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Impacts of environmental regulations on firm performance –The development of a new perspective

Påverkan av miljökrav på företags prestanda – utvecklingen av ett nytt perspektiv

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Summary

Currently there are two dominant theories by professor Michael Porter explaining how firms could increase profitability by acting sustainably and what the potential outcome of complying with environmental regulations may be. The Porter hypothesis is about the impact of regulations and has further been developed into ‘creating shared value’ which explains how firms can reach new potential profitability by searching for sustainable business opportunities. Both of these theories are viewed separately and not in conjunction with one another even though one has motivated the other. Furthermore, the theories underlie a stakeholder theoretical approach, meaning that firms should focus on all various stakeholders in a firm, instead of a shareholder approach, which argues for firms to focus solely on profitability and shareholder value maximization. So far studies have been inconclusive regarding the validity of the theories and scholars find evidence both for and against.

The aim of the study is to evaluate the two theories in order to understand if a relationship exists between them and moreover the impact of shareholder theory versus stakeholder theory is examined to view if firms have different outcomes when faced by regulations. The focus of the study is on how firms respond to regulations and how they work to become compliant whilst simultaneously remaining or increasing profitability. To analyze these theories, a qualitative case study is performed deductively with five firms in different industries and of different sizes that are affected by new environmental regulations concerning single-use plastics.

The study found that out of the five firms, three were shareholder-oriented and two were stakeholder-oriented. The shareholder-oriented firms achieved or projected increased profitability and shareholder value in response to the new environmental regulations whilst the stakeholder-oriented firms achieved the opposite.

The conclusion of this study presents a new conceptual model which shows the relationship between the Porter hypothesis and ‘creating shared value’ where this relationship underlies shareholder theory. The empirical findings show that the Porter hypothesis is strongly connected to ‘creating shared value’ and shareholder theory is the foundation for firms that increase profitability after complying with environmental regulations. The implication of this is that firms do not directly need to consider sustainability in their business models. Regulations will push firms to be sustainable as well as to maximize shareholder value and firms which have a sustainability outlook in their business will likely fall behind when faced by regulations.

Keywords: *creating shared value, environmental regulation, Porter hypothesis, shareholder theory, stakeholder theory.*

Sammanfattning

För närvarande finns det två dominerande teorier av professor Michael Porter som förklarar hur företag kan öka lönsamhet genom att agera hållbart samt vad det potentiella resultatet av att följa miljökrav kan vara. Porters hypotes (på engelska: 'the Porter hypothesis') handlar om effekterna av regelverk på företag och har sedan vidareutvecklats till 'skapa delat värde' (på engelska 'creating shared value') som förklarar hur företag kan nå ny potentiell lönsamhet genom att söka efter hållbara affärsmöjligheter. Båda dessa teorier ses separat och inte i samband med varandra trots att en har motiverat den andras begynnelse. Vidare utgår båda ur intressentteori (på engelska: 'stakeholder theory') som menar på att företag ska fokusera på att alla företagets olika intressenter och inte enbart på att generera vinster och öka aktievärdet som aktieägarteorin (på engelska: 'shareholder theory') förespråkar. Hittills har studier varit entydiga om teoriernas giltighet och forskare hittar bevis både för och emot.

Syftet med denna studie är att utvärdera de två teorierna för att förstå om det finns en relation mellan dem och dessutom undersöks effekterna av aktieägarteori och intressentteori för att se om företag får olika resultat när de ställs inför reglering. Studiens fokus är på hur företag reagerar på miljökrav och hur de arbetar för att efterleva kraven samtidigt som de har kvar/ökar sin lönsamhet. För att utvärdera dessa teorier utförs en kvalitativ fallstudie med en deduktiv metod med fem företag i olika branscher och av olika storlekar som alla påverkas av nya miljökrav gällande begränsning av engångsplaster.

Studien fann att av de fem företagen, var tre av dem aktieägar-orienterade och två av dem intressent-orienterade. De aktieägar-orienterade företagen uppnådde eller prognostiserade ökad lönsamhet och aktieägarvärde som respons på de nya miljökraven medan intressent-orienterade företagen ernådde motsatsen.

Slutsatsen av denna uppsats är utvecklingen av en ny konceptuell modell som visar förhållandet mellan Porters hypotes och 'skapa delat värde' där denna relation bygger på aktieägarteori. Den empiriska datan visar att Porters hypotes är starkt förknippad med 'skapa delat värde' där aktieägarteori är utgångspunkten för de företag som ökar lönsamhet efter att ändra sin verksamhet till följd av miljökrav. Implikationen av detta är att företag inte direkt behöver ta hänsyn till hållbarhet i sina affärsmodeller, regleringarna kommer att driva företag att vara hållbara såväl som för att maximera aktieägarvärde och lönsamhet samt att företag som har en hållbarhetsutsikt i sin verksamhet troligen kommer att falla bakom när de möts av nya lagkrav.

Nyckelord: *aktiägarteori, intressentteori, miljökrav, Porters hypotes, skapa delat värde*

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1 Introduction

In this introductory chapter the background and subject of the thesis is presented. The chapter further presents the aim, research questions and delimitations along with a short background to the various regulations that are observed in the thesis. The chapter concludes with an outline for the thesis' different chapters.

There is an ongoing debate regarding firms’ roles in societal issues. It has been claimed that firms must take responsibility for pollution they create as well as contribute to a beneficial society in, among other things, environmental matters (Moon et al., 2011). It has been argued by scholars and the business community that increased regulation regarding firms’ social responsibility decreases corporate profits because of higher costs of compliance with regulation (Crane et al., 2014; Jaffe & Palmer, 1997; Lanoie et al., 2008; Palmer et al., 1995), but this may not be the case. There are two dominant theoretical views that debate whether firms can be more societally friendly at the same time financially rewarding. The first one is called ‘the Porter hypothesis’ (Porter, 1991; Porter & van der Linde, 1995a, 1995b) and the second is ‘creating shared value’ (Porter & Kramer, 2011), both developed by professor Michael Porter together with colleagues in different time periods.

The Porter hypothesis posits that the ‘right kind’ of environmental regulation increases firm profitability since the firm is forced to ‘innovate’ in order to stay competitive. The prerequisite is that the regulation is ‘goal-oriented’ rather than ‘process-oriented’ which will allow firms to comply by using whatever means suit them (Porter & van der Linde, 1995b). This theory has been met with both support (e.g. Ambec *et al*., 2013; Eli & Bui, 2001; Lanoie *et al*., 2008; Murty & Kumar, 2003) and critique (e.g. Brännlund & Lundgren, 2009, 2010; Jaffe & Palmer, 1997; Palmer *et al*., 1995). The proponents of the theory find evidence supporting the Porter hypothesis, for example Eli and Bui (2001), whilst the opponents, for example Palmer *et al*. (1995), find evidence that environmental regulations, irrespective of the kind, hurts profitability. The conventional line of economic wisdom is in fact that all regulation decreases firm profitability and that it damages the overall economy (Jaffe & Palmer, 1997). Others argue that the Porter hypothesis is an elaborate and attractive theory maintaining that the firm can prosper at the same time as society does and has thus attracted attention from the business community (Rassier & Earnhart, 2015).

The Porter hypothesis has further been developed into a theory called ‘creating shared value’ (**CSV**) (Porter & Kramer, 2011). CSV is a separate and more recent theory arguing for firms to exploit business opportunities in ways that benefit societies as well as their bottom line (Crane *et al*., 2014; Porter & Kramer, 2011). Porter and Kramer give the example of Nestlé who started working together with small-scale farmers to help develop their farming techniques and subsequent output. This generated substantially higher incomes for the farmers as well as higher quality and quantity of goods for Nestlé (Porter & Kramer, 2011).

A more universal problem, such as resource use and waste, has caused disagreements among countries and scholars and is an interesting and relevant phenomenon to use in order to understand the Porter hypothesis in connection with CSV. For example, plastic material, and particularly single-use plastics such as bags, straws, cups, cutlery etc, have attracted attention by media, regulators, and the business community (Logomasini, 2019; Wijkman *et al*., 2020). There are claims that plastic is bad for the environment and that it litters the seas, but is also argued to be more practical in use than the alternatives and when recycled correctly is climate-neutral and beneficial and can be used in a plethora of different items today. It is thus important to undertake studies in order to explore how companies respond to the threat of regulation and how they can stay profitable at the same as they decrease the use of polluting materials (Eriksson, 2019).

1.1 Problem Background

The plastic debate has arisen since plastic material, and particularly plastic material recycled by consumers, has proven hard to recycle because of the different ingredients which go into it and simultaneously it cannot be broken down and causes littering in the environment (Eriksson, 2019; Logomasini, 2019). This causes the un-recycled plastics to end up in nature, such as the seas, and threatens the health of both humans and animals since small pieces of plastics end up being eaten by animals, and consequently by humans (Eriksson, 2019). Something must therefore be done about this problem and regulators have turned to strict regulations in order to limit plastic pollution. This has caused concern among firms that are affected by the regulations and a general negativity towards them since firms expect to become less profitable and perhaps even become redundant (Beschorner, 2013; Spitzeck & Chapman, 2012).

Porter and van der Linde (1995b) propose that regulations motivate firms to seek out innovations that should increase firms' overall profitability (Ambec & Barla, 2002; Mohr, 2002). Some quantitative studies oppose the Porter hypothesis in general and find only some anecdotal cases where the hypothesis seems relevant (Ambec *et al*., 2013; Brännlund & Lundgren, 2009, 2010; Jaffe & Palmer, 1997; Palmer *et al*., 1995). The various quantitative studies that have been performed have in fact shown a general disagreement with the Porter hypothesis, or more specifically its 'strong version' (Palmer *et al*., 1995) and claim that environmental regulations, irrespective of the kind, decrease profitability and competitiveness. Palmer *et al*. (1995) argue that regulations decreases firm profitability most often because of a high cost of compliance and that any potential performance increase does not offset the initial compliance cost.

Although this is the general consensus, several articles establish that environmental regulations foster an innovative environment that can at least offset to some extent the initial cost of compliance (Eli & Bui, 2001; Murty & Kumar, 2003). Most qualitative studies have shown to agree to the positive findings – that the Porter hypothesis holds true (Murty & Kumar, 2003; Pfitzer *et al*., 2013; Porter *et al*., 2012; Porter & Kramer, 2011; Rennings & Rammer, 2011). There is thus a disagreement as to whether the hypothesis is generally correct or incorrect where the different positions can be explained by different methodological approaches. It is also assumed that these theories underlay a stakeholder theory, that firms are not only responsible to maximize shareholder value but also to act in the best interest of other stakeholders, such as employees, customers, the society it operates in etc (Rassier & Earnhart, 2011). This causes a problem in that the firm has several goals and responsibilities and cannot merely address the problem of maintaining or increasing profitability (Jensen, 2002). Arguably this is a reason that the theories have generally been negated and this thesis will therefore attempt to showcase the Porter hypothesis and CSV in connection to each other and instead underlie shareholder theory.

1.2 Delimitations, Aim, and Research Questions

To offer a different perspective for the Porter hypothesis and CSV in order to establish its validity, this thesis uses the shareholder theory (Friedman, 1962; 2007) instead of the stakeholder theory (Porter & Kramer, 2011; Porter & van der Linde, 1995b). By also assuming that firms behave rationally in decision making (Tversky & Kahneman, 2017) and by employing fundamental economics, such as that firms pursue profit-making investments, the thesis focuses on understanding of how environmental regulations foster innovative behavior from firms focusing on maximizing shareholder value. More specifically the focus is on how firms respond to regulations which will be decisive for their long-term profitability. The thesis explores how shareholder- and stakeholder-oriented firms react to regulation challenges and what the consequential outcomes of their respective behaviors are, the thesis does therefore not take into consideration which type of firm is more profitable overall, but merely which type of firm responds to regulations in the most financially rewarding way. Furthermore, it may be argued that stakeholder-oriented firms are better for society overall (Freeman *et al*., 2004), but this is not elaborated on in the thesis as it merely looks at profitability in regards to complying with environmental regulations and in relation to the chosen theories.

The aim of this study is to evaluate the two dominant theories that view sustainability in connection to profitability in order to explain what kind of relationship that exists between them and how shareholder theory influences them. This leads to the two research questions;

- How does the Porter hypothesis relate to creating shared value (CSV)?
- How does shareholder theory and stakeholder theory impact this relationship?

To answer these questions the newly enacted directive regarding the European Union's (**EU**) ban on single-use plastics, Directive 2019/904, was chosen as an empirical illustration as well as a newly enacted tax in Sweden on plastic carrier-bags, SFS, 2020:32. These two regulations lay some fundamental groundwork in reducing single-use plastic products and both are goal-oriented regulations that allow firms to adopt appropriate processes to comply. These are what are argued 'right kinds' of regulations (Porter & van der Linde, 1995b) and are thus appropriate to use as a phenomenon for targeting the research questions. The thesis adopts a case study approach, analyzing five firms all faced by the new regulations to understand how firms work with complying with new environmental regulations. The firms that were chosen were so because they all faced challenges from the regulations and needed to find techniques to alleviate those challenges and they were furthermore in different industries and of different sizes which allowed for analyzes to be made for a wide scope of firms.

1.3 Background to Regulations

The EU Directive 2019/904 was enacted to ensure an end to plastic material contamination of waters and further damage to the environment (EU, 2019). The directive states in article 1:

> *"The objectives of this Directive are to prevent and reduce the impact of certain plastic products on the environment, in particular the aquatic environment, and on human health, as well as to promote the transition to a circular economy with innovative and sustainable business models, products and materials, thus also contributing to the efficient functioning of the internal market"* (EU, 2019, p. L155/8).

The directive has thus been legislated by the EU to improve the environment and human health of the contracted nations, as well as to force firms to innovate away from single-use plastics. Since it is an EU directive it is not a law which is identical in each member state. The directive is instead a law that forces member states to create their own legislation which must be at least as strict as the directive but can be stricter if the country wishes. In terms of penalties for breaking the law it is up to each separate member state and the EU (2019, p. L155/14) says in article 14 that: *"…the penalties provided for shall be effective, proportionate and dissuasive."*

The second regulation which is used to analyze cases, is the Swedish tax on plastic carrier-bags for consumers which came into effect on the 1st of March 2020 (SFS, 2020:32). The regulation specifically targets plastic carrier-bags and does not differentiate between carrier-bags made from new or recycled materials. The regulation specifies the thickness interval the plastic carrier-bag must have as well as the purpose of the bag. Plastic carrier-bags that are used to transport goods from a store to a person's home are taxed with 3 SEK. Plastic carrier-bags used to hold fruit, vegetables etc. are taxed with 0,3 SEK (SFS, 2020:32). The tax is paid to the tax department directly by the firm producing or importing the bags.

