USING FRIEDMAN TO UNDERSTAND THE RELATIONSHIP BETWEEN MARKET COMPETITION AND CORPORATE SOCIAL PERFORMANCE

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Doctor of Philosophy

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by
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USING FRIEDMAN TO UNDERSTAND THE RELATIONSHIP BETWEEN MARKET COMPETITION AND CORPORATE SOCIAL PERFORMANCE

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ABSTRACT

The Corporate Social Performance (CSP) literature focuses on the relationship between financial performance and social performance of firms. Although the literature recognizes a positive relationship between these two ideas, it is not clear what role competition plays, since there is confusion in the literature about the theoretical relationships among these factors. Competition is expected to be an important factor because Friedman's writings on corporate social responsibility stated that firms have only one social responsibility, and that responsibility is conditioned on the nature of competition in the industry. This research extends the CSP literature by examining how competition affects CSP.

This study points out a reason for the confusion in the literature. It is that the CSP literature does not explicitly include in its theory and empirical analyses the role of incentives, as created by competition. Rather, CSP only takes into account the resources (i.e. financial performance) force, largely ignoring the role of competition as expressed by Friedman. Competition offers the incentives for firms to engage in social performance. Competition at the same time reduces profits depriving thus firms form the second major force, that is, necessary resources to invest in social performance. Thus, incentives and resources, as affected by competition, are limiting factors on each other.

I suggest that the difference between Freidman and CSP lies on the grounds of mere definition. Friedman's major argument was to promote free and open competition abiding to the legal and ethical rules of the society. This argument escaped the attention of CSP literature and it is an argument that can be used to actually bridge CSP and Friedman. I propose that CSP and Friedman are not two competing theories but they need one another in order to create a better and more complete theory of CSP.

CHAPTER 1: INTRODUCTION

1.1. General Problem - Motivation

The motivation behind this study is the socioeconomic problems of the modern world, such as poverty, unequal distribution of wealth, and environmental degradation to name a few. In the era of globalization, which the World Bank[1] defines as "the growing integration of economies and societies around the world" the mobility of people, information, and economic and social assets has increased dramatically. Distance is not the obstacle that it was just a few decades ago. We experience an unprecedented technology-driven change with respect to society and integrating economy, but this change does not come without challenges.

The increasing degree of interdependence means that we are much more affected by the actions and decisions of others than we were in the past. In other words, our economic activity can have impacts on larger and more distant groups of populations. The liberalized economy brought rapid growth to countries such as China and India resulting in the alleviation of poverty and increasing per capita income. But this rapid growth comes at a cost such as increasing unequal income distribution and environmental degradation (Margolis & Walsh 2003; Adams & Maine 1998).

These socioeconomic problems have repercussions on the larger society and thus create tensions among countries, nations and cultures. The fear of losing cultural identity or becoming alienated is strong and well spread among a large portion of the world's population as globalization accelerates. Combined with great inequalities at the level of

[1] http://www1.worldbank.org/economicpolicy/globalization/

material wealth, this can become a highly explosive mixture and result to social unrest or even terrorism which has become a major global policy issue the last few years.

Firms are the major vectors for economic activity. A large number of constituents are affected by small or large businesses. Stockholders, employees, customers, suppliers, distributors, environment and last but not least – depending on the size and scope of the firm – the local, national or global community. To this end, there is a growing body of literature that deals with the social responsibilities business has toward the society (Carroll 1979, 1999; Freeman 1984; Wood 1991; Mitchell Agle and Wood 1997; Schwartz & Carroll 2003).

Delving in this literature one soon realizes an underlying tension or conflict. The literature on the social responsibilities of firms, which argues that firms' should take action toward alleviation of social ills, seems to be haunted by Milton Friedman who has made a strong statement against such actions.

1.2. Specific Problem

Can firms address these problems and offer potential solutions while still remain profitable or competitive? Should they? This is an ongoing debate in the literature, generated in part by Milton's Friedman assertions that "the business of business is business" and that the "social responsibility of business is to increase its profits" (Friedman 1970). These statements produced a flurry of research as an antidote to this assertion (Margolis & Walsh 2003), the intent of which was to test whether firms can maximize profits and be socially responsible at the same time.

This literature, broadly called Corporate Social Responsibility literature (CSR), has also been called Corporate Social Performance literature (CSP) since research focused more on the measurement of social performance rather than the economic or moral reasons behind socially responsible behavior (Sethi 1995). In particular, this literature studies the relationship between financial performance and social performance of the firm (FP-SP link).

