CHAPTER ONE
REGULATORY SUPERVISION OF FIRMS

1.1 Introduction

A long-standing question in firm regulation concerns how regulatory authorities should supervise an industry so that firms will comply with regulation and respond to supervision of regulatory authorities (e.g., Ayres & Braithwaite, 1992; Furger, 1997; Sinclair, 1997; Gunningham & Rees, 1997; Gunningham & Sinclair, 1999a; 1999b, Braithwaite, 2002; 2007; Ashby, Chuah & Hoffmann, 2004; May, 2005; Kirchler, Hoelzl & Wahl, 2008; Omarova, 2011; Gunningham, 2015; Saurwein, 2011). This question has received attention from scholars in various disciplines such as criminology, psychology, geology, and accounting, and is practically relevant given that non-compliance with regulations can have severe consequences for society. For instance, it is estimated that the Dutch society annually misses 22 billion euros of income because of non-compliance with tax laws (Telegraaf, 23 January 2019).

Traditionally, regulatory authorities used stand-alone regulatory strategies of command-and-control to monitor and enforce compliance with regulation. With command-and-control, authorities use deterrence in the form of extensive auditing and severe punishments to increase compliance (e.g., fines, and penalties; Braithwaite, 2002). Given that deterrence is an expensive strategy (Tyler, 2006), and that many regulatory authorities face resource constraints in terms of time and money (Hansen, Karup & Russell, 2006), it can be difficult for authorities to conduct enough activities to pose a credible threat for firms’ non-compliance (Burby & Paterson, 1993). In addition, command-and-control regulation is typically inflexible in terms of changes and innovations in industries (OECD, 1998; Gunningham, 2015). Furthermore, deterrence (in the form of auditing) can decrease firms’ intrinsic motivations, through for instance, changes in perceptions of fairness and trust, leading to lower instead of higher compliance (Mendoza, Wielhouwer & Kirchler, 2017).

Alternative regulatory strategies for command-and-control are less intrusive and more cooperative in nature, such as (enforced) industry self-regulation. Under industry self-regulation, firms associate in private initiatives (Ayres & Braithwaite, 1992). These initiatives are sometimes monitored by self-regulatory organizations (Wotruba, 1997), or backed up by command-and-control regulation (i.e., enforced self-regulation; Braithwaite,
Even though cooperation is usually perceived as cheaper and as a more efficient and effective supervision strategy than deterrence and command-and-control (OECD, 1998; Campbell, 1999), it may not be effective for all firms. For instance, various studies indicate that firms behave opportunistically and fail to comply with self-regulation (e.g., Wortuba, 1997; Gunningham & Rees, 1997; Gunningham & Sinclair, 1999a; 1999b; Campbell, 1999; Howard, Nash & Ehrenfeld, 2000). This behaviour can also have negative consequences for society. For example, firms associated in environmental self-regulatory initiatives tend to increase pollution levels, rather than to decrease them (King & Lenox, 2000; Lenox & Nash, 2003; Gamper-Rabindran & Finger, 2012).

This provides us with the insight that some strategies work better for some firms than for others. Combining strategies is therefore believed to lead to better regulatory outcomes (e.g., higher compliance; Gunningham & Sinclair, 1999a; 1999b; Hofmann, Gangl, Kirchler & Stark, 2014; Nielsen, 2006; Sinclair, 1997). The theory of responsive regulation posits to examine whether certain types of firms or individuals respond better to certain types of supervision (Ayres & Braithwaite, 1992; Braithwaite, 2002; 2007; Nielsen & Parker, 2009). The theory predicts that a firm or individual responds better to supervision if the regulatory and enforcement strategies are aligned with the motivations to comply and respond to supervision (Ayres & Braithwaite, 1992; Braithwaite, 2002; 2007; Nielsen & Parker, 2012). The way in which firms sort their priorities likely determines their main motivations (i.e., lexical ordering; Ayres & Braithwaite, 1992). Given that firms have explicit economic objectives (e.g., maximization of profit or shareholder value), economic motivations may be relatively important for firms’ regulatory decision-making. However, the effect of economic motivations on firm compliance and responsiveness to supervision is hardly (empirically) examined.