The regulations were chosen since they allow firms to comply in whatever way suits them instead of compelling firms to comply in a certain way. The only objective of the regulation is that firms stop using certain plastic products, decrease usage of certain plastic products, or that they pay a tax on plastic carrier bags. How firms choose to comply with the regulations are up to them. This method of regulating corresponds to Porter and van der Linde (1995b) who argue that there are some different measures that regulators must take when creating regulations but the most important parts are that the regulation has clear and controllable goals, that it is goal-oriented, and that it stimulates innovative action from firms. In this sense, both regulations are goal-oriented in that they do not prescribe any form of process or system for compliance with the law. Firms are free to adapt their processes to become compliant in any way appropriate to them. The regulations have controllable goals in that all plastics that are listed in the EU directive must be prohibited or reduced, and all plastic carrier-bags (according to the definition in the law (SFS, 2020:32)) are taxed with a determined amount. And lastly it has the potential to trigger innovation since firms will be faced with the choice of higher costs for substitute goods, or innovations for long-term cost-decrease and higher profitability.

1.4 Outline

The outline of this thesis is the following: in the next chapter the theory is presented and discussed. Chapter three describes and discusses the choice of method used to perform the thesis and the empirical investigation, as well as gives information on the various sources and how data was collected. Chapter four presents the empirical findings that have been found by using a qualitative case study method and has been summarized in Table 3. Chapter five discusses the findings in relation to the theory and the research questions and chapter six delivers the final conclusions and implications of this thesis as well as the limitations and further research areas.

2 A Theoretical Review

There are three theories that are the foundation of this thesis and that shall be used to establish the answers to the two research questions. Below the three theories are shortly presented and reviewed.

2.1 The Porter Hypothesis

Contrary to traditional economic beliefs, Michael Porter postulated in an essay in Scientific America in 1991 that strict environmental regulation can increase firm profitability and competitiveness (Porter, 1991). Porter further argued that if a country adopts stricter environmental policy and regulations, that country would have a positive economic benefit relative to nations with less strict regulations. This theory was further elaborated by Porter and van der Linde in two articles from 1995 (Porter & van der Linde, 1995a, 1995b). In the articles they extend the argument for strict environmental regulation, and they showcase their theory with several eloquent case studies which support the theory and argue that firms are forced into situations where they need to be creative in order to overcome the costs of complying with the new regulations.

The Porter hypothesis is constructed of several different parts in relation to each other. Firstly, crucial for the theory, is that the regulations need to be the 'right kind' (Porter & van der Linde, 1995a, 1995b). They discuss that the regulations must allow firms to comply with them in the way that is most appropriate for the firm and it is important that the regulation is goal-oriented and not process-oriented. Secondly, the theory argues that with these regulations firms will be motivated to reduce the inefficient use of resources and it is thus assumed that firms are using some kind of polluting process or resource that is inefficient and can be reduced or innovated away (Porter & van der Linde, 1995b; Ramanathan *et al*., 2017). Furthermore, the term 'innovations' is used broadly to include not only different products but also different processes and other such implementations. Porter and van der Linde (1995b, p. 98) state: *"We use the term innovation broadly, to include a product's or service's design, the segments it serves, how it is produced, how it is marketed and how it is supported"*. It is thus understood that innovations can be many different forms of changes to a firms' product, process, or even environment.
In sum, the Porter hypothesis argues that strict environmental regulations of the right kind (allowing firms to comply in a suitable way) encourages firms to innovate in order to address inefficient and unsustainable practices. These innovations increase the firms' profitability consequently offsetting the cost of compliance in a long term perspective (Porter & van der Linde, 1995b, 1995a).

The theory has gained a lot of attention, but some researchers believe the 'hype' surrounding this theory is thanks to a 'Porter effect' where most of Porters work is well-read and cited and that this theory therefore has captivated many economists (Jaffe & Palmer, 1997; Palmer *et al*., 1995). The Porter hypothesis has furthermore been met with considerable criticism, particularly by Palmer *et al*. (1995). They argue that the hypothesis is opposing general economic ideas by claiming that regulation is needed to incentivize firms to seek out higher profits (Brännlund & Lundgren, 2009; Jaffe & Palmer, 1997; Palmer *et al*., 1995). These economists argue that if there are opportunities to increase profits, then they would have already been taken advantage of in a free and competitive market. The saying goes that an economist would never find a ten dollar bill on the ground since they assume that someone else would already have picked it up (Jaffe & Palmer, 1997). The criticism also surrounds the fact that many quantitative studies have been inconclusive in their findings and it is thus hard to generalize the hypothesis (Lanoie *et al*., 2008). However, most inconclusive quantitative studies have acknowledged at least some part of the hypothesis and Palmer *et al*. (1995) have categorized the hypothesis to three versions: strong, weak, and narrow. The strong version implies the full Porter hypothesis and a 'win-win' situation where environmental regulation does improve firm profitability. The weak version of the hypothesis acknowledges that regulations make firms spend more of their income on research and development (**R&D**) activities as well as innovate more but does not support the notion of increased profitability. The narrow version states that certain types of environmental regulation stimulate innovation (Palmer *et al*., 1995). Most studies that have been performed have acknowledged at least a weak version of the Porter hypothesis despite the criticism (Ambec *et al*., 2013; Jaffe & Palmer, 1997; Lanoie *et al*., 2008; Palmer *et al*., 1995), only some few studies have shown a complete disagreement with the Porter hypothesis. Brännlund and Lundgren (2010) studied the effect of a carbon dioxide tax, which they argue was a suitable regulation in accordance with Porter and van der Linde (1995b), on profitability with data derived from the Swedish paper and pulp industry. Their study showed that there was little or no relation between the environmental regulation and profitability in Sweden. However, they admitted some shortcomings in their study, including issues of time-frame and admitted that if their analysis had taken a longer time-frame the results may have differed. This is also something that's evident from the majority of qualitative studies which claim that analyzing the Porter hypothesis quantitatively is difficult in that the data may not be satisfactory or representative of the case at hand (Ramanathan *et al*., 2017).

Although some studies have disagreed with Porter and van der Linde (1995a, b), several studies show mixed results where some parts of the Porter hypothesis are accepted but others are not. Jaffe and Palmer (1997) study the relationship between environmental expenditures and R&D as well as ensuing patent applications by performing a quantitative analysis including a large data set in the manufacturing industry. The authors find no substantial evidence of a strong version of the Porter hypothesis, or a win-win scenario, but find support for a weak version where environmental regulation leads to increased R&D spending. Thus, a mixed result showing that firms do indeed increase their innovation work, but not so far as in offsetting the cost of compliance. Furthermore, it has been argued that the Porter hypothesis may be theoretically true, even though traditional economics oppose it. The most prominent argument against the hypothesis is that firms do not need regulation in order to innovate for higher profits since a rational, profit-seeking firm should innovate without regulation (Xepapadeas & De Zeeuw, 1999). Even so, it has been argued that firms are not previously aware of opportunities that arise through the incentives of environmental regulation and that the regulation in fact assists the firm in seeking out new potential innovations to offset the cost of compliance (Porter & van der Linde, 1995b). Xepapadeas and De Zeeuw (1999) find that although their study cannot prove a win-win situation (strong Porter hypothesis), they do find a restructuring of capital stock as a result of stricter environmental regulation indicating that firms e.g. remove the use of older, more polluting machinery and replaces it with newer and more efficient. This leads to more sustainable use of capital and resources, but may not offset fully the initial investment (Xepapadeas & De Zeeuw, 1999). This result is intriguing since it shows that the stricter environmental regulation makes firms comply with the regulation but it also shows the firm employing more efficient use of capital and resources which can have a net positive effect in the long-run.

In a study by Lanoie *et al*. (2008) it is discussed that the critisicm towards the Porter hypothesis is threefold: (1) they argue the empirical evidence supporting the hypothesis is not generalizable and at best anecdotal, (2) in traditional economics there are no *"low hanging fruits"* (Lanoie *et al*., 2008, p. 121) meaning a firm does not need regulation to induce profit-seeking behaviour, in fact, regulation hurts profitability in a free and competitive market, and (3) the various studies performed have provided arbitrary results (Lanoie *et al*., 2008). Lanoie *et al*. (2008) studied the relationship between the strictness of environmental regulation and the total factor productivity growth on a large dataset consisting of manufacturing firms in Quebec and their study showed that when looking at a dynamic time-frame, the impact of regulation could in fact be less damaging than previously argued, thus confirming the Porter hypothesis in this setting. They further argue that when looking at firms with substantial international competition the results were clearer. Contrary to the Porter hypothesis Lanoie *et al*. (2008) indicate that manufacturing firms with a higher degree of pollution saw a decline in productivity over a longer term arguably due to heavy investments needed to be compliant with regulations (Lanoie *et al*., 2008). The study concludes by supporting the Porter hypothesis for firms in a more competitive environment and argues the opposite for highly polluting firms.

The findings by Lanoie *et al.* (2008) are consistent with Rennings and Rammer (2011) who argue that firm innovations are neither more or less succesful when they are regulation-induced than market-induced, meaning that innovations in products or processes have no relation to what induced the innovations. This indicates that innovations occur within the firm only when necessary to stay relevant and Rennings and Rammer (2011) further argue that the type of regulation is highly relevant to the success of the firm, this in line with Porter and van der Linde (1995b). It is important that the regulation is goal-oriented rather than process-oriented and that firms are free to comply with the regulation in the most suitable way (Porter & van der Linde, 1995b; Rennings & Rammer, 2011). Rennings and Rammer (2011) discuss that the Porter hypothesis is correct in some areas but incorrect in others and find that in some industries the cost of compliance may be easy to pass on to the end consumer in forms of higher prices, whilst in more competitive industries it may be more difficult. They further find some limitations with their study reporting that it is dependant on only one year of data and that it cannot be generalized. Again this shows that studies lack the proper time-frame to analyze the Porter hypothesis in an adequat way.

In another study Rexhäuser and Rammer (2014) build on earlier studies and argue that innovations that improve the firms resource efficiency also increase profitability, whilst innovations that do not improve resource efficiency shows the opposite. This study takes a rather restictive approach therefore by looking purely at a firms resource use, but does also find that regulation-induced innovations have a more positive impact on the firm than voluntary innovations (Rexhäuser & Rammer, 2014). Their findings indicate that when looking purely at the use of resources the Porter hypothesis is correct, but their study cannot be generalized in its entirerity. Their conclusion is that the findings do not prove the strong version of the Porter hypothesis but that it depends on the type of regulation, thus agreeing with earlier literature arguing that the type of regulation is crucial for the hypothesis to be proven correct (Porter & van der Linde, 1995b; Rennings & Rammer, 2011; Rexhäuser & Rammer, 2014).

The reason for the mixed and negative reports can arguably be due to the fact that they use a large variation of proxies for calculating the cost of environmental regulation, firm profitability, and competitiveness (Rexhäuser & Rammer, 2014). It is therefore difficult to engender a common result from the various studies. Another issue is the time-frame. It has been argued that many studies do not take into consideration the amount of time that it takes for a firm to offset the cost of compliance and to generate higher income (Mohr, 2002). The difficulty lies in appropriately measuring the correct data since simply looking at a firm’s profitability will undoubtedly include other factors than simply the innovations to comply with regulation. It can therefore be argued that quantitative studies which view the firm by using proxy financial data, as well as an inappropriate time-frame, cannot possibly lead to a justified conclusion.

As opposed to the negative and mixed views of the previous studies, a large number of studies has confirmed the Porter hypothesis and in a theoretical contribution, Mohr (2002) shows that the Porter hypothesis is not only true, but is in fact in line with economic theory. He relates the hypothesis to other economic theories that have similar implications, i.e. that strict regulation induces increased profitability and competitiveness (Mohr, 2002). Specifically he relates the Porter hypothesis with the ‘infant-industry’ theory which supports regulation in terms of trade barriers and tariffs in order to grow an industry to ‘maturity’ before allowing substantial international competition (Mohr, 2002). He finds some similarities with the implications of these two theories and further develops a model to show the validity of the Porter hypothesis. He concludes that although the Porter hypothesis is correct, it does hold a wide array of difficult implications for regulators where the regulations that are introduced must be of such kind that stimulates innovation and does not favor any type of technology. In terms of political lobbying and other factors that may prevent regulators from producing suitable regulations he argues that the ‘infant-industry’ theory although economically valid, brings about it more problems than benefits and that perhaps that is true for the Porter hypothesis also (Mohr, 2002). Even though he ends his article on a somber note, the validity of the hypothesis is proven correct. Another article which theoretically proves the validity of the Porter hypothesis is Ambec and Barla (2002). It is argued through an economic model that by creating strict environmental regulation firms private benefits increase (Ambec & Barla, 2002).

A further well-cited article discusses the validity of the Porter hypothesis by analyzing oil refineries in the United States (Eli & Bui, 2001). In particular they analyze the effect of environmental regulations in terms of abatement costs on the productivity of the refineries. Their findings indicate that in areas where abatement costs are higher, it also follows that productivity increases. The authors look particularly at Californian refineries where regulations tend to be stricter than the rest of the US and find that the higher abatement costs for the Californian refineries also increased their productivity in general as compared to the rest of the US (Eli & Bui, 2001). Furthermore, during a period of study, 1987-1992, refineries outside of California saw a drastic decrease in productivity at the same time as Californian regulations increased and the refineries in general performed better there (Eli & Bui, 2001). This sincerely validates a strong version of the Porter hypothesis and Eli and Bui (2001) further argue that a reason previous studies have shown mixed results can be because of heterogeneity bias and measurement errors.

