
Anginer, D. Warburton, A.J. Yildizhan, C.	2011	Corporate Reputation and Cost of Debt.	Working paper.	reputation on borrowing costs.	The authors find significant influence: bad reputation leads to higher borrowing costs.
Belascu, L. Herciu, M. Ogrean, C.	2011	Managing Corporate Reputation in Times of Global Changes and Turbulence – A Strategy of Competiveness.	<i>Journal of Modern Accounting and Auditing</i> 7, p. 726 – 733.	industry on reputation.	The authors find significant influence: Specific industries have a higher reputation.
Flatt, S.J. Kowalczyk, S.J.	2011	Corporate Reputation Persistence and Its Diminishing Returns.	<i>International Journal of Business and Social Science</i> , p. 1 – 10.	former performance and reputation on future performance.	The authors find significant influence: Former financial performance has a significant influence on future reputation.

Anginer, D. Statman, M.	2010	Stocks of Admired Companies and Spurned Ones.	<i>The Journal of Portfolio Management</i> 36, p. 71 – 77.	reputation on earnings per share.	The authors find significant influence: higher reputation leads to lower earnings per share.
Stuebs, M. Sun, L.	2009	Business Reputation and Labor Efficiency, Productivity and Cost.	<i>Journal of Business Ethics</i> 96, No.2, p. 256 - 283.	reputation on labor efficiency, labor productivity and cost of labor.	The authors find significant influence: High reputation is related to labor efficiency and productivity. No proven influence of reputation on labor costs.
Anginer, D. Fisher, K.L. Statman, M.	2008a	Affect in Behavioral Asset-Pricing Model.	<i>Financial Analyst Journal</i> 64, p. 20 – 29.	reputation on earnings per share.	The authors find significant influence: Higher reputation leads to lower earnings per share.
Anginer, D. Fisher, K.L. Statman, M.	2008b	Stocks of admired companies and despised ones	http://ssrn.com/abstract=962168	subjective perception on asset pricing.	Positively perceived shares lead to a higher price.
Fombrun, C.J.	2007	List of Lists: A Compilation of International Corporate Reputation Ratings.	<i>Corporate Reputation Review</i> 10, p. 144 – 153.	comparison of different reputation ranking.	Comparison of 183 reputation lists across 38 countries.

Gössling, T. Vocht, C.	2007	Social Role Conceptions and CSR Policy Success.	<i>Journal of Business Ethics</i> 74, p. 363 – 372.	fulfillment of social commitments on reputation.	The authors find significant influence: social commitments lead to higher reputation.
Anderson, J. Smith, G.	2006	A Great Company Can Be a Great Investment.	<i>Financial Analyst Journal</i> 62, p. 86 – 93.	reputation on earnings per share.	The authors find significant influence: Higher reputation leads to higher earnings per share.
Cho, H.J. Pucik, V.	2005	Relationship between Innovativeness, Quality, Growth, Profitability, and Market Value.	<i>Strategic Management Journal</i> 26, p. 555 – 575.	capability of innovation and quality on financial performance.	The authors find significant influence: the capability of innovation and quality leads to higher sustainable performance.
Eberl, M. Schwaiger, M.	2005	Corporate reputation: disentangling the effects on financial performance.	<i>European Journal of Marketing</i> 39, p. 838 – 854.	corporate reputation on future financial performance.	The authors find significant influence: The cognitive component of reputation has a positive impact on future financial performance, the affective component has a negative impact.
Flanagan, D.J. O'Shaughnessy, K.C.	2005	The Effect of Layoffs on Firm Reputation.	<i>Journal of Management</i> 31, p. 445 – 463.	redundancies on reputation.	The authors find significant influence: Redundancies lead to worse reputation.

Schwaiger, M.	2004	Components and Parameters of Corporate Reputation – An Empirical Study.	<i>Schmalenbach Business Review</i> 56, p. 46 – 71.	corporate reputation on sustainable profits.	The authors find significant influence: Reputation is two-dimensional: The cognitive component (“competence”) has a positive influence and the affective component (“sympathy”) has a negative influence.
Roberts, P.W. Dowling, G.R.	2002	Corporate Reputation and sustained superior financial Performance.	<i>Strategic Management Journal</i> 23, p. 1077 – 1093.	reputation on financial performance.	The authors find significant influence: higher reputation leads to better financial performance.
Chun Eneroth Schneeweis	2003	Corporate reputation and investment performance: the UK and U.S. experience	<i>Research in International Business and Finance</i> 17.273 (2003): 91	reputation on future performance	Higher reputation leads to higher returns. Big companies have a higher reputation.
Sonnenfeld, J.A.	2002	What makes great boards great?	<i>Harvard Business Review</i> .	reputation on the composition of the board of directors.	The authors find significant influence: reputable companies have a characteristic composition of the board of directors.