This dissertation aims to contribute to this literature by examining whether differences in firm compliance and responsiveness to supervision are associated with firms’ economic motivations such as time horizon (i.e., the extent to which firms value the future in making intertemporal decisions; Chapter 2 and 4), and the use of incentive compensation based on financial outcomes (i.e., economic motivations of employees and managers with in the firm; Chapter 3). Using unique compliance data of the Dutch financial market supervisor, the Authority for the Financial Markets (AFM), I observe that firms with a longer time horizon are more compliant (Chapter 2), and that firms with incentive compensation for
front-office employees (i.e., employees with direct customer contact) and managers are less compliant, especially when they are small (Chapter 3). Furthermore, the results indicate that firms with a longer time horizon are more responsive to feedback mechanisms in self-regulation (Chapter 2), and a supportive regulatory attitude in the authority’s official communication (Chapter 4). I also find that a supportive attitude can be exploited: firms with a shorter time horizon are more likely to exploit a supportive regulatory attitude in official communication of the regulatory authority (Chapter 4).

The findings add to existing literature in multiple ways. First, the findings contribute to the theory of responsive regulation (Ayres & Braithwaite, 1992; Braithwaite, 2002; 2007). This theory assumes that supervision is more effective if it is aligned with firms’ motivations (Nielsen & Parker, 2009). The results in this dissertation suggest that economic motivations can influence compliance and responsiveness to supervision, and authorities should consider them when determining what supervision strategy to use for which firm. Second, the findings add to the literature on compliance motivations (e.g., Winter & May, 2001; Nielsen & Parker, 2012), as they empirically support the importance of economic motivations such as firms’ time horizon and use of incentive compensation for firm compliance.

The main implication of this dissertation is that authorities can use firms’ economic motivations such as time horizon and incentive compensation to (i) ex ante have indications which firms are more or less likely to comply and respond to supervision, (ii) determine which firms should be supervised more or less intrusively, and (iii) decide on the regulatory attitude in communication with the firms that are being supervised.

The remainder of this chapter is organized as follows. First, I define the concepts of compliance and responsiveness to regulation. Second, I elaborate on the theory of responsive regulation, and summarize findings of previous studies on firm motivations, compliance, and responsiveness to supervision. Finally, I outline the findings in the other chapters in the dissertation, and elaborate on how they fit to the theory of responsive regulation. The chapter finishes with a concluding note.

1.2 Compliance and responsiveness to supervision

Firms deal with regulation and compliance issues on a daily basis. For instance, firms are subject to society-wide regulation such as tax regulation, as well as specific industry
regulation. Regulation is aimed at ruling out some behaviour, and to rule in other to achieve a specific regulatory objective (Ostrom, 2005). If firms obey the rules, they are compliant.

The general assumption is that supervision on compliance is necessary (Gunningham & Sinclair, 1999a). How an authority should supervise firms is a long-standing question that has been studied by various scholars from different disciplines (e.g., Ayres & Braithwaite, 1992; Gunningham & Sinclair, 1999a; 1999b; Ashby et al., 2004; May, 2005; Kirchler et al., 2008; Omarova, 2011). An authority’s supervision strategy consists of a regulatory and enforcement strategy (Braithwaite, 2002). Regulatory strategies vary in terms of how intrusively authorities supervise firms, and enforcement strategies indicate which mechanisms and tools authorities use for supervision. Less intrusive strategies use more persuasion and education (e.g., self-regulation) and involve enforcement strategies such as feedback, and information gathering (i.e., firms provide information to the regulatory authority that supervises them; Gunningham & Sinclair, 1999a; 1999b; Healy & Braithwaite, 2006). Strategies that are more intrusive rely more on deterrence (e.g., command-and-control regulation) and involve enforcement strategies such as audits, penalties, and fines.