Other studies that support the Porter hypothesis include Sánchez *et al.* (2011) who find results in Spain where certain taxes have been introduced to control the food industries wastewater treatment. The study looks at two various taxes in several different Spanish regions and conclude that one of the taxes induces firms to innovate and invest in wastewater treatment processing, whilst the other tax is inadequate and, therefore, does not stimulate innovation (Sánchez *et al.*, 2011). To some extent both these cases speak for the Porter hypothesis since the first tax induces firms to innovate and the second is a poorly designed regulation that doesn’t induce firm innovation – therefore in line with Porter and van der Linde’s (1995a, b) arguments. Furthermore, Murty and Kumar (2003) studied the effect of environmental regulation on the productive efficiency of water-polluting industries in India where they had a set of 92 firms and studied quantitatively the effect of the regulations on the sugar industry where the main goal was to analyze the win-win, or the strong, version of the Porter hypothesis (Murty & Kumar, 2003). The authors argue that the Porter hypothesis makes firms internalize their environmental costs rather than the costs being imposed on society, so-called externalities. Well-made regulations shall thus incentivize firms to increase their profitability, or at least remain profitable, by innovating and to offset the cost of compliance (Murty & Kumar, 2003). They test the concept of a win-win relationship between environmental gains and profitability and find that in the Indian water-polluting industry, over a period of 3 years, the hypothesis proves to be correct (Murty & Kumar, 2003). They thus show through their empirical study that technical efficiency does improve with the strictness of the environmental regulation and that the Porter hypothesis is supported (Murty & Kumar, 2003).

The previous literature seems to consistently argue that chemical industries have high pollution and that they perhaps tend to be more prone to support the Porter hypothesis. Rassier and Earnhart (2015) show this to be the case when they study the effect of clean water regulation on public companies in the chemical industry. Not only do they look at actual profitability, but on expected profitability also stating that for public firms the shareholder value is important for investors and as such the expected profitability of environmental regulation is highly relevant (Rassier & Earnhart, 2015). Their findings indicate that actual profitability increases with strict environmental regulation but that expected profitability decreases. This indicates that their findings support the Porter hypothesis but they add a different element in that the belief of investors shows a lower profitability of the firm as well as decreased share value. Furthermore, Rassier and Earnhart (2011) study the same dataset of publicly-owned chemical firms to assert the strong version of the Porter hypothesis in terms of both short-term and long-term financial performance. They studied the effect of clean water regulation on the firms' financial performance in terms of returns on sales. Their findings supported the Porter hypothesis in both the short-term and the long-term with increases in returns on sales (Rassier & Earnhart, 2011). The findings indicate that both in the short-term and in the long-term does environmental regulation stimulate innovation and higher profitability. This particular finding is specifically towards the chemical industry of publicly owned firms and opponents will argue that it is not generalizable across the spectrum. But even so, along with previous findings supporting the Porter hypothesis it adds support and validity.

A segment of the Porter hypothesis that has become fairly acknowledged and accepted, is the part that regulations play where it has been ascertained that the regulation must be goal-oriented and not process-oriented, allowing firms to adapt and innovate to comply with the regulation (Palmer *et al*., 1995; Porter & van der Linde, 1995b; Ramanathan *et al*., 2017). The flexibility of the regulation has proven to be a crucial element, Ramanathan *et al*. (2017) discuss that flexible regulations create incentives for firms to be innovative and enhance their performance by use of sustainable practices. These innovations could involve new products or services, effective partnerships and outsourcing options in order to build sustainable value-chains, and improved processes where sustainability plays a key role (Ramanathan *et al*., 2017). They further argue that firms that have a dynamic approach towards complying with regulations and already prioritize environmentally friendly products, services and processes, are more apt at dealing with innovations to comply with new regulations. They conclude their article with a request for more work to be done in the area of setting regulations.

To summarize this part of the theoretical framework, the article 'The Porter Hypothesis at 20: Can Environmental Regulations Enhance Innovation and Competitiveness' by Ambec *et al*. (2013) gives important insights regarding the work that has been done since Porter (1991) and Porter and van der Linde (1995a, b) introduced the subject. They discuss that the Porter hypothesis generated a large amount of interest among scholars, businesses, and other interested parties when it was proposed that strict environmental regulation can induce innovation which in turn creates profitability and competitiveness (see Figure 1).

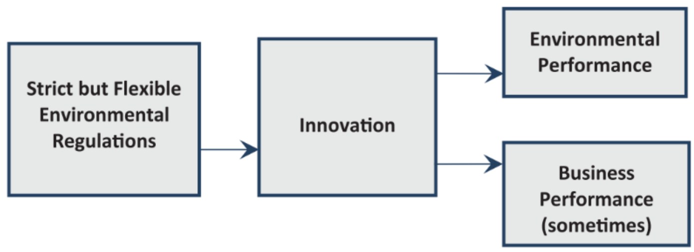

Figure 1. Schematic representation of the Porter Hypothesis (Ambec et al., 2013, p. 4).

The Porter hypothesis been criticized, particularly by Palmer *et al*. (1995), but also received support finding. Ambec *et al*. (2013) argue that although much has been written about the Porter hypothesis, the findings have often been contradicting and shown mixed results. While the weak version of the hypothesis has been largely accepted, the strong version remains debated. However, some recent studies show support for the strong version, also called the win-win situation, but more work needs to be done.

2.2 Creating Shared Value (CSV)

CSV is a theory introduced by Michael Porter and Mark Kramer in a series of Harvard Business Review articles (Porter *et al*., 2012; Porter & Kramer, 2006, 2011). They argue that CSV is a concept where firms are motivated to seek out profitable business opportunities whilst also helping solve societal issues (Porter & Kramer, 2006, 2011). The theory has taken inspiration from previous work regarding various forms of corporate responsibility and created a more attractive, strategic and eloquent theory that is appealing to both scholars and the business community (Crane *et al*., 2014; Moon *et al*., 2011). It is also a theory strongly supporting an interdependence of business and society and argues that conventional corporate social responsibility (**CSR**) creates a trade-off between business and society which has instead depleted the purpose of corporate responsibility (Porter & Kramer, 2006, 2011). Porter and Kramer (2011) argue that societal issues to a large extent depend on firms since the firms rely on an outdated system to value-creation, the wider perception is that firms are to blame for many of societies' issues and that firms are prospering even though society does not. The increased work and recognition of firms' CSR has further been a negative cost to society and it can be argued that firms' work with CSR is more a distorted image than an actual objective (Porter & Kramer, 2011).

Porter and Kramer (2011) define CSV as:

> *"Policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress"* (Porter & Kramer, 2011, p. 6).

Thus, the concept of CSV is to incentivize firms to look for profit-making opportunities that also engage in societal improvement. However, a firm cannot, or rather, should not attempt to generate shared value opportunities in irrelevant issues, something Porter and Kramer (2006) call ‘generic social issues’ and are issues that may be important to society, but doesn’t affect firms’ long-term competitiveness and are not affected by firms’ regular business activities. ‘Value-chain social impacts’ are issues that are affected by the firm in its regular business activities. ‘Social dimensions of competitive context’ are such issues that affect the firms long-term competitiveness (Porter & Kramer, 2006). The authors argue that only the second and third type of issue should be attempted to be remedied by the firm and used to generate business opportunities. Porter and Kramer (2011) explain that this can be done in three respective ways: (1) by reconceiving products and markets, (2) by redefining productivity in the value-chain, and (3) by enabling local cluster development (Porter & Kramer, 2011). Furthermore, they argue that engaging in one of these areas also creates opportunities in the others because they are part of a circle.

By reconceiving products and markets it is argued that firms can change their products in order to meet new and dynamic customer and societal demands (Porter & Kramer, 2011). Porter and Kramer (2011) argue that for too long business studies and practice has focused on creating demand, a specific want or craving with the customer, rather than focusing on what the customer actually needs. Reconceiving products and markets therefore entail that a firm keeps it core products or services, but make them better suited for society. This can entail that a food company, previously focusing on tasty but unhealthy products, reconceives its products to become nutritional and healthy (Porter & Kramer, 2011).

In order to redefine productivity in the value-chain it is argued that firms can change their business processes in order to remove unsustainable practices and also increase their profitability. This can be done in many different areas of the business and Porter and Kramer (2011) argue that many different divisions and business units need to be involved in the process. An example is to reduce the use of packaging when shipping products, as well as to optimize delivery routes. By doing this one firm managed to save 200 million dollars in costs as well as reduce carbon emissions by over 100 million driven miles the first year (Porter & Kramer, 2011).
By enabling local cluster development Porter and Kramer (2011) argue that firms and society prosper and that although conventional sustainability metrics have created a trade-off between society and business, they are in fact interdependent and as such they need each other for survival. Business creates jobs, products, services etc. Society creates labor, customers, users etc. Clusters do not involve purely other businesses, but can also include schools, trade associations and other such organizations. They can also include different standard setting organs (Porter & Kramer, 2011). By enabling local clusters, such as Silicon Valley in San Francisco is for information technology, Porter and Kramer (2011) argue that business and society thrive together.

Porter and Kramer (2006, 2011) and Pfitzer *et al*. (2013) perform several case studies of well-known firms and brands and find different instances where the particular firm has found a CSV-opportunity. These various opportunities have resulted in the firm achieving an increase in profitability, as well as society benefitting in various ways. E.g. in one particular study Porter and Kramer (2011) looked at Nestlé, a large conglomerate in the food industry and found that the firm had partaken in CSV through its initiative to help small-scale farmers. Its initiative helped farmers with improving quality and quantity of their crops resulting in higher income for the farmers and consequently improved the quality of goods supplied to Nestlé, leading to shared benefits as a result of CSV (Porter & Kramer, 2011). Another case study was of the telecom-company Vodafone which initiated a mobile banking service in East Africa. It offers over 14 million people its services for a small fee and at the time of the article handled over 10% of the region's yearly gross domestic product (**GDP**) (Pfitzer *et al.*, 2013).

Porter and Kramer (2006, 2011) argue that CSV is more than just ensuring a firm has a positive image, it is about a new way to conduct business and they argue that it is a novel and contemporary way to view capitalism. They state:

> *"Creating shared value represents a broader conception of Adam Smith's invisible hand. It opens the doors of the pin factory to a wider set of influences. It is not philanthropy but self-interested behavior to create economic value by creating societal value"* (Porter & Kramer, 2011, p. 17).

However, CSV is not without critics. Crane *et al.* (2014) argue that the concept has some serious shortcomings and point out four areas which in their opinion, CSV lacks clarity and realism (Crane *et al.*, 2014). They argue that *CSV is unoriginal* since they find resemblance to earlier concepts within corporate responsibility (Crane *et al.*, 2014). Furthermore, Crane *et al.* (2014) argue that Porter and Kramer (2011) leave out important research done on the 'business case for CSR' which is a subject that has been studied since the 1970s arguing that firms engage in CSR intending to generate higher income. In a response to this article, Porter and Kramer (2014) argue that Crane *et al.* (2014) substantially missed the point of the concept and that CSV does not replicate 'the business case for CSR'. Porter and Kramer (2014) discuss the contribution of earlier research and acknowledge that although many different concepts and ideas exist regarding corporate responsibility, CSV is a fundamentally new perception that challenges the traditional views of trade-offs between society and business (Porter & Kramer, 2014).

Moreover, Crane *et al.* (2014) argue that CSV ignores the tensions between social and economic goals. They claim that ethical dilemmas affect how corporations behave and it is not certain that their focus will be on societal wellbeing. Crane *et al.* (2014) find that CSV is too simplistic in this area and takes the matter of trade-offs to lightly and that the simplicity of the concept may incentivize firms to seek out more simple issues to generate business opportunities and ignore larger societal challenges. However, this lack of critical analysis in terms of social and financial goals is not only true for CSV but for the majority of other corporate responsibility concepts also (Crane *et al.*, 2014) and it could be argued that CSV is a new way of elegant 'greenwashing'. They also state that CSV is naïve about the challenge of business compliance where they argue that Porter and Kramer (2011) take compliance with regulations, rules, and standards as a given. This is an area that has garnered much research in recent times and scholars argue that compliance with regulation is far from certain in most cases (Crane *et al.*, 2014). Crane *et al.* (2014) also argue that CSV is based on a shallow conception of the corporation's role in society. It is argued by Porter and Kramer (2011) that business and society must be connected and are interdependent but Crane *et al.* (2014) argue that this restructuring is unlikely and unrealistic. Not least because of earlier strategic and management literature which proposes a framework that puts the firm in the center and profit-generation as the ultimate target. Nevertheless, Crane *et al.* (2014) do find some positives with CSV, not least the attention it has received from practitioners as well as business scholars. It has further created an elaborate strategic framework for firms to enhance their corporate responsibility and to improve on already existing concepts.

In response to Crane *et al.* (2014) Porter and Kramer argued that Crane *et al.* missed fundamental ideas of CSV and that CSV has garnered attention from many high-profile firms because it has credibility and offers a strategic solution to solve both societal and business objectives. Furthermore, Porter and Kramer argue that the thinking and resonating of Crane *et al*. (2014) is the reason that CSR has been a concept lacking in strategic purpose for business and has been more a cost on business rather than an opportunity.

Although Crane *et al*. (2014) offer some major critique of the concept, many other researchers acknowledge the validity of the theory and offer more empirical insights to its applicability. In one particular study it was shown how CSV contributes to increased profitability in high-end hotels in Taiwan (Hsiao & Chuang, 2016). The authors show through case studies that hotels that implement 'green practice innovations' increase their profitability by lowering the costs of resources and creates shared value since the hotels both lower their use of resources such as water and electricity, and also improves their profitability. A similar study was conducted in Brazil where it was proven that a fundamental reshaping of a firms value-chain increased profitability and lowered the societal burden (Spitzeck & Chapman, 2012).

Apart from several studies that empirically test the viability of CSV, some studies have been conducted in order to develop or expand on CSV in some way. Florin and Schmidt (2011) contribute to the literature by developing a strategic framework in order to address how hybrid ventures can create shared value and they argue that the framework can assist such ventures to achieve high profitability and simultaneous societal benefits (Florin & Schmidt, 2011). Moreover, a study conducted by Moon *et al*. (2011) expanded on CSV by categorizing firms in four ways: 'stupid corporations', 'selfish corporations', 'good corporations' and 'smart corporations'. The authors argue that all firms should strive to be 'smart corporations' where both business and society are winners, the so called win-win case (Moon *et al*., 2011). They further argue that although CSV is a highly relevant and accurate theory, it does leave out some details and one of the most urgent arguments the authors discuss is that of internationalization. They discuss that Porter and Kramer (2011) leave out internationalization in their initial theory which Moon *et al*. (2011) argues should be included in CSV since it can increase business opportunities and increase profitability as well as societal benefits and thus create shared value. In sum, CSV argues that firms can and should search for business opportunities that increase firm profitability as well as societal benefits. In fact, Porter and Kramer (2006, 2011) argue that by engaging in creating societal benefits, the firm will be able to increase profitability. They have performed several case studies that point to this fact and the theory is highly elegant and attractive to both the business community as well as the research community. CSV has received some critique (Beschorner, 2013; Crane *et al*., 2014) but has received a plethora of support (Florin & Schmidt, 2011; Hsiao & Chuang, 2016; Moon *et al*., 2011; Spitzeck & Chapman, 2012).