Resources are identified in the CSP literature to have a positive bicausal relationship with social performance (Griffin & Mahon 1997; Waddock & Graves 1997). That is, firms need resources to invest in social performance. At the same time stakeholders (customers, investors, employees, etc) prefer doing business with socially responsible firms so that such firms increase their profits too in a virtuous circle (Freeman 1984; Mitchell, Agle & Wood 1997). However, the literature is not unanimous in the positive relation between social performance and resources (i.e. financial performance) (Smith 2003; Margolis & Walsh 2003). There is evidence for a negative relation between resources and social performance and the explanation is that investments in social performance are a cost to the firm and put the firm at a competitive disadvantage (Apperle et al. 1985).

Accordingly, the social performance-financial performance link does not have strong theoretical support. Friedman stated that any social performance investment would be a cost for the firm. CSP theory argues the opposite but not in a convincing way (Ullmann 1985; Rowley & Berman 2000; Margolis & Walsh 2003).

In this study I show the source of the problem is that CSP literature has focused on criticizing Friedman's assertions that businesses should only focus on profits but has

dismissed Friedman's major point on competition. The study recognizes that it is competition that offers the incentives for firms to invest on social performance. By focusing on the resources side of the equation CSP missed the role of competition in social performance. The outcome is that there is confusion as to how resources and incentives affect CSP and why. This leads to incomprehensible theoretical discussions and conflicting evidences. I argue that CSP needs to use Friedman correctly in order to solve the confusion.

By dismissing Friedman CSP was deprived of a theoretical tool that actually supports their primary objectives. This is the reason why CSP suffers theoretically. CSP has missed the point Friedman tried to make. As this study explains, the key concept that bridges Friedman with CSP literature is competition and its effects on CSP.

1.3. Objectives

The purpose of this study is to examine the factors affecting CSP, focusing specifically on the role of competition. Friedman's ideas on competition are used as a means of bridging the theoretical and empirical divide within the CSP literature. Specifically, this study examines the effects of competition on CSP.

In particular, the objectives of this study are to

1. Explain the reason behind the Friedman – CSP conflict.
2. Identify a gap in the CSP literature and argues that Friedman can offer a solution, focusing on the role of competition.
3. Provide empirical evidence on the relationship between competition and CSP.

CHAPTER 2: THE LITERATURE

2.1. Corporate Social Responsibility (CSR)-Corporate Social Performance (CSP)

2.1.1. History of the concept

Corporate Social Responsibility as a term is relatively new (Carroll 1999) but as a concept it is quite old. Indeed since ancient times people were aware of the social effects of businesses. Eberstadt (1973) gives a nice overview of the history of the concept from classical Greece through the medieval, mercantile and industrial periods to the modern era.

In ancient Greece, for example, community was highly valued and businesses were expected to "serve the community in an honest and skillful manner" (Eberstadt 1973, p.77). Plato talks about the need for environmental conservation with regards to mining and lumbering activities. Later, St. Thomas Aquinas, amidst a generally hostile business environment within the Catholic Church, argued that businesses could be legitimated as long as they work towards a "definite purpose, namely, the good estate of the household [community]" (p.78).

In late 1930s and early 1940s, Chester Barnard (1938), J.M. Clark (1939) and Theodore Kreps (1940) wrote *The Functions of the Executive*, *Social Control of Business*, and *Measurement of the Social Performance of Business* respectively. In these books we can trace the roots of modern corporate social responsibility. But it is the work of Howard R. Bowen in 1953, entitled *Social Responsibilities of the Businessman*, which marks the beginning of the modern period of CSR (Carroll 1999).

CSR received increasing attention during 1960s and 1970s, especially after Friedman's aphorism that "the business of business is business" (Friedman, 1970). One response was a plethora of definitions for corporate social responsibility (CSR) that developed during this period based on concepts such as corporate social performance, corporate social responsiveness and corporate citizenship (Carroll 1999).

2.1.2. Definitions-Terminology

This study uses the terms Corporate Social Responsibility (CSR) and Corporate Social Performance (CSP) extensively and it seems necessary to define the terms. Although efforts have been made to conceptually distinguish between them (Preston 1978; Sethi 1979; Carroll 1979; Ullmann 1985; Wood 1991), the two terms CSR and CSP generally are used interchangeably.

There is an extensive literature on CSR. Bowen (1953) says that CSR "refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (p.6, quoted in Carroll 1999, p270).[2] McGuire defines CSR as the responsibilities of the corporation which extend beyond economic and legal obligations (McGuire 1963). Davis and Blomstrom (1966) defined CSR as the responsibilities "beyond the narrow economic and technical interests of the firm" (p.12 quoted in Carroll 1999, p.272). They argue that businessmen should consider the effects of the firm's actions on the whole social system.