Firms decide on how to respond to the authority’s requests and enforcement, and may respond better to one strategy than another. Combining regulatory strategies can therefore lead to better regulatory outcomes (e.g., higher compliance; Scholz, 1984; Ayres & Braithwaite, 1992).

1.3 Responsive regulation

The theory of responsive regulation suggests that authorities can more effectively and efficiently supervise firms if they differentiate supervision based on firms’ motivations (Ayres & Braithwaite, 1992). The majority of firms are assumed to have motivations that lead them to have a cooperative attitude and therefore respond to supervision and enforcement that is not or limitedly intrusive (Braithwaite, 2002). However, some firms do not have these motivations, and therefore compliance needs to be supervised and enforced more intrusively (Braithwaite, 2002). Responsive regulation can be visualized in an “enforcement pyramid” (e.g., Ayres & Braithwaite, 1992; Braithwaite, 2002). An example of an enforcement pyramid is shown in Figure 1. The bottom of the pyramid represents the majority of cooperative firms that respond to less intrusive forms of supervision. If firms
are less cooperative, they move in the pyramid towards more intrusive supervision. The top of the pyramid represents the least cooperative subgroup of firms that receive the most intrusive form of supervision. Supervisory authorities can use the inside of the pyramid to describe the specific type of supervisory activities (e.g., audits and fines) that matches with the level of cooperativeness of the firms.

Figure 1.1: Example of an enforcement pyramid

The main advantage of using responsive regulation is that authorities can save resources (Scholz, 1984; Nielsen, 2006). Given that more intrusive supervision is more expensive than low intrusive enforcement, authorities may be able to save resources by focusing expensive supervision on non-cooperative firms. While the responsive regulation and the enforcement pyramid are easy to understand and thereby attractive to practitioners, they are challenging to implement because (i) there is only a small empirical literature that authorities can use to identify which firms are more/less responsive and cooperative, (ii) institutional environments influence how responsive regulation can be implemented (Nielsen, 2006), and (iii) treating firms differently can create additional legal challenges (e.g., discrimination of firms).

1.4 Motivations, compliance and responsiveness to supervision

Generally, there are two types of motivations to respond to supervision: economic and non-economic motivations. Economically motivated firms comply or respond to supervision because it is economically beneficial to do so (e.g., Becker, 1968; Burby & Paterson, 1993; Winter & May, 2001; Nielsen & Parker, 2012). For instance, Winter &
May (2001) find that compliance of Danish farmers is lower when the cost of compliance increases. Firms with non-economic motivations may comply because it is the right thing to do (i.e., normative motivations; Winter & May, 2001) or to gain respect of others (i.e., social motivations; Nielsen & Parker, 2012; Winter & May, 2001). For instance, non-economic motivations that are positively associated with compliance are perceptions of fairness and justice (e.g., Mendoza, Dekker & Wielhouwer, 2016; Tyler, 2006).

The way in which firms prioritize their motivations can determine if motivations lead to a cooperative attitude. Firms can have multiple motivations as they consist of different individuals that have their own motivations to comply or respond to supervision, which are not necessarily aligned and may depend on the situation in which they are (Ayres & Braithwaite, 1992; Nielsen & Parker, 2012).

1.5 The next chapters

Given that firms have economically oriented objectives (e.g., maximization of profit or shareholder value), it is expected that economic motivations will play an important role in firm compliance and responsiveness to supervision. Therefore, I examine how compliance and responsiveness to supervision are influenced by two different firm characteristics that are associated with firms’ economic motivations: time horizon (Chapter 2 and 4), and incentive compensation (Chapter 3). Figure 1.2 summarizes this graphically.