2.3 Shareholder Theory

Shareholder theory posits that a firm has only one responsibility, to generate profits and maximize shareholder wealth. One of the most prominent economists of this theory is Milton Friedman (Carson, 2016; Danielson *et al*., 2008; Schaefer, 2008). Friedman (1962, 2007) argues that a business is fundamentally an artificial person, and as such it can have no responsibilities, all responsibilities lay with the shareholders of the firm and it is they who should set the business goals and objectives, which should be to maximize shareholder value. A corporate executive, or CEO, is an agent and the shareholders the principal (Friedman, 1962). Friedman's definition of shareholder theory are two different, but cohesive ones: (1) *"…the one and only obligation of business is to maximize its profits while engaging in open and free competition without deception or fraud"*, and (2) *"…business executives are obligated to follow the wishes of the shareholders (which is generally to make as much money as possible) while obeying the laws and the "ethical customs" of the society"* (Carson, 2016, p. 3). Friedman thus argues that the true nature and objective of business is to follow the wishes of the shareholders, whilst also following the laws and customs of society. Friedman (1962, 2007) also argues that firms engaging in corporate responsibility activities which impose a decrease of profits or without stated support by the shareholders are in fact committing thievery in that they steal money from the shareholders, from customers, and from employees. He labels it a tax on these same stakeholders and argues that a business executive is likely not the right person to engage in taxation and tax expenditure. Friedman (1962, 2007) further elaborates on the role of the executive as an employee of the firm and as such when the employee engages within profit-minimizing corporate responsibility activities he is in fact spending his employers' money. But Friedman (2007) also states that firms who have the permission of shareholders to engage in profit-minimizing corporate responsibility activities are within their right. Carson (2016) further argues that even if some shareholders were interested in societal issues and lowering profits in order to contribute to society's wellbeing, some shareholders may not share this view and could be unwilling to *"sacrifice their profits for the sake of the social causes in question"* (Carson, 2016, p. 10). In such circumstances it may be deemed wrong to change a firms' objectives to social good if it is at the cost of shareholder value.

Although Friedman (1962, 2007) is a highly influential economist on the subject of shareholder theory, Carson (2016) modifies the initial concepts that Friedman conceptualized since it entails some arguably fundamental flaws in regards to short-term profits at the cost of societal harm. This thesis, whilst arguing for the case of shareholder value and agrees with some of Friedman's points of view, will use the reconceptualized concept by Carson (2016):

> *"The one and only social (moral) responsibility of corporate executives is to act in accordance with the wishes of the owners[1] provided that they (1) obey the law, (2) engage in open and free competition, (3) refrain from fraud and deception, and (4) warn the public about all serious hazards or dangers created by the firms which they represent"* (Carson, 2016, p. 20).

Although the shareholder theory has had support over the years, it has also been heavily criticized. Opponents to the theory argue that it proposes short-term managerial thinking which can lead to unethical and even illegal actions (Danielson *et al*., 2008). In recent times some high-profile business scandals have made scholars and practitioners acutely aware of some shortcomings in their business practices and have come to blame the shareholder theory of value maximization. However, since the cases which have involved firms engaging in unethical and illegal activity are few, they are not enough to generalize the entire concept of shareholder theory, (Danielson *et al*., 2008) and in cases where firms do engage in such fraudulent behaviors, they do not adhere to the definition of shareholder theory and it can thus not be said to be the cause of their respective actions.

It has also been argued that shareholder theory allows the rights of one group (shareholders) to violate against the rights of others. Opponents to shareholder theory are thus recognizing the so called 'stakeholder theory' instead, where they profess that all the various stakeholders (actors who have a stake in the business, e.g. employees, customers, suppliers, society firm operates in etc.) deserve equal treatment and rights (Danielson *et al*., 2008; Schaefer, 2008). It can thus be claimed that the debate regarding shareholder theory has two sides which support either shareholder theory or stakeholder theory. It is argued, however, that stakeholder theory does not acknowledge the rights of future stakeholders but rather is a static theory for the particular

[1] Which will usually be to generate profits (Carson, 2016).

time-frame whereas shareholder theory takes both the current and the future perspective into consideration (Danielson *et al*., 2008). Stakeholder theory can thus lead to similar issues as those the proponents of stakeholder theory argues is the result of shareholder theory. It is therefore argued by some that the shareholder theory, when viewed correctly, leads to a better long-term result for not only shareholders, but for all the various stakeholders (Danielson *et al*., 2008).

Freeman *et al*. (2004), who is seen as the creator of stakeholder theory, argues that in some literature stakeholder theory has been misunderstood and not appropriately portrayed. He claims that stakeholder theory assumes that firms need to have values and moral obligations in order to bring the various stakeholders together to work towards a common goal (Freeman *et al*., 2004). Freeman *et al*. (2004) claim that shareholder theory should theoretically be able to separate business and ethics in order to behave rationally and maximize shareholder value, but argues that is not the case. It is further argued that shareholder theory is egocentric in that it doesn't consider its business environment. However, these critics are focusing their attention on a short-term value strategy rather than what Friedman (1984, 2007) proposes, which is that value maximization should be viewed as a long-term objective.

In a study regarding ethical standpoints and western ideals, Schaefer (2008) critiques shareholder theory in terms of corporate responsibility, as being an outlier regarding the ethics it adheres to. He argues that Friedman's views are that firms have no moral obligation to engage in corporate responsibility. Even though Friedman (2007) discusses that shareholders can engage the firm in corporate responsibility, he professes that they shall not do so if it is directly related to a loss of profits. It is also argued that shareholders may feel a temptation not to engage in corporate responsibility, since this diminishes their own income (Schaefer, 2008). Schaefer (2008) furthermore argues against Friedman (1962) in that Friedman is overly concerned with the corporate executive rather than the shareholders. Schaefer (2008) argues that if the shareholder theory claims that shareholders are the de facto leaders of the firm, they should also direct their executives to engage in corporate responsible practice. Schaefer (2008) concludes by arguing that shareholder theory, and in particular Friedman's (1962) interpretation, is incompatible with a wide array of western-held theories of moral obligations.

What can be found in previous literature is that the major critique against shareholder theory is that it lacks ethical standpoints and that it can encourage managers to act in a way that maximizes shareholder value only in the short-term. However, this does not accurately portray shareholder theory's actual definition.

Opponents of shareholder theory argue that stakeholder theory takes a more ethical position as it supports benefits to all relevant stakeholders of a firm, however, the proficiency of stakeholder theory has been widely criticized. Danielson *et al*. (2008) argue that the stakeholder theory posits that firms are forced to allocate some of their profits to other stakeholders and it has been found in previous studies that some of the methods of allocation have stifled long-term innovation and benefitted the stakeholder only short-term. Danielson *et al*. (2008) argue that in some industries where unions have been strong, employees have been able to receive salaries above and beyond their marginal productivity. This has led to some short-run benefits for the employees, but has led to stifled innovation, lower profits, lower investments and in some cases bankruptcy which has led to unemployment and increased societal costs (Danielson *et al*., 2008). Proponents of shareholder theory thus argue that for the long-term success of stakeholders, the shareholder theory is more appropriate since it is concerned with long-term profitability leading to more investments, innovations, and overall societal benefits (Jensen, 2002). It has been argued that stakeholder theory suffers from some other major shortcomings, among others, its argued that its confusing and unclear what stakeholder theory is and contributes with (Jensen, 2002; Loderer *et al*., 2010; Sundaram & Inkpen, 2004). It is found that it has some benefits, in that it takes the wider societal impacts into consideration, but previous literature finds that shareholder theory, which allows the firm to focus on one goal, gives the most success for society as a whole (Jensen, 2002).

Jensen (2002) argues that stakeholder theory in fact is crucially flawed in that it has no regard for a single-valued goal for a firm to follow, it lacks details on trade-offs between various stakeholders, and it is unclear who the stakeholders are. Moreover, Jensen (2002) argues that stakeholder theory best serves the firms' managers because it allows managers to follow any objective they choose indicating that managers could e.g. follow an objective of being environmentally friendly, push down prices, increase salaries above the marginal productivity, increase costs etc. Since the firm has no clear objective, other than to please various stakeholders, this handicaps the firm since a competing firm which focuses on value maximization will outcompete it (Jensen, 2002). Jensen (2002) further argues that value maximization removes any confusion regarding firm objectives and that it is the best option for society in the long-run. There is over 200 years of research in economics and finance that indicate that when all firms in an economy maximize total firm value, social welfare is maximized (Jensen, 2002).

Another important matter that critics argue is that shareholder theory suggests that shareholders are more important than any other stakeholder in a firm (Freeman *et al*., 2004; Jensen, 2002; Tse, 2011). Jensen (2002) argues that this is a flawed and highly unproductive hypothesis. And argues that there is no real reason to think of that particular trade-off as an issue. Rather the issue should be *"what firm behavior will result in the least social waste – or equivalently, what behavior will get the most out of society's limited resources"* (Jensen, 2002, pp. 239–240). Tse (2011) also found that value maximization as the main objective is most beneficial for society in the long-run. He argues that although the theory has taken some criticism after recent financial crises, it is not the theory itself at fault, but rather the individual and anecdotal cases. In sum, it is argued that the shareholder and stakeholder theories are in direct conflict with each other. Whilst some argue that the stakeholder theory provides a more comprehensive, moral theory as well as managerial strategy (Donaldson & Preston, 1995) others argue that it is fundamentally flawed and does not provide anything new in terms of organizational behavior (Donaldson & Preston, 1995; Jensen, 2002; Sundaram & Inkpen, 2004; Tse, 2011). It is argued that shareholder theory provides the most long-term benefits to society as well as to business. Focusing on one objective, value maximization, gives firms guidelines and frames into which to conduct their business. Furthermore it is argued that by acknowledging shareholder theory and investing in corporate responsibility provides the firm with benefits (Husted & De Jesus Salazar, 2006) which is in unison with CSV and Porter and Kramer (2006, 2011). To further contradict the opponents of shareholder theory, Jensen (2002) states that:

> *"Value maximization is not a vision or a strategy or even a purpose, it is the scorecard for the organization. We must give people enough structure to understand what maximizing value means so that they can be guided by it and therefore have a chance to actually achieve it"* (Jensen, 2002, p. 245).

What Jensen (2002) means is that stakeholder theory can be seen as a managerial strategy, however it is highly flawed. Shareholder theory is not a strategy but a way in which to measure if the firm is doing a good job. The importance of different stakeholder groups is crucial, and it needs to be explained to the various stakeholders how value maximization is in their best interest.

2.4 Conceptual Framework

In sum, this thesis seeks to evaluate the theories that have been presented and discussed in this chapter to understand how they relate to each other. The thesis emanates from shareholder theory in order to establish what kind of relationship exists between the Porter hypothesis and CSV and furthermore how shareholder theory impacts this relationship. In Figure 2 it is illustrated how the theories will be viewed and connected where the red circle indicates the particular relationship that the thesis evaluates. I.e. the red circle depicts the relationship between the Porter hypothesis and CSV as well as the impact of shareholder theory on the relationship.

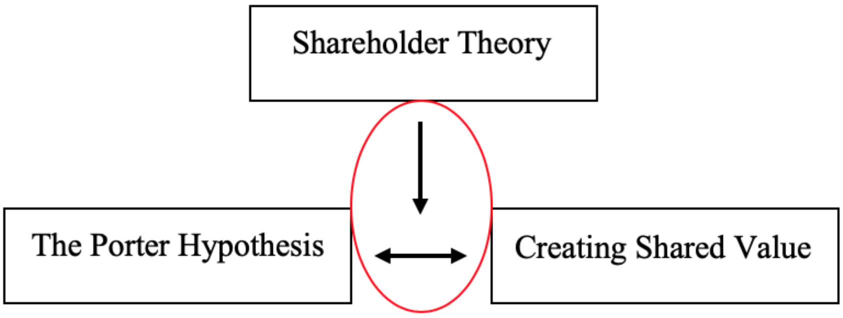

Figure 2. Model of conceptual framework.

3 Method

In this chapter a discussion is had regarding the research approach that is used in the thesis (3.1), the significance of the earlier literature (3.2), a presentation of the data gathering techniques and interview respondents (3.3), and lastly, the research quality and ethical considerations are elaborated upon (3.4 & 3.5).

3.1 Approach

For this thesis a qualitative research approach was deemed the most appropriate with the firm being the unit of analysis. The reasons for choosing a qualitative approach are that the theories to be analyzed are difficult to test with a quantitative method since some arbitrary measures must be chosen to represent firm profitability and the effect of environmental regulation – this has arguably led to measurement error in previous literature (Eli & Bui, 2001). Furthermore, this thesis aims to extend on the particular theory and to understand if there exists a relationship between the theories and how they correspond to shareholder theory and stakeholder theory. This is done by analyzing the phenomena of firms affected by the new EU directive on single-use plastics and the Swedish tax on plastic carrier-bags.

One of the most suitable approaches in order to gain new knowledge and understanding of firm choices is to conduct case studies. In accordance with Eisenhardt (1989) the case study method allows for a good foundation to build and develop theory and is also a good methodological tool when the theory is fairly new since the information that is gathered can offer rich and informative knowledge. It is argued by (Yin, 1994) that case study is preferable when analyzing "how" or "why" questions and it is also argued that the case study method allows for dynamic observations present within single settings (Eisenhardt, 1989). Considering the applicable theories are still debated (Ambec *et al.*, 2013) and this thesis offers a new perspective of the theories, as well as that previous literature finds fault with quantitative analysis (Eli & Bui, 2001; Ramanathan *et al.*, 2017) the case study method was the most appropriate.