Hutton, J.G. Goodman, M.B. Alexander, J.B. Genest, C.M.	2001	Reputation management: the new face of corporate public relations?	<i>Public Relations Review</i> 27, p. 247 – 261.	expenses for corporate communication on reputation.	No significant influence established.
Riahi-Belkaoui, A.	2001	Corporate Reputation, Internalization and the Market Valuation of Multinational Firms.	http://ssrn.com/abstract=412005 .	reputation and internationality on market value.	The authors find significant influence: reputation and internationality lead to a higher market value.
Zyglidopoulos, S.C.	2001	The Impact of Accidents on Firms' Reputation for Social Performance.	<i>Business Society</i> 40, p. 416 – 441.	industrial accidents on reputation.	No significant influence established.
Antunovich, P. Laster, D. Mitnick, S.	2000	Are High-Quality Firms Also High-Quality Investments?	<i>Current Issues in Economics and Finance</i> 6, p.	reputation on earnings.	The authors find significant influence: Higher reputation leads to higher earnings.
Barrett, J.D. Williams, R.J.	2000	Corporate philanthropy, criminal activity, and firm reputation: is there a link?	<i>Journal of Business Ethics</i> 26, p. 341 – 350.	philanthropy and crime on reputation.	The authors find significant influence: Philanthropy leads to higher reputation, crime to lower reputation.

Black, E.L. Carnes, T.A. Richardson, V.J.	2000	The Market Valuation of Corporate Reputation.	<i>Corporate Reputation Review</i> 3, p. 31 – 42.	reputation on the market value of equity.	The authors find significant influence: higher reputation leads to a higher market value of equity.
Cordeiro, J.J. Schwalbach, J.	2000	<i>Preliminary Evidence on the Structure and Determinants of Global Corporate Reputations.</i>	<i>Discussion Paper Series</i> , Institute of Management, Humboldt University, Berlin. Working Paper.	national rankings on global <i>Fortune</i> ranking.	The authors find significant influence: rankings are nearly identical.
Jones, B.H. Jones, G.H. Little, P.	2000	Reputation as Reservoir: Buffering Against Loss in Times of Economic Crisis.	<i>Corporate Reputation Review</i> 3, 21 – 29.	reputation on stability in crises.	Good corporate reputations provide a reservoir of goodwill which buffers companies from market decline in times of uncertainty and economic turmoil.
Chun Eneroth Schneeweis	2003	Corporate reputation and investment performance: the UK and US experience	<i>Research in International Business and Finance</i> 17.273 (2003): 91	reputation on future performance	Higher reputation leads to higher returns. Big companies have a higher reputation.

Antunovich, P. Laster, D.	1998	Do Investors Mistake a Good Company for a Good Investment?	http://ssrn.com/abstract=115020	reputation on earnings per share.	The authors find significant influence: In the short run higher reputation leads to higher earnings per share. In the long run well admired firms are not overpriced.
Brown, B.	1998	Do Stock Market Investors Reward Companies with Reputations for Social Performance?	<i>Corporate Reputation Review</i> 3, p. 271 – 280.	reputation on earnings per share.	The authors find significant influence: higher reputation leads to higher earnings per share.
Carter, S.M. Dukerich, J.M.	1998	Corporate Responses to Changes in Reputation.	<i>Corporate Reputation Review</i> 1, p. 250 – 270.	reputation on manager activity.	The authors find significant influence: changes in reputation can influence the activity of managers.
Filbeck, G. Raymond, G. Preece, D.	1998	<i>Fortune's</i> 'Most Admired Companies' scale: An Investor's Perspective.	<i>Studies in Economics and Finance</i> 18, p. 74 – 93.	reputation on earnings.	The authors find significant influence: higher reputation leads to higher earnings.
Fombrun, C.J.	1998	Indices of Corporate Reputation: An Analysis of Media Rankings and Social Monitors' Ratings.	<i>Corporate Reputation Review</i> 4, p. 327 – 340.	a variety of corporate reputational rankings.	Conclusion: The analysis reinforces the need for a more coherent conceptual framework to assess corporate reputations.

Vergin, R.C. Qoronfleh, M.W.	1998	Corporate reputation and the stock market.	<i>Business Horizons</i> 41, p. 19-26.	reputation on earnings per share in the future.	The authors find significant influence: Higher reputation leads to higher earnings per share in the future.
Stanwick, P.A. Stanwick, S.D.	1998	The Relationship Between Corporate Social Performance, and Organizational Size, Financial Performance and Environmental Performance: An Empirical Examination.	<i>Journal of Business Ethics</i> 17, p. 195 – 204.	size of companies, profitability and noxious emissions on social performance.	The authors find significant influence: Size of companies, higher profitability and lower noxious emission lead to better social performance.
Griffin, J.J. Mahon, J.F.	1997	The Corporate Social Performance and Corporate Financial Performance Debate. Twenty-Five Years of Incomparable Research.	<i>Business Society</i> 36, p. 5 – 31.	corporate social performance and financial performance.	<i>Fortune</i> rankings are an accurate instrument for measuring corporate social performance.
Koys, D.J.	1997	Human Resources Management and <i>Fortune's</i> Corporate Reputation Survey.	<i>Employee Responsibilities and Rights Journal</i> , Vol. 10, No. 2, p. 93-101.	human resource management on corporate reputation.	The authors find significant influence: Positive significant correlation between fair treatment of employees and a high reputation.