Figure 1.2: Motivations, compliance and responsiveness to supervision

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<tr>
<th>Economic motivations</th>
<th>Compliance</th>
<th>Responsiveness to supervision</th>
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<td>Time horizon (Chapter 2 and 4)</td>
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In Chapter 2, I examine feedback mechanisms in a self-regulatory setting. Feedback is a common monitoring mechanism and present in many (self-) regulatory settings. With feedback, authorities aim to educate firms on regulation and compliance, and explain how firms can become compliant. I use unique compliance data of Dutch financial
intermediaries associated in a self-regulatory organization, the Stichting Financiële Dienstverlening, to examine whether firms with a longer time horizon respond better to feedback. Time horizon is the extent to which firms value the future in making inter-temporal decisions (Loewenstein & Thaler, 1989). Many studies examine time horizon in the form of a discount factor (e.g., Laverty, 1996;Das & Teng, 2001; Mendoza & Wielhouwer, 2015). A higher discount factor is associated with higher valuation of future costs and benefits (i.e., a longer time horizon). Given that responsiveness to feedback is expensive in the short-term but can reduce future costs, firms with a longer time horizon are expected to value these cost reductions relatively more. As a result, they may be more responsive to feedback.

I find that long-term oriented firms are more responsive to feedback, and that this responsiveness results in higher compliance (i.e., responsiveness (partly) mediates the association between a firm’s time horizon and compliance). The findings support the idea that long-term oriented firms are more responsive to feedback because they (i) value the avoidance of long-term costs relatively more, and (ii) have more resources available to respond to feedback.

The findings add to the literature of responsive regulation (e.g., Ayres & Braithwaite, 1992; Nielsen & Parker, 2012) and compliance motivations (e.g., Winter & May, 2001; Nielsen & Parker, 2012) by demonstrating that (i) feedback mechanisms can be effective enforcement mechanisms especially when firms value the future sufficiently, and (ii) time horizon is a firm characteristic that influences firms’ responsiveness to supervision and through that compliance. The main implication is that feedback mechanisms can be used in self-regulation for firms that value the future sufficiently.

In Chapter 3, I examine the association between incentive-based compensation and non-compliance in the setting of financial intermediation in the Netherlands, where some firms give sales- and/or profit-based incentives to front-office employees (i.e., employees with direct customer contact) and/or managers (i.e., those that are responsible for the firms’ daily affairs). These incentives can create strong economic motivations for front-office employees and managers to increase sales and/or profit. They are predicted to decrease firm compliance with regulation because: (i) front-office employees and managers may focus only on activities related to achieving the objective or optimizing performance measures and neglect compliance activities, and (ii) these incentives yield an increased focus on the
short-term and excessive risks taking, which both increase the likelihood the employee or manager violates one or more regulations. I hypothesize that the effects are weaker in larger firms as they have higher political and reputation costs, and more formal internal control systems.

I separately test the effects for front-office employees and managers, and find in the examined setting that (i) sales incentives for front-office employees are associated with lower firm compliance, unless the firm is sufficiently large, and (ii) profit incentives for managers are associated with lower firm compliance. Overall, the results indicate that the association between incentive compensation and non-compliance depends on who (front-office employees and/or managers) receives which type of incentives (sales and/or profit), and the size of the firm.

The results add to other studies that examine antecedents of compliance (e.g., Becker, 1968; Winter & May, 2001; Nielsen & Parker, 2012) by demonstrating that incentives for employees and/or managers can be positively associated with firm non-compliance, especially when firms are small. The main implication of the results is that they can help regulatory authorities to tailor supervision for (small) firms with incentive-based compensation, as these firms are more likely to be non-compliant.

Chapter 4 reports on a field experiment\(^1\) in collaboration with the Authority for Financial Markets (AFM) in the Netherlands to examine whether a supportive regulatory attitude by the regulatory authority in its official communication leads to firms reporting higher quality of information. Many regulatory authorities request firms to report information on topics such as compliance and internal controls. For monitoring purposes, it is important that the information that firms provide is complete, accurate, and on time.