The thesis pursued a deductive logic which Hyde (2002) argues is a process applicable for theory testing which allows the researcher to analyze whether certain theories are applicable in particular circumstances, which this thesis seeks to do through case studies. It has furthermore been argued that by using case studies in combination with deductive reasoning the researcher has the possibility to test whether the chosen theory is applicable in the particular case and if it is applicable the researcher can add to the empirical and/or theoretical research. If it is not applicable, the researcher has the possibility to refine the theory (Hyde, 2000). This allows the thesis to analyze the theories through case studies in order to answer the research questions and to offer a refinement of the particular theories being analyzed.

It is established by Eisenhardt (1989) that selecting the particular case studies can be executed in different ways. The chosen cases can be chosen for statistical purposes or they could also be chosen as part of theoretical sampling which implies that the chosen cases are chosen for a particular reason to allow the research to showcase the relevant facts (Eisenhardt, 1989). Since this thesis has particular environmental regulations underlying the investigation it was necessary to find firms affected by these particular regulations (see Table 1). Furthermore, the interviewees were chosen based on their knowledge within the firm rather than at random (see Table 2). Since this thesis extends on current theory, theoretical sampling was considered appropriate and by having a thorough understanding of the particular firm and case beforehand allowed this research to be conducted in an order relevant for extending the theory. The case study includes semi-structured interviews with key persons in the business as well as publicly available information such as sustainability reports.

3.2 Earlier Literature

An extensive search of relevant literature was conducted in order to establish the previous findings and general viewpoints of the different theories. It is argued that the importance of conducting a literature review is to establish what is already known about the particular subject or theory, what some common held opinions are, who are the prominent researchers and what critique exists (Bell *et al*., 2018). To this end the literature was found through searches using Google Scholar and various online databases giving access to several different journals. Some keywords that were used in the search were: The Porter hypothesis, creating shared value, shareholder theory, stockholder theory, Milton Friedman, Michael Porter, Porter hypothesis critique, environmental regulation, and stakeholder theory. The various articles and scholarly works that have been referenced emanate from various time-periods during the Porter hypothesis' existence and special care has been taken to make sure the work is of relevance and importance in order for this thesis to contribute to the literature. Apart from using search engines to find previous literature, it has also been found by looking at what works have been frequently referred to in the previous literature.

3.3 Data Collection and Analysis

The data was collected from several firms in various industries and various sizes where all were dealing with some kind of single-use-plastics in their products or processes. The actual product or process itself is of little importance as long as it is affected by the EU directive and/or the plastic carrier-bag tax and therefore it was considered beneficial to analyze firms of different sizes and in different industries. Any firm dealing with single-use-plastics or plastic carrier-bags is affected by the regulations and therefore it was not deemed necessary to limit the data collection to one particular industry or size of firm. The benefit to being a large firm, however, can be that more capital may help in complying with the new regulations more rapidly.

In order to find relevant case studies, the website www.allabolag.se was used with various search criteria, such as industry, turnover, location etc. Also generally known businesses using single-use-plastics, such as fast-food restaurants, were approached. The businesses that were considered appropriate were put into a list and then systematically contacted, see Table 1 below. Initially local firms were targeted but because of a lack of interest and responses a larger area was necessary. Because of the larger geographical scope of the different firms, different data-collection techniques were used. Furthermore, due to the coronavirus pandemic, which was prevalent throughout this research, three of the five cases could not meet in person. If possible, face-to-face interviews were conducted, which was the case for two of the cases (A and C). Another two cases were interviewed over telephone (B and E) and one case only had time to respond via email (case D). Although the data provided by the respondent for case D was not as substantial and in-depth as the other four cases, it provided information which was helpful in order to answer the research questions and therefore it was decided to use the data. Arguably the other interviews, face-to-face and telephone, were equal in quality of information and depth since the approach of interviewing was identical. For case C both observation of the facility and a face-to-face interview was conducted, and that case is perhaps the best in terms of quality and depth of the information.

In the initial contact it was made sure that the firm was a suitable candidate by inquiring about their use of single-use-plastics. After these conversations, it was decided to use the five cases seen in Table 1 below. All of the cases match the specified criteria of using single-use-plastics in their business and in the Table it is noted various factors to see potential differences between the firms in terms of complying with the new regulation.

Table 1. Description of Cases

Case	**Established**	**Turnover (SEK)**	**Employees (Nr)**	**Industry**	**Clientele**	**Regulation**	**Primary data source**
A	1968	Ca 3 billion	2842	Restaurant/fast-food	Consumer	EU Single-use plastics directive	Face-to-face interview.
B	1966	Ca 200 million	80	Plastic packaging producer	Businesses	Indirectly affected by all plastic regulation	Telephone interview.
C	1931	Ca 20 million	4	Plastic bag producer	Businesses	Swedish tax on plastic carrier bags	Face-to-face interview and observation of operations.
D	1994	N/A. 138 franchises.	N/A because of franchises.	Restaurant/fast-food	Consumer	EU Single-use plastics directive	Short interview per email.
E	1986	Ca 84 million	66	Restaurant/fast-food	Both consumers and businesses	EU Single-use plastics directive	Telephone interview.

Interviews were held with persons with knowledge of the firms' process of complying with regulations as well as knowledge about the firms' products and services. As can be seen in Table 2, these persons were sustainability chiefs, business owners, or other persons with good knowledge of the firms' work with sustainability. Since this thesis follows a case study method, other kinds of data, such as website information, sustainability reports, annual reports and other publicly available information was also collected and furthermore were PowerPoint presentations and other non-public materials given out by some of the firms.

Table 2. List of Interviewees

Case	**Position**	**Date of interview**
A	Project leader for environmental regulation issues	March 10th 2020
B	CEO and owner	March 20th 2020
C	CEO and owner	March 17th 2020
D	Head of product and sustainability	April 14th 2020
E	Responsible for packaging, environmental and marketing issues	April 3rd 2020

The interviews were conducted in Swedish and each interview lasted between one to two hours (with the exception of case D) and are the main source of data for this thesis. Case D did not have time for an interview face-to-face or per telephone, but agreed to give some short answers to questions via email. The interviews contained open-ended questions, which were sent in advance to each interviewee to allow the interviewees much room to answer and describe their answers in detail (see Appendix 1 and 2). This was done in order to gather a wide understanding of each case as well as to allow conclusions to be derived. Furthermore, the interview technique was semi-structured to allow questions outside of the initial scope to be asked and the interviews turned more into discussions rather than a question and answer scenario. The questions that were asked were prepared to be open-ended and to allow for vast discussion in regards to the firms' work in terms of complying with the regulation as well as the eventual performance.

The interviewees agreed for the discussions to be recorded and it was later transcribed and sent to the interviewees to allow for any mistakes to be remedied. When the transcriptions were deemed accurate they were used for analysis. To analyze the various cases all data was initially gathered and subsequently reduced in accordance with Robson (2002). The reduction was done by abstracting all relevant data from transcriptions and other materials and separating this from their raw form. The remaining data was then scanned repeatedly throughout the analysis stage to make sure no important data was overlooked. After this initial data abstraction, the various data was read and analyzed and important segments were and subsequently summarized in a new document. The next stage was to observe patterns and themes between the different cases and to connect these to each other as well as to 'cluster' together the various information which was in unison (Robson, 2002). The key data has been summarized in Table 3 in the findings chapter under certain criteria.

3.4 Research Quality

Robson (2002) argues that qualitative research differs from quantitative in terms of the trustworthiness of the study. For this qualitative thesis, it was chosen to describe the quality of the research by using the terms validity, reliability, and generalizability.

In terms of validity, Robson (2002) argues that there are several different strategies, processes, and measures a qualitative researcher can use. In this regard, all interviews were audio-recorded and later transcribed in order to generate an accurate portrayal and description of the data. Riege (2003) discusses the importance of using information from various data sources. Therefore, several sources were used such as interviews, publicly available information (annual- and sustainability reports), and non-public information such as presentation materials. By using several data sources, data triangulation was accomplished. Finally to confirm the validity of the data, member checking was used in accordance to Riege (2003) to allow interviewees to look over the transcriptions and make changes if anything was supposedly inaccurate.

The reliability of the thesis has been established by being careful with interpretations of data as well as being honest with its portrayal and avoiding biases by using peer reviews. Furthermore, it has been argued that explaining the theories fully without bias is a prerequisite for reliable research, as is recording observations and actions concretely (Riege, 2003). Thus, the theories have been explicitly presented in the theory chapters and the empirical findings have been recorded by audio-recording interviews. Reliability has moreover been accomplished by allowing for member checking and by viewing the data in different lights and discussing various implications in the discussion chapter.

To create generalizability, Robson (2002) suggests enabling the terms internal-, and external generalizability. Internal refers to generalizability of this thesis' conclusions, external refers to generalizability outside of this thesis (Robson, 2002). In this regard, the thesis has chosen to case study relevant firms and interview people with knowledge of the firms' work in regards to environmental regulations. Therefore, the cases represent accurately the issue of environmental regulations on firm performance and both internal and external generalizability is verified. A potential limitation in terms of generalizability is however that only five cases where studied. This may compromise the external generalizability in terms of empirical findings, but the theoretical developments that cultivates can certainly be applicable to a wider extent.

3.5 Ethical Considerations

When performing a study of this nature certain ethical issues may arise. Robson (2002) argues that performing studies with people has some ethical implications that should be avoided. As such, this study has made certain that all interviewees are aware of the research project and what they are responding to. The case studies and interviewees have also been offered to be kept anonymous since some information that has been reported contains sensitive information regarding processes and products as well as information that is for internal use. Any information that has been deemed sensitive, such as the name of customers and suppliers, has not been reported on in the thesis. The thesis also discusses some sensitive information in regards to new laws. It has therefore been made clear that the interviewer has a neutral position in regards to the law, irrespective of how it affects the firms. All data generated from the case studies have been kept confidential and the conclusions that have been drawn on the data have been drawn in full respect of the data, no adaption to the data has been made in order to fit this particular study.

4 Findings

The findings from the case studies were conclusive and gave important insights into the respective industries and how being shareholder- or stakeholder-centric affects the outcome of complying with regulations. The findings are summarized in Table 3 and described in detail below. The detailed findings have been structured so that the impact of the regulation (4.1) is presented for each case before moving on to the challenges that faced the cases in terms of compliance (4.2), and consequently how the cases alleviated the challenges and what the outcomes were (4.3).

4.1 Impact of Regulations

The different cases were affected by different regulations and in different ways. Cases A, D and E were affected by the EU directive on single-use plastics. These cases were all in the restaurant/fast-food industry and were therefore affected in a similar manner. Case A was affected by the directive because of several items in which they serve their food. These items were plastic straws, plastic cutlery, a plastic salad bowl, certain parts of their drink cup, the lid of the drink cup, coffee cup and lid of the coffee cup, and the plastic holder for balloons. Case D was affected in a similar way but did not have as many single-use plastic items and was affected to a slightly smaller degree. However, they did have plastic straws that were affected by the regulation and needed to be substituted. Both cases A and D were stakeholder-centric companies and started working on removing single-use plastics from their products before the EU directive was introduced or in similar time as to when it was first discussed. They were both therefore early with eliminating and substituting some of the single-use plastics that they both used. The respondent for case A summarized the company's stakeholder-centricity by stating that:

> *"[Case A] is a very value-driven and purposeful brand"* (Case A).

They work tirelessly to create a better experience for all various stakeholders that they are involved with, including work with environmental challenges. The respondent for case D stated that:

> *"We were out in good time and wanted to make these changes for a long time, so we had already innovated a lot throughout the years"* (Case D).

The statement indicates that like case A, it too was concerned for various stakeholders instead of pure profit generation and the respondent's general reaction to the directive was positive compared with the other respondents who all were critical.

Case E, although in the restaurant/fast-food industry as cases A and D, had not embraced the directive in the same manner. It was not a value-driven company such as the aforementioned cases and was more apprehensive with its financial results than other stakeholder issues. It supplied food to consumers but also to businesses in inner-city Stockholm which was its main target group. It was affected in a similar manner as cases A and D in that some products, such as plastic straws, cutlery, food bowls etc, needed to be substituted or adapted. It had however not yet made that many changes to its items and was instead waiting for the EU directive to become Swedish law which it hoped would be clearer than the directive. The respondent for case E also admitted that the firm was affected by the general trends regarding plastic items and that some of its clients had questioned its use of plastic bowls for its food as well as the use of plastic cutlery. Case E was, however, working carefully with what items it used to put its food in and regularly changed and updated the different packaging. The reason it did not want to change anything yet was because of poor range of substitute products for its food items. The respondent felt that the most important part is that its food quality is not worsened from any other type of packaging product and that so far there was nothing that could fully compete with a plastic bowl. Furthermore, the respondent stated that:

> *"What we are seeing is that progress is being made and a lot of things are happening on the material side of things…"* (Case E).

He was therefore certain that better packaging products would be available soon and that the firm rather waited than to change to something that decreased the quality of its food products. Case B was not directly affected by any environmental regulation in regards to the products it created, but the respondent did find that the firm was indirectly affected to a high extent in regards to that its customers were affected by various regulations on plastics and therefore it needed to change certain areas in its products and operations. Among other things it created plastic products to suppliers of Nordic supermarkets and since some goods that are sold in supermarkets would be affected by different regulations case B also had to adapt. Furthermore, the respondent found that, like case E, it was affected by the different trends in plastic production and that people were ill-informed about plastic products and the benefits they provide. Many of its customers wanted to have more sustainable materials in the packaging products they ordered but at the same time they did not want to lower the quality and characteristics of the product, which created an issue. The respondent for case B stated that:

> *"What we are witnessing is that if we want to continue to be relevant in this industry we can't simply be passive and adapt to customer wants, we also have to stay informed about current issues and solutions and work proactively to supply these"* (Case B).

Case B was furthermore affected by its big clients creating their own sustainability and carbon neutrality goals. The respondent found that when large corporations, which it supplied to, came out with large-scale plans to eliminate their carbon footprint or eliminate the use of new plastic materials, it must quickly adapt and work proactively to offer new solutions without compromising quality. He stated that:

> *"It has become much more complicated to sell our products"* (Case B).