<p>Srivastava, R.K. McInish, T.H. Wood, R.A. Capraro, A.J.</p>	<p>1997</p>	<p>How Do Reputations Affect Corporate Performance?: The Value of Corporate Reputation: Evidence from the Equity Markets</p>	<p><i>Corporate Reputation Review</i>, Volume 1, Number 1, July 1, 1997 , pp. 61-68</p>	<p>reputation on enterprise value.</p>	<p>Higher reputation leads to higher shareholder wealth.</p>
<p>Waddock, S.A. Graves, S.B.</p>	<p>1997</p>	<p>Quality of Management and Quality of Stakeholder Relations. Are They Synonymous?</p>	<p><i>Business Society</i> 36, p. 250 – 279.</p>	<p>quality of performance on the perceived quality of management (measured by <i>Fortune</i> ranking).</p>	<p>The authors find significant influence: higher performance quality leads to higher perceived management quality .</p>
<p>Hammond, S.A. Slocum, J.W.</p>	<p>1996</p>	<p>The impact of prior firm financial performance on subsequent corporate Reputations Ranking.</p>	<p><i>Journal of Business Ethics</i> 15, p. 159 – 165.</p>	<p>financial performance on reputation.</p>	<p>The authors find significant influence: higher financial performance leads to higher reputation.</p>
<p>Brown, B. Perry, S.</p>	<p>1994</p>	<p>Removing the Financial Performance Halo From <i>Fortune</i>'s “Most Admired” Companies</p>	<p><i>Academy of Management Journal</i> 37, p. 1347 – 1359.</p>	<p>“financial halo” effect of <i>Fortune</i> ranking.</p>	<p>Due to an influence on respondents of financial corporate success in the past, there is a bias in the <i>Fortune</i> data (“halo”). Presentation of a method to eliminate the halo-effect.</p>

Fryxell, G.E. Wang, J.	1994	The <i>Fortune</i> corporate 'reputation' index: Reputation for what?	<i>Journal of Management</i> , Volume 20, Issue 1, Spring 1994, Pages 1–14	<i>Fortune</i> ranking in comparison to other models.	The benefit of the <i>Fortune</i> ranking is limited for scientific purposes.
Riahi-Belkaoui, A. Pavlik, E.	1991	Asset Management Performance and Reputation Building for Large U.S. Firms.	<i>British Journal of Management</i> 2, p. 231 – 238.	asset management information on reputation.	The authors find significant influence. More information on asset management leads to a higher reputation.
Fombrun, C. Shanley, M.	1990	What's in a Name? Reputation Building and Corporate Strategy	<i>Academy of Management Journal</i> , Vol. 33, No. 2 (Jun., 1990), pp. 233-258	various factors on reputation.	Stakeholders create the company's reputation based on information about performance and strategic orientation.
McGuire, J.B. Schneeweis, T. Branch, B.	1990	Perceptions of Firm Quality: A Cause or Result of Firm Performance.	<i>Journal of Management</i> March 16, p. 167-180.	financial indicators on the perceived quality of the company (measured by <i>Fortune</i> ranking).	The authors find significant influence: good financial indicators lead to higher perceived quality of the company.
Preston, L.E. Sapienza, H.J.	1990	Stakeholder Management and Corporate Performance.	<i>Journal of Behavioral Economics</i> 19, p. 361 – 375.	stakeholder management on corporate performance.	The authors find significant influence: Satisfied stakeholders lead to better performance.

McGuire, J.B. Sundgren, A. Schneeweis, T.	1988	Corporate Social Responsibility and Firm Financial Performance.	<i>Academy of Management Journal</i> 31, p. 854 – 872.	corporate social responsibility (measured by <i>Fortune</i> ranking) on financial performance.	The authors find significant influence: awareness of the company's social responsibility leads to higher financial performance.
Spencer, B.A. Wokutch, R.E.	1987	Corporate Saints and Sinners. The Effects of Philanthropic and Illegal Activity on Organizational Performance.	<i>California Management Review</i> 29, p. 62 – 77.	philanthropy and crime on performance.	No significant influence established.
Chakravarthy, B.	1986	Measuring Strategic Performance.	<i>Strategic Management Journal</i> 7, p. 437 – 458.	stakeholder satisfaction on strategic performance.	The authors find significant influence: higher stakeholder satisfaction leads to higher strategic performance.