Together with the AFM, I manipulated the amount of support in official communication to 4,500 financial intermediaries and observed the quality of information that these intermediaries report to the AFM. I find that whether a supportive attitude in official communication results in higher quality information depends on the firm’s time horizon. Short- and medium-term oriented firms exploit the authority’s supportive attitude

\(^1\) The field experiment was part of a registered report process. The theory and hypotheses were registered before collecting the data.
by reporting low quality information. However, long-term oriented firm do not exploit such attitude and report higher quality information.

The study adds to the theory of responsive regulation (e.g., Ayres & Braithwaite, 1992; Braithwaite, 2002; 2007) by demonstrating that long-term oriented firms are more likely to respond to a supportive regulatory style in communication. The main implication is that regulatory authorities can use support in communication with long-term oriented firms to increase the quality of reported information.

1.6 Concluding note

The main message of this dissertation is that firms have different economic motivations (as captured in time horizon and incentive compensation), and that these differences can influence firm (i) compliance, and (ii) responsiveness to supervision. Regulatory authorities may benefit from using economic motivations in decisions on (i) which firms they should monitor and supervise, (ii) how intrusive to supervise firms, and (iii) which regulatory attitude to use in communication with firms that are being supervised. Overall compliance may increase by tailoring supervision to the characteristics of firms that are supervised.

I identify various directions for future research. First, future empirical field studies can examine if responsiveness to supervision depends on other (combinations of) firm characteristics and motivations than the ones (i.e., time horizon, and incentive compensation) identified in this dissertation. For instance, firms consist of multiple individuals with their own motivations and drivers of compliance (Ayres & Braithwaite, 1992), and future studies can study how the dynamics of these motivations and drivers of compliance can impact firm compliance. A more complete overview of motivations and characteristics that influence regulatory decisions can enable regulatory authorities to design more efficient supervision strategies, and thereby save public resources.

Second, future studies can evaluate if firm compliance results in the achievement of regulatory objectives. Although the existence of such association seems straightforward, in practice this may not be the case because: (i) firms can comply with the “letter” of the law, but not act in the “spirit” of the law (or vice versa), and (ii) laws may be inaccurately designed. For example, the Securities and Exchange Commission introduced “mandatory risk disclosures” in 2005 which requires firms to disclose risk factors in their form 10-K with the objective to inform investors on (firm-specific) risks. Firms comply with “the letter
of the law” by disclosing these risk factors, but may not act in line with “the spirit of the law”, by for instance using boilerplate language which decreases the informativeness of their disclosures (e.g., Dyer, Lang & Stice-Lawrence, 2017, Beatty, Cheng & Zhang, 2019; Huang, Shen & Zang, 2019). Studies on this topic are relevant for regulatory authorities, as it will allow them to evaluate the effectiveness of regulation.

Third, given that authorities are gathering more and more data, future studies may want to examine in which way these data can (further) contribute to the development of more efficient and effective regulatory processes. Some authorities already apply data-driven (or risk-based) supervision techniques, such the Dutch Central Bank (van Maaren, 2016), and several Dutch government inspectors (Rijksinspecties, 2019). They use data, for instance, to (i) target supervision, (ii) detect risks in the market, (iii) prioritize supervisory work, and (iv) make public reports more informative (DNB, 2018; Rijksinspecties, 2019). However, the use of such techniques comes with risks and costs such as assurance of data quality and safety, the risk of data overload, and the efficiency gathering and processing data (DNB, 2018; AFM, 2019). Future studies may also want to focus on the risks and costs associated with data-driven supervision, and try to find ways to decrease them.

Finally, there is a lack of understanding on how authorities use responsive regulation in practice (Nielsen, 2006). Studies can examine (i) ways in which authorities use responsive regulation, and (ii) whether this leads to better regulatory outcomes than other (stand-alone) regulatory strategies (e.g., self-regulation or command-and-control regulation). Field studies may be especially fruitful in this type of research as it is questionable whether laboratory experiments provide insight in real world trade-offs within firms (Choo, Fonseca & Myles, 2016; Lindeboom, Van der Klaauw & Vriend, 2016).