Case C was affected by the Swedish tax on plastic carrier-bags. It had been in the business for many years and although it had lowered the number of plastic carrier-bags it produced and sold, because of a decreased market demand, it was still a vital part of the business and its revenue-stream. The respondent for case C found that it was likely that the tax on carrier-bags, which was quite substantial in relation to the price of plastic-carrier bags at the time, would decrease the demand for carrier-bags and that its business could be made obsolete. Furthermore, the respondent was in unison with cases B and E regarding the trend in plastics and the consequences it had for companies working in the industry as well as for the environment as a whole. He stated that:

> *"Plastic as a material is getting a worse reputation because this one product has been singled out as bad"* (Case C).

However, all respondents claimed that once plastic has been recycled at least once, it is carbon-neutral. Furthermore, the respondent of case C was negative towards the tax since he argued that it was a form of a symbolic political decision instead of an environmental regulation that would have any substantial effect for the environment. This was further argued by the respondents for cases A, B, and E who argued that both the EU directive and the Swedish tax on carrier-bags were poorly thought through because they did not offer any alternative material solutions that were ‘better’ than plastic which can in fact be recycled.

4.2 Challenges

It was clear that each case faced a different set of challenges. Cases A and D were both stakeholder-oriented companies in that their focus lied, not only in producing financial results, but also by reducing their carbon footprint, being fair towards customer, employees, and suppliers, and to work in the local area to support growth and prosperity. The challenge for them lay in substituting their use of single-use plastics in order to become compliant with the regulation and decrease their use of fossil-based products. The respondent for case A was adamant that its primary focus was on the taste of its food and the experience of eating it and therefore, as for case E, the challenge was to find items that would not decrease the quality of the food or experience in any way. Case D on the other hand had already substituted many of the products that were affected by the EU directive and did not specifically mention the criteria for quality and experience of its food in the way such as cases A and E.

Case E faced the challenge of substituting some of its plastic items but also finding good enough substitutes that did not decrease the quality or durability of its food. It had various types of food including salads and warm meals, which needed to be packaged in different ways to produce the best quality and flavor as well as deliver certain characteristics such as being microwave friendly. It had tried certain different alternatives in the past but had not found anything that could be compared with the plastic packaging it currently used. At the same time, case E was a smaller company than both A and D, and had more limited resources. The chosen packaging had to be not only of a certain quality and durability but also financially possible. The main challenges for case E were thus to substitute its single-use plastics with alternatives that were of sufficient quality, and simultaneously remain a profitable business.

Case B faced substantial challenges in the way it operated and created products for customers. Although it was not directly affected by any regulation, some of its clients were and therefore case B needed to be able to understand how to operate in the industry going forward. The main challenges were that plastic as a material was getting singled out as a poor item and was therefore less demanded by ill-informed customers. It thus had become harder to sell plastic products in that type of market. Furthermore, clients that needed to lower their use of plastic material were turning to recycled plastics instead and created a surge in demand. The respondent for case B discussed how different types of recycled plastics had different qualities as well. There was post-industrial recycled plastics (**PIR**) and post-consumer recycled plastics (**PCR**). PIR plastics could be traced to their original use and thus made it a valuable and almost new material. But with PCR it could not be traced to its origin and was usually poorly sorted in sorting stations and could thus be of very poor quality. Whilst some products that case B created could use PCR, most products could not since they needed to have certain qualities and characteristics. Therefore, a challenge for case B was to be able to keep supplying the same quality on the products it created for its clients, but simultaneously using more recycled material or less new material. The respondent stated that:

> *"I think the primary reason that we can't create products with more recycled material is that there is a shortage of good quality recycled plastics. There is also a gap between what customers are willing to accept, and what we can offer them"* (Case B).

Furthermore, the challenge for case B was to remain profitable or to increase profitability in the new environment where plastic was regarded as bad.

Case C was heavily affected by the Swedish tax on plastic carrier-bags since this was one of its main revenue-streams. The tax would likely decrease demand substantially because of increasing prices for the end-customer buying the bags by around 70-100%. The respondent for case C argued that the demand for plastic carrier-bags had been decreasing over the years and that its own production had also decreased, but that this tax would likely drive it down further. The respondent was critical of the tax not only from a profitability standpoint but also from an environmental perspective arguing that the plastic carrier-bag in Sweden was in fact used many times over and eventually was used to hold garbage in most households. It was thus a good product and the alternatives were paper carrier-bags which suffered from various other issues and did not have the same characteristics, or cheap plastic garbage bags imported from Asia. He was thus very skeptical that the tax would bring about any kind of environmental benefit. The challenges for case C was that demand would likely decrease and its revenue along with it. The respondent was moreover critical that the tax did not differ between new plastic, recycled plastic, or plastic made from plants. It is possible to make plastic from corn e.g. but the tax on plastic carrier-bags does not differentiate between these at all.

4.3 Alleviating Challenges and their Outcomes

The different firms had different ways of dealing with the challenges in order to overcome them and consequently comply with the particular regulation. The stakeholder-centric companies, cases A and D, had worked a lot before the EU directive was introduced to eliminate single-use plastics in their respective businesses. They did however have some items left which needed to be removed or substituted. Cases B, C, and E were more prone to make changes when they were forced to. Case E e.g. was waiting for the EU directive to become Swedish law before making any major adjustments because it did not want to compromise the quality and durability of its food before it had to. Likewise, case B made dynamic adjustments to its products and processes when required to. For case B it was not any particular regulation that forced it to change, but rather what its clients wanted and needed in their products. Case C didn't need to remove any particular product, but needed to create higher profitability and increase revenue in other ways since the demand for plastic carrier-bags likely would decrease further.

For case A, its work with removing single-use plastics started in 2018/19. It decided to reduce the amount of plastic in its items and to use plant-based alternatives instead. In 2018 it already had 82% plant-based items, but after a major oversight of their single-use plastics usage, it increased it to 92% plant-based items. The biggest changes were to not only substitute certain items but also make them less accessible for customers and in that way both substitutes away from plastic as well as reduce the number of substitute items used. Since the substitute item, which was e.g. made of paper, was more expensive to buy, the increased cost went straight out of its profit margin. To make the items less accessible was thus a strategy to try and mitigate the increased cost of the substitute item. The products that it did this with was e.g. plastic straws and plastic cup lids which it did not hand out along with a customer's meal, but which instead was only given out if the customer demanded it or if other special circumstances deemed it necessary. In its drive-through service it still had to give out straws and cup lids, but now made from other materials. Its drive-through service was around 50% of its guests and therefore it still handed out a lot of the items. The respondent mentioned that this was also a question of educating the staff in the restaurants to not hand out the items for sitting customers and to make the staff understand the importance of the firm's work and vision. Furthermore, it still had some plastic items which had not yet been replaced. E.g. did it make a 'luxury milkshake' which was contained in a plastic cup with a plastic spoon. This was an item that it was working to replace. But for case A quality of the food and the experience of eating the food was their utmost priority and therefore it did not want to rush into any type of substitute item without it being properly tested and evaluated.

To find the substitute items it worked closely with a few suppliers who helped it to establish its needs and to find suitable substitute products. This was especially helpful and the respondent thought it was due to the company being a well-known brand and being known for its work with environmental issues. She stated that:

> *"It's a big advantage that [case A] works a lot with sustainability and is well-known for it. It makes a lot of suppliers come to us and present new items and solutions that are better suited from a sustainability point of view"* (Case A).

The new products could still contain plastic, but case A worked with its suppliers to lower the amount of plastics or to find other ways to lower the content of fossil-based materials. Its customers were generally positive towards changes that were made, and although the respondent admitted there was a learning curve to any big change, such as no cup lid to your cup, the customers were generally pleased that case A worked with sustainability in mind. Case A has thus not seen any decrease in its customer base and revenue, on the contrary it believed that its success lay in the fact that it was stakeholder-oriented. However, the higher costs generated by its substitute items increased its operational costs which were not mitigated enough to offset its loss of profits. The outcome for case A is thus a decreased profit.

Case D was fairly similar to A in that it was a stakeholder-oriented company which focused not purely on financial results but also to benefit other stakeholders. Case D started around five years ago to remove some single-use plastics in its restaurants and has found substitute items that it was pleased with. The respondent for case D mentioned that in some instances, however, costs have increased with the substitute item and that its general costs consequently have increased. Case D has not made any adjustments to its prices in order to mitigate some of the increased costs and it did not discuss reducing the use of some of the items in order to lower its overall costs. Its profit has therefore decreased as an outcome of reducing single-use plastics.

For case E the challenge was not only to substitute some of its single-use plastics, but also to remain profitable with a more constrained budget than cases A and D. Case E had therefore not substituted any major item but was waiting for the EU directive to become Swedish law. To alleviate the challenges, it had a sustainability consultant who helped it find good materials for its various packaging needs and furthermore helped with a marketing perspective to meet its main clients' demands. Since its main clients were inner-city Stockholm corporations, it had to be able to meet their demands for the products it delivered. It had found that some of these corporations are themselves concerned with environmental issues and that they therefore may not purchase food if it is contained in a plastic container. However, it found that people overall were ill-informed regarding plastics and that the current trends had given it a bad reputation. The respondent for case E argued that plastic was in fact a good material in terms of making food products taste the way they should, stay well-contained, and keep its quality over longer periods of time.

The way the consultant worked to source new materials that could benefit case E was to stay well-informed about the various packaging materials that existed on the market as well as to stay updated to any new materials that were being developed. He had found several options that case E has tested but so far it has not switched out the plastic container. Another reason it hadn't yet changed materials was its budget constraint. Case E was like cases A and D in the restaurant/fast-food industry, but one main difference was the size of the business. Case A was one of the largest fast-food chains in Sweden and case D was one of the largest coffeeshops with franchises all around Sweden and Scandinavia. Case E was a smaller restaurant with fewer resources and another large difference was how it worked with corporate clients and delivered food to offices around Stockholm. It therefore had to be able to adapt to the demands of these clients as well as remain profitable over the long term but with a constrained budget. When it becomes clear what the Swedish law will be case E will swap out its single-use plastic products to substitute materials and would likely increase the cost of its products to the end customer. In that way it would mitigate the higher operational costs with a higher revenue-stream, given everything else remaining the same. The respondent has previously found that case E's main clients are not so price sensitive and that small changes in price has not deterred any clients from buying its products. They therefore forecast that with higher operational costs and consequently higher prices to customers, as well as a marketing strategy towards sustainability sensitive corporate clients, case E's profit in the long-term increases.

Case B faced challenges in terms of how its customers perceived its products and how people overall viewed plastic as a bad material. This made it more difficult to sell its products and to stay relevant in the marketplace. Furthermore, large clients wanted more products made from sustainable materials but they did not want to compromise on quality and characteristics. Case B worked to overcome these challenges by staying well informed of the changing landscape and educating and helping its clients to understand what can be done in order to create products that live up to their criteria as well as being more sustainable. One way to do this was to use recycled materials and depending on the end use of the item it could be made with PIR or PCR where PIR is of higher quality. Another way it adapted was by using less material in its products. A plastic clingfilm e.g. could be thinner than previously and in that way case B was able to use less material and create a cheaper and more environmentally friendly product.

The most beneficial solution for case B to alleviate some of its challenges has been to enable its own recycling facility. In this it was able to recycle its own factory waste to create new goods with near-new quality. The respondent mentioned that there are some industries or products where it is not allowed to use recycled materials, such as for pharmaceuticals and food-items, but for those items where it can, it used around 40% recycled material and for some products it used up towards 95%. Case B tried to work closely with clients to increase the amount of recycled plastic in their products but for some it was not possible to compromise the characteristics. Furthermore, case B did not purchase plastic waste from outside sources in order to recycle it itself, but it did purchase already recycled materials which it used in its production. The difference is that it wanted to be able to trace and have knowledge over the materials that it recycles.

The respondent of case B explained that it is a very customer-driven company and is very adaptable to each clients' specific needs. It therefore did not have specific products that it sold but rather creates the products for special order to each individual customer. This has allowed the firm to suggest what type of materials the client should use and it is thus able to use recycled materials or plastics made from plants as well as fossil-based plastics materials. In terms of profitability, its various measures have resulted in a higher profitability over the long-term. The plastics that it is able to recycle and re-use, as well the demand for plant-based and recycled materials has helped it achieve increased profitability due to lower costs and higher revenue.

Case C overcame challenges to the plastic carrier-bag tax in different ways. All of its carrier bags were made with 100% recycled materials which it recycled itself in its own facility. Instead of purely purchasing new plastic materials it also purchased recycled plastics which was further processed in order to become usable in production. The recycling facility was invested in primarily because of an increased scrutiny of new plastic products as well as an increased demand from customers. This helped lower case C’s cost of goods substantially and led to a higher profit margin on the carrier-bag. However, it has suffered from the plastic carrier-bag itself being replaced by other items such as paper bags. This has decreased the demand for plastic carrier-bags and therefore decreased case C’s overall revenue. The respondent admitted that the demand for its plastic carrier-bags have likely fallen around 50-70%. To mitigate these losses of revenue it has actively worked to produce other goods to sell, primarily to industries where the profit margins are higher. These goods are within plastic packaging and film (e.g. clingfilm) and one of its largest clients was a Japanese company specializing in medical supplies. Not only did case C supply plastic products but it also made holders and other types of packaging that accompany the plastic films. By substituting its production from having a large part of their revenue and factory space taken up by plastic carrier-bags to instead being taken up by producing industrial products, it had increased its profit margins substantially.

The reason that case C has been adept at increasing its profitability during the time that the plastic carrier-bag has decreased in demand, and will likely decrease further because of the new tax, was according to the owner because it has been actively speaking with customers and suppliers and other industry members to establish what needs there are in the industry. Furthermore, the owners were two brothers who were both handy and built the firm’s various machines themselves. By doing this case C has been able to cut out the cost of investing in machines from outside sources and have instead built them in-house. The drawback that the respondent exclaimed was however that the second hand value was very low.

Case C has furthermore been successful in automizing a large part of its factory and many products that it produced for clients regularly were done completely autonomously. It has been able to shift production from plastic carrier-bags to industrial products which have a higher profit margin, and it also has its own recycling facility for its own plastic waste but also for plastic waste it purchased and used in its plastic carrier-bags.

Case C prognosed that the demand for plastic carrier-bags will decrease even further in the long term because of the new tax and one of the plans in the pipeline was to make the carrier-bags in different ways to circumvent the tax and keep producing and selling to mainly supermarkets. This could possibly be accomplished by making the bags thinner and purposely for storing garbage. Or they could make them thicker and make them into bags that are used over a longer period of time. However, the respondent believed this could be difficult to sell to customers since both of these products could be imported from Asia cheaply. Case C’s plan was to not stop producing plastic carrier-bags yet because the respondent believed there could be a short-term increase in demand for the bags. This phenomenon happens since companies want to build up a stockpile of plastic carrier-bags before the new tax sets in but also because small-time importers of plastic carrier-bags from outside of Sweden would arguably be hit hard by the tax.

This could drive some customers to case C and preferably it can keep some production of plastic carrier-bags. In the longer perspective the respondent sees that the carrier-bags are removed from production and instead production for industrial clients increases. The overall profits for case C have increased, and it subsequently foresaw both a short-term and a long-term additional profit increase.

4.4 Summary of Findings

As can be seen in the preceding parts of this chapter the findings show that the different cases were affected and challenged by the different regulations in various ways. In Table 3 below, the key insights from these findings have been summarized and will be shortly presented here.

Case A, D, and E were affected by the new EU directive since they use some of the plastic products that are being banned when the directive becomes law. Case B, was not directly affected by any regulation but rather indirectly by all changing trends regarding plastic products. Case C was affected by the Swedish tax on plastic carrier-bags which makes the bags more expensive for consumers and decreased demand.

For case A, D, and E the challenge was to remove the banned plastic items from their businesses and they could remove them completely or substitute them for other materials. Case B was challenged by the changing trends in the market and that more clients were requesting recycled materials but with the same quality as new material which is not possible. It, therefore, needed to find solutions to make both their clients satisfied and remain profitable. For case C the main challenge was that demand decreased for their plastic carrier bags in the long term and will likely continue to decrease. It therefore needed to find some way to remain profitable with or without plastic carrier-bag production.

Case A and D were early to substitute several single-use plastic items and worked closely with suppliers to find new and sustainable materials. For case A it was important that food quality was not reduced. Case E substituted some items but not all and were waiting for the EU directive to become Swedish law before changing anything else. Additionally, the higher cost of substitute goods would likely be passed on to clients in the form of higher prices for their food when substitution does take place. Case B worked closely with clients and informed them on the different options they have in terms of using recycled materials but keeping some fundamental characteristics of the product. It also had its own recycling facility where it recycles its own waste for use in other products. Case C alleviated challenges mainly in two ways, by using its own recycling facility and using 100% recycled materials in their plastic carrier-bags, and by focusing on creating industrial products and therefore moving to a different market segment.

The outcome for case A and D was a decreased profitability whilst the other three cases experience increased profitability (see Table 3 below). In the discussion chapter this will be analyzed further.

Table 3. Cases summarized

Case	Orientation	Impact of regulation	Challenges	Alleviating challenges	Outcome
A	Stakeholder-centric	Affected by the new EU directive since it uses some of the plastic products that are being banned.	Remove or substitute the products that were being banned. These included among others plastic straws, food bowls, plastic cutlery, some cups with plastic parts etc.	Being a stakeholder-oriented company, it early on started working on substituting the products that would become banned and worked with suppliers to develop new items that suited its restaurants. The costs increased for the new items resulting in higher costs for the business even though new measures were put in place to reduce the use of some of the substitute products.	Although they decreased the use of the substitute products, such as straws, the substitute products resulted in higher costs than before and therefore **decreased** profits.
B	Shareholder-centric	Not directly affected by any particular regulation, but many of its clients was affected and it therefore had to adjust its business.	Changing trends regarding sustainability gives plastic a bad reputation. Furthermore, clients ask for more recycled packaging but with the same quality as new raw material.	Worked closely with clients to create an individualized product for and pass on additional costs to clients. It furthermore has its own plastic recycling plant which creates recycled material for it to use in its products.	Higher costs were passed on to customers as well as having its own recycling plant **increased** profits.
C	Shareholder-centric	Affected by the Swedish tax on plastic carrier bags which makes plastic carrier bags more expensive and less in demand.	Demand decreased for plastic carrier bags in the long term and will likely continue to decrease. Furthermore, the profit margins on plastic carrier bags is small.	Used 100% recycled material in its carrier bags which was recycled in its own facility. It also purchased un-recycled waste material that it recycled and used in its carrier bags. However, its main method of alleviation was to change from only making plastic carrier bags to focusing more on other products to sell to industrial companies resulting in higher profit margins and result.	Changed core business from plastic bags to industrial plastic packaging as well as incorporated its own recycling facility and **increased** profits.
D	Stakeholder-centric	Affected by the new EU directive since it uses some of the plastic products that are being banned.	Remove or substitute the products that were being banned. These included among others plastic straws.	Started 5 years ago to replace single-use plastics products, which was before the new directive was introduced. It has worked alongside suppliers and customers to find new and good substitute products. It has not been able to mitigate the additional cost of these products yet.	Higher costs going un-mitigated resulting in **decreased** profits.
E	Shareholder-centric	Affected by the new EU directive since it uses some of the plastic products that are being banned.	Remove or substitute the products that were being banned. These included among others plastic straws, plastic cutlery, and certain food bowls.	Substituted some products but not all and are waiting for the EU directive to become Swedish law. It continues to use some plastics but believe that changing to a new material will be done shortly. It has had corporate customers asking about their abundance of plastic and it therefore believes that with a strong marketing strategy directed towards corporate clients who are themselves environmentally conscious, it will be able to increase its client base. The higher cost of substitute goods will likely be passed on to clients in the form of higher prices for their food.	Higher costs likely passed on to consumers as well as increased corporate client base and consequently **increased** profits.

5 Analysis and Discussion

This chapter begins with an analysis and discussion surrounding the empirical insights that this thesis has contributed with. The discussion regards how the cases have been affected and overcame challenges by regulations as well as how these insights relate to earlier literature and contribute to the wider business community (5.1). Secondly, it is discussed what theoretical developments have been made in this thesis and what they imply (5.2).

5.1 Empirical Insights

This thesis has studied five firms faced by environmental regulations that threaten their business either directly or indirectly. What was found from these case studies was that they were each affected in a different way and the firms had different ways of dealing with it. The findings further indicated that depending on if the firm was shareholder- or stakeholder-oriented it handled the threat of regulation in a way that either increased or decreased its profitability.

The first observation is that three cases turned the environmental regulation into a positive for their bottom line, whilst two cases did not. The cases which did not manage to turn the regulation into a benefit were the ones which openly stated their own mission and vision for being a stakeholder-oriented company (see table 3 above). Case A and D were both stakeholder-oriented companies in that they were not heavily focused on shareholder value maximization, but rather focus on all various stakeholders that are related to their firms. For case A, stakeholder well-being was in fact their corporate strategy and although their food was the top priority, sustainability issues and other societal factors were a second. This indicates that firms which do not fundamentally work to maximize shareholder value or increase profitability will not necessarily prosper when they are affected by environmental regulations (Jensen, 2002; Porter & van der Linde, 1995a, b). This is also the case for the other stakeholder firms. The reason for this according to Jensen (2002), is that they have too many different goals and by not being able to focus on one single goal they end up being mediocre in several which is in line with the cases in this study.

In the study three out of five cases (Cases B, C and E), achieved or projected increased profitability resulting from the environmental regulations. They were effective in different ways at innovating to other products, processes, or market segments and therefore they more than offset the cost of compliance. Case B was the only firm which was purely indirectly affected by plastic regulations and overcame this by working closely with clients, used less material, and used recycled or plant-based materials in its products. This resulted in lower costs since it recycled its own materials, as well as higher prices on its products because the recycled materials being used were in demand. Case C was affected by the Swedish tax on plastic carrier-bags and therefore decreased its operations with plastic carrier-bags and instead found other business opportunities were the profit margins were higher. Case C increased its business operations with industrial plastic production and increased its profitability substantially. This is arguably the biggest change that case C did and is according to Porter and van der Linde (1995b) an innovation which more than offset the cost of compliance with the regulation. Furthermore, case C continued to create plastic carrier-bags but with recycled materials from the waste of its other products sold to industry.

Case E was also a firm more focused on increasing profits and maximizing shareholder value as opposed to satisfying all the various stakeholders. However, it was the only case which was shareholder-centric and discussed marketing for its sustainable materials. This is arguably due to the fact that some of its corporate clients were stakeholder-centric firms and would not buy from it unless it used other materials to store the food in. Conversely, that may decrease the quality and durability of the food and the firm could possibly suffer by losing clients. The technique used by the firm to alleviate the challenges of the regulation was to plan to change to a more sustainable material when forced to, and to raise the price of its products. Thereby offsetting the increased cost of materials.

Regulations can benefit society but also benefits the firms' results and companies which are shareholder-centric will benefit society when an appropriate environmental regulation is introduced. With case A and D, the issue was that they were stakeholder-centric and did socially beneficial work voluntarily. The cost of this work was not offset by the revenue it generated. They were profitable firms, but could arguably be more profitable if they focused purely on increasing profitability and innovated only when regulations require it (Jensen, 2002). When faced by regulations they increased their costs and innovated, but did not manage to offset the cost of innovation. In a long-term perspective, however, it is plausible that the cost of plastic substitute products will decrease thanks to higher supply and demand and the firms may therefore become more profitable at a later date given *ceteris paribus* (all else unchanged). This is in line with that firms should only focus on maximizing their profits and shareholder value (Carson, 2016; Friedman, 1962, 2007)

Cases B, C, and E were shareholder-oriented companies. Case B was not directly threatened by the regulations, but its clients were. It therefore needed to be innovative in order to keep selling its products. It reduced the volume of material used in products and increased the use of recycled or plant-based materials which it could in some cases produce itself. The cost of innovation was mainly the recycling facility which has been more than offset and increased the firm's profitability and shareholder value. Case B therefore firstly agreed with the Porter hypothesis (Porter & van der Linde, 1995a, b), and then created shared value (Porter & Kramer, 2011) in the form of lower environmental impact, reduced material wastage, and increased profitability.

Case C was affected directly by the Swedish tax on plastic carrier-bags and therefore innovated in order to increase profitability. It reduced the volume of plastic carrier-bags it produced and sold and increased its business producing industrial plastic goods which allowed for higher profit margins. Simultaneously it recycled its plastic waste in its own recycling facility and produced plastic carrier-bags from 100% recycled materials. Thus, case C managed to innovate away from plastic carrier-bags to a different market segment which allowed it higher profit margins and consequently a higher profitability and shareholder value (Porter, 1991; Porter & van der Linde, 1995b) Case C confirms the Porter hypothesis (1995a) and creates shared value in the form of environmental benefits because of reduced plastic waste and increased recycling, as well as increased profitability.

Case E needed to substitute some of its single-use plastics items in which it serves food. The most important part for it was to not compromise the quality and durability of the food and thus it made no changes initially but chose to await the Swedish law to be formed from the EU directive. However, its hope was to find a sustainable solution which does not negatively affect its products and offset the cost of substitute material by raising its product prices. The respondent for case E admitted that it has price insensitive clients, but that they are sensitive to sustainability issues. The firm also wants to work on its vision outwards and have a targeted marketing campaign in order to increase its corporate clients' awareness of the brand and increase revenue. Case E has a good situation in which its clients are willing to pay more for other materials in its packaging. It can therefore increase prices to more than offset the cost of innovation which will allow it to increase shareholder value and profitability ceteris paribus (Jensen, 2002; Lanoie *et al*., 2008; Moon *et al*., 2011). Case E can thus innovate in a way which reduces its single-use plastics and increases its revenue through higher prices and marketing to clients which are ready to purchase its goods, given it changes its plastic materials. Thus, it creates shared value by reducing plastics and increasing profitability (Pfitzer *et al*., 2013).

5.2 Theoretical Development

Professor Michael Porter has together with colleagues created two elaborate and attractive theories which have been debated, perfected, and implemented since their inception and this thesis develops a model as a response to Porter's critics where the model not only answers the two research questions but also connects Porter's theories together and demonstrates how they are connected. The results in this thesis indicate that when firms are shareholder-centric they achieve an increased profitability when faced with environmental regulations, this is in line with, among others, Rassier and Earnhart (2015). Furthermore, the regulations force firms to act in certain ways thereby creating shared value in society (Li, 2011; Michelini & Fiorentino, 2012).

Below (Figure 3) it is discussed in-depth the relationship between the Porter hypothesis and CSV, in regards to the empirical findings, and it is also demonstrated the impact of shareholder theory on the relationship. The model is useful for future research avenues and below are the main arguments for the development of the model. It is important to note that the model is solely based on past theoretical disagreements and the empirical findings of this thesis.

Figure 3 is a cohesion of the Porter hypothesis and CSV under the precondition of shareholder theory. Simply put, based on the empirical findings and earlier studies, this thesis argues that CSV is the de facto consequence of achieving the Porter hypothesis - i.e. when strict regulations force firms to innovate to remain or increase profitability shared value is the result, given an overarching shareholder theory. This is clear in this thesis given the above analysis and discussion (5.1). The analysis clearly indicates that when firms are shareholder-centric they will be more profitable after complying with regulations than firms that are stakeholder-centric.

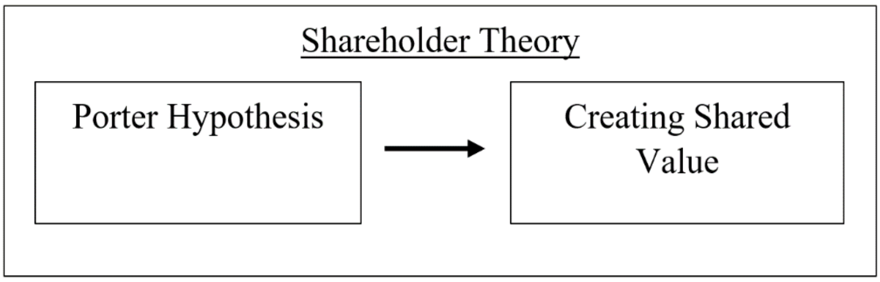

Figure 3. Towards a new model on the impact of environmental regulations on firm performance.

Consequently, the Porter hypothesis argues that when strict environmental regulations are imposed firms will innovate in order to remain profitable or to increase profitability (Porter & van der Linde, 1995a, 1995b). Further, Porter and van der Linde (1995a, b) argue that innovating will more than offset the cost of complying with the regulation and will therefore improve firm profitability in the long-run. This is further argued by, among others, Ambec *et al*. (2013), Eli and Bui (2001), and Xepapadeas and De Zeeuw (1999). CSV further postulates that value can be created and shared between various parties if firms find business opportunities that have societal benefits (Porter & Kramer, 2006, 2011). These business opportunities can e.g. be lowered resource use or changed use of resource, resulting in decreased long-term costs for firm as well as lowered environmental impact. From the analysis (5.1) it is found that firms which are shareholder-centric and comply with the environmental regulations both achieve increased profitability as well as achieve the desired environmental outcome of the regulation. Hence, shareholder-oriented firms faced by environmental regulations achieve increased profitability and leads to creating shared value.

This thesis argues that with shareholder theory, where firms have only one objective as compared with a plethora of possible objectives which stakeholder theory offers, firm behaviors and decisions become easy to anticipate since they will reflect the actions which maximizes value whilst simultaneously adhering to societies' laws, ethical issues, and engagement in a free, competitive market (Carson, 2016; Jensen, 2002). Thus, it becomes easy for regulators to introduce fair regulations since they can anticipate the actions of the firm when faced by the particular regulation (Mohr, 2002). Therefore, when a goal-oriented regulation is introduced a value maximizing firm will innovate (according to Porter and van der Linde's (1995b) definition of 'innovation'), and create shared value. It can therefore be argued that regulators have the potential of both solving societal issues as well as allow firms to maximize value and increase profitability.

This thesis' cohesion of the theories allows scholars, practitioners and regulators to understand the potential consequences of goal-oriented regulation on sustainability, firm profitability, and consequently the full economic effect. The new model (Figure 3) posits that with appropriate regulations in accordance with Porter and van der Linde's (1995b) definition, it will allow firms to both be good for society, and for shareholders - it is the decisive win-win situation that Porter has been arguing for. CSV alone can be difficult for firms to engender in its current state since firms themselves need to find business opportunities appropriate for development. This may be pushed up in favor of more conventional value generation (Hsiao & Chuang, 2016) and may not be given attention at all. With the linkage to the Porter hypothesis as well as the shareholder theory approach, the model argues that firms are instead forced to find business opportunities which can improve their profitability and which is subsequently good for society.

The thesis argues that firms do not directly need to consider sustainability in their business models, the regulations will push them to be sustainable as well as to maximize shareholder value. It is also argued that firms that have a sustainability outlook in their business will fall behind and be surpassed when faced by regulations since firms with purely value maximization will be sustainable indirectly and be able to focus solely on the profitability objective (Jensen, 2002). This is not to say that sustainable firms are less profitable overall than firms with value maximization objectives, but it does indicate that profitability in the face of regulation dwindles as compared to shareholder-centric firms. Society will consequently benefit to a large extent since all firms would be more or less pushed in a direction to indirectly act sustainably, but firms will also be rewarded by maximizing value simultaneously.

6 Conclusions

This chapter has three parts to it. Firstly, the theoretical implications are elaborated upon and the research questions are answered (6.1), secondly, the empirical implications are explained (6.2), and lastly the limitations of the study are presented and discussed and future research subjects are explored (6.3).

6.1 Theoretical Implications

This thesis had two research questions; how does the Porter hypothesis relate to creating shared value (CSV)? And how does shareholder theory and stakeholder theory impact this relationship? The answers to these two research questions, as well as its contribution to the debate on the theories, was presented by analyzing and illustrating that there is a clear relationship between the Porter hypothesis and CSV by developing a new model (Figure 3). It is clear from the empirical findings that there is a strong relationship between the Porter hypothesis and CSV and that, secondly, it is also evidential that shareholder theory has a positive effect on firm profitability while stakeholder theory has a negative effect on firm profitability.

What is clear in this study is that the firms which are shareholder-centric have indicated that innovations which take place as a result of strict environmental regulation have increased their shareholder value and profitability whilst the firms which are stakeholder-centric have proven the opposite. This signifies that the Porter hypothesis is correct given that the firm is shareholder-centric, and furthermore it shows that there is a *strong* relationship with CSV where both firm and society prosper.

This finding indicates that regulators have the power to not only impose regulations which benefit society, but to benefit business as well. The three cases which have a positive result show that strict environmental regulation incentivizes firms to innovate in order to increase profitability and will result in higher profitability and a compliance with the particular regulation. Given that the regulation proves effective in what its regulating, this gives a win-win situation and shows that regulators have vast power to control society and business in a positive way. If business is focused purely on value maximization it can be argued that regulators can easily anticipate the behaviors and decisions taken by firms and therefore be able to introduce regulations which will create shared value.

In summary the empirical findings suggest that firms faced with environmental regulation become more profitable after compliance if they are shareholder-centric and the result is that they create shared value, moreover meaning that there is a clear relationship between the Porter hypothesis and CSV.

6.2 Practical Implications

From the practical point of view, it can be suggested that firms could overcome challenges posed by environmental regulation in different ways where some increase profitability and some do not. The alleviation techniques observed in this thesis has been several, but the most common is to substitute affected products or processes with alternatives that are permitted. However, not all cases have been affected by the regulations in the same ways. The cases which produce plastic products have alleviated challenges differently than those selling the products. Nevertheless, all cases did substitute the products or process in one way or another. Either they used less material in creating the product, they used recycled materials from their own recycling facility, they purchased more expensive but non-fossil-based plastics, or they stopped creating the product completely and found other business opportunities. 60% of the firms increased their financial profitability when faced with the regulation. The reason they managed to increase profitability was because they focused on maximizing shareholder value and therefore chose alternatives to alleviate the challenges which were most financially rewarding.

The differences between the successful and the unsuccessful firms seem to be their business models where the successful firms were less concerned about stakeholders and more concerned with value maximization. This indicates that firms that focus on profitability and shareholder value maximization and facing environmental regulations innovates in a way which more than offsets the cost of complying with the regulation. When firms are stakeholder-oriented, offsetting the cost of compliance is not as important since they feel that their firms' missions are not to generate profits, but to be a good member of society.

The implications of this study also suggest that when faced by environmental regulations, shareholder-oriented firms provide win-win scenarios by both improving their financial performance and benefitting society as a whole. For practice this indicates that firms should be focused only on profitability and shareholder value maximization since this leads companies to achieve higher profitability as well as benefitting society as a whole. Firms do thus not need to be responsible for sustainable actions, regulations will make them sustainable indirectly. This does however involve the regulators being adept and able to manage these issues and questions arise if they are the right group to lead the way forward.

6.3 Limitations and Future Research

Although the findings of this thesis provide interesting results and has theoretical implications, it faces certain limitations which make the results non-generalizable empirically. Firstly, as a case study of only five firms, the findings cannot be empirically generalized. The results do however indicate that more studies should be undertaken specifically with shareholder-oriented firms. Another limitation is that only two industries were represented in the study, restaurant/fast-food and plastic packaging production. Although giving an interesting glance at the potential differences in how industries are affected, it is a limitation and is due to time constraint and difficulty finding cases because of the coronavirus pandemic limiting the time firms had to do interviews. A third limitation is that the thesis takes certain variables as definitive when they may in fact be dynamic. E.g. does it assume that regulators are the most able group of people to impose environmental benefits, this may not be the case.

Future research could use the developed model (Figure 3) from this thesis to focus on a larger basket of companies and industries and analyze their work with complying with a single regulation during a longer time-frame. This may allow easier observations to understand the differences between the cases. Furthermore, future research could focus on quantitatively test the theoretical perspective offered in this thesis to analyze if shareholder value maximization should in fact be embraced by all firms since it will lead to higher profitability as well as societal benefits without the extra cost of being stakeholder-oriented.

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Appendicies

Appendix 1. Interview guide Swedish

Below information was provided to each respondent before the interview took place. Appendix 1 is the original version in Swedish and Appendix 2 is the translation into English.

Denna intervju avser det nya EU-direktivet som träder i kraft under 2021 (eller den svenska plastpåseskatten). Jag är intresserade av att förstå hur denna lagförändring påverkar företag i olika industrier både i form av hur företaget hanterar förändringen samt även i ekonomiskt resultat. Jag behöver inga direkta siffror utan det räcker med att få veta om det är högre eller mindre osv.

1. Vad har ni för typer av engångsplaster i er verksamhet och på vilket sätt påverkas ni av att vissa eller alla förbjuds?
2. Hur reagerade ni när den nya lagen kom till?
3. Hur har ert arbete sätt ut med att avveckla de produkter/tjänster som förbjuds?
4. Har det påverkat ert arbetssätt? Vinst? Leverantörssamarbeten? Kundsamarbeten?
5. Var ni tvungna att tänka/innervera nytt? Förklara gärna mer djupgående.
6. Har ni hittat bra substitutprodukter? Hur skiljer det sig i kostnader för de gamla kontra nya produkterna?
7. Har ni jobbat med andra förtag för att dela på extra kostnader gällande innovationerna?
8. Hur är er vinst(prognos) idag jämfört med innan?
9. Hur har era intäkter/kostnader ändrats? Har ni ändrat era priser på grund av den nya lagen eller planerar på att göra det?
10. Hur har kunderna reagerat?
11. Hur har leverantörerna reagerat?
12. Vad är eran generella reaktion på den nya lagen och hur ser ni på er framtida verksamhet?
13. Har ni varit med om tidigare verksamhetsändringar pga. nya miljölagar?

Appendix 2 - Interview guide English

Below information was provided to each respondent before the interview took place. Appendix 1 is the original version in Swedish and Appendix 2 is the translation into English.

This interview concerns the new EU directive that comes into force in 2021 (or the Swedish plastic bag tax). I am interested in understanding how this change in law affects companies and various industries both in form of how the company handles changes and also in financial results. I do not need any direct numbers; it is enough to know if it is higher or lower because of the regulation.

1. What types of single-use plastics do you have in your business and in what way are you affected that some or all of them are prohibited?
2. How did you react when the new law was presented?
3. How do you work out how to eliminate/substitute the products / services that are being banned?
4. Has it affected your way of working? Profit? Supplier Collaboration? Customer Collaboration?
5. Did you have to think / innovate in any way? Please explain more in depth.
6. Have you found good substitute products? How do prices compare between substitute products and the original products?
7. Have you worked with other companies to share cost and creativity regarding the innovations?
8. How is your profit (forecasted profit) today?
9. How has your income / payments changed? Have you changed your prices because of the new law or are you planning to do so?
10. How have customers reacted?
11. How have the suppliers reacted?
12. What is your general reaction to the new law and how do you view your future business?
13. Have you been aware of previous business changes due to new environmental laws?

Examensarbeten / Master Thesis
Inst. för skogsekonomi / Department of Forest Economics

1. Lindström, H. 2019. Local Food Markets - consumer perspectives and values

2. Wessmark, N. 2019. Bortsättning av skotningsavstånd på ett svenskt skogsbolag - en granskning av hur väl metodstandarden för bortsättningsarbetet följts

3. Wictorin, P. 2019. Skogsvårdsstöd - växande eller igenväxande skogar?

4. Sjölund, J. 2019. Leveransservice från sågverk till bygghandel

5. Grafström, E. 2019. CSR för delade värderingar - En fallstudie av kundperspektiv hos skogs- och lantbrukskunder inom banksektorn

6. Skärberg, E. 2019. Outsourcing spare part inventory management in the paper industry - A case study on Edet paper mill

7. Bwimba, E. 2019. Multi-stakeholder collaboration in wind power planning. *Intressentsamråd vid vindkraftsetablering*

8. Andersson, S. 2019. Kalkylmodell för produkter inom korslimmat trä - Fallstudie inom ett träindustriellt företag. *Calculation model for products within cross-laminated timber - A case study within a wood industrial company*

9. Berg Rustas, C. & Nagy, E. 2019. Forest-based bioeconomy - to be or not to be? - a socio-technical transition. *Skogsbaserad bioekonomi - att vara eller inte vara? - En socio-teknisk övergång*

10. Eimannsberger, M. 2019. Transition to a circular economy - the intersection of business and user enablement. Producenters och konsumenters samverkan för cirkulär ekonomi

11. Bernö, H. 2019. Educating for a sustainable future? - Perceptions of bioeconomy among forestry students in Sweden. *Utbildning för en hållbar framtid? - Svenska skogsstudenters uppfattningar av bioekonomi*

12. Aronsson, A. & Kjellander, P. 2019. Futureshandel av rundvirke - Möjligheter och hinder för en futureshandel av rundvirke. *A futures contract on roundwood - Opportunities and barriers for a futures trade on roundwood*

13. Winter, S. 2019. Customers' perceptions of self-service quality - A qualitative case study in the Swedish banking sector. *Kundernas uppfattning om självbetjäningskvalitet*

14. Magnusson, K. 2020. Riskanalys av hybridlärk (*Larix X marschlinsii*) - Möjligheter och problem. *Risk analysis of hybrid larch (Larix X marchlinsii) - Opportunities and problems*

15. Gyllengahm, K. 2020. Omsättningslager för förädlade träprodukter - en avvägning mellan lagerföring - och orderkostnad. *Levels of cycle inventory for processed wood products - a trade-off between inventory - and order cost*

16. Olovsson, K. 2020.Ledtider i sågverksindustrin – en analys av flöden och processer. *Lead times in the sawmill industry – an analysis of flows and processes*

17. Holfve, V. 2020. Hållbart byggande – Kommuners arbete för flerbostadshus i trä. *Building in a sustainable way – Municipalities' work for wooden multistory constructions*

18. Essebro, L. 2020. Ensuring legitimacy trough CSR communications in the biobased sector. *Att säkerställa legitimitet genom CSR kommunikation i den biobaserade sektorn*

19. Gyllengahm, K. 2020. Making material management more efficient – reduction of non-value-adding activities at a wood products company. *Effektivisering av materialflödet – reducering av icke värde-adderande aktiviteter på ett trävaruföretag*

20. Berg, E. 2020. Customer perceptions of equipment rental – Services for a circular economy. *Kunders uppfattning av maskinuthyrning – Serviceutbud och cirkulär ekonomi*

21. Emerson, O. 2020. Impacts of environmental regulations on firm performance – the development of a new perspective. *Påverkan av miljökrav på företags prestanda – utvecklingen av ett nytt perspektiv*