Davis (1967) defines the source of responsibility and argues that responsibility stems from the ethical consequences of our acts that may affect other's interests. Davis'

[2] For a comprehensive review of the literature on the various definitions on CSR see Carroll 1999.

"iron law of responsibility" suggests that firms are part of society and that they have economic and social power. Unless firms practice this power responsibly they will lose it (Davis 1973). This responsibility goes beyond the pure economic responsibility. For instance Freeman's (1984) seminal book "Strategic Management: A stakeholder approach" builds a case for the stakeholder theory of the firm. He states that a firm should take into consideration not only the shareholders but also other important stakeholders such as consumers, employees, local community, and natural environment. According to Freeman a stakeholder is "any group or individual who can affect or is affected by the achievement of the firms' objectives" (p.46).

Most of the definitions suggest that the term social responsibility refers to responsibilities of the corporation beyond the economic and legal responsibilities of the firm (Carroll 1999). Carroll, a leading scholar on CSR offers a broad definition that appears to be widely accepted within the literature and it is the one I use in this study. Carroll argues that CSR involves four aspects: economic, legal, ethical and discretionary responsibilities. A firm ought to have an economic goal. This is the main reason that firms exist: to satisfy society's demands for goods and services as well as to create wealth (economic level of responsibility). Firms should obey the law (legal level of responsibility). They also need to abide by the society's ethical norms (ethical level of responsibility). Finally firms have a fourth level of responsibility and this is the "discretionary expectations that society has of organizations at a given point in time" (Carroll 1979, p.500). The difficulty to precisely define a concept that is subject to change over time and depends on cultural characteristics is obvious (Sethi 1975).

During the last 30 years research focused on the financial performance (FP) - social performance (SP) link. In this literature the term CSP is mostly used instead of CSR (Sethi 1995). In the management literature these two terms are distinguished although there is no unanimity about the definition of each term. Wood (1991) gives a broad definition of CSP that actually encompasses CSR. She defines CSP as a three dimensional framework. The first dimension refers to the principles of social responsibility (i.e. CSR) the second includes processes of social responsiveness and the third deals with observable outcomes. CSR refers, as the term suggests, to the responsibilities a firm has toward different stakeholders (consumers, community, shareholders, environment, employees, etc). The term CSP refers to the actual social performance of firms. Other terms commonly used in the literature to describe social performance is "firm's response to different stakeholders," "stakeholder responsiveness," and "stakeholder management" among others (Berman et al. 1999; Johnson and Greening 1999; Ogden & Watson 1999).

2.2. Friedman's view

Milton Friedman is not the only scholar who opposes CSR, but he is the most prominent one. Other scholars such as Friedrich Hayek and Ludwig von Mises (Austrian school) and Theodore Levitt (Harvard) have opposed the idea that managers should spend money beyond profit maximization (Walton 1982). David Henderson (2001) also does not support the idea of CSR. However Friedman is the one who explicitly disapproves of CSR activities and he explains the reasons in detail.

Friedman stated that the only responsibility that firms have is to increase profits subject to engaging in free competition and abstaining from fraud and deception. In his book *Capitalism and Freedom* (1962) he elaborates on the issue of corporate social responsibility. He states: "there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition, without deception or fraud" (p.123).

Friedman explains that a "framework of law" must be established and that this is a responsibility of all members of the society. Under this framework the Smithian invisible hand can work in such a way that when each individual serves his own interests he is contributing in the whole society's well-being. Friedman considers that CSR is a dangerous doctrine that can "undermine the very foundations of the free society" (p.123). The reason is that the managers (i.e. a small group) of the firm make decisions not driven by competitive forces but by their personal judgments and these decisions are not in the direction of the stockholders' benefit.

The CSR movement was on the rise when Friedman published a special article on this issue in the New York Times magazine in September 1970, explaining in depth why he is against such a doctrine. Friedman supports his view on the grounds of "principle and consequences" (p.122). The relation between a manager and the shareholders is a principal-agent relation. The manager, as an agent, has only one responsibility and this is towards the principal as shareholders who hire her to maximize the firm's value. Shareholders invest in a firm and they expect the manager to maximize their profits. By

doing so the manager also maximizes the social benefit because she uses resources in the most efficient way according to the price mechanism of the free market.

If any manager wishes to contribute any amount of money for charity or any other social reason she should do so using her own money and not the firm's. Similarly shareholders are totally free to spend their money individually as they wish without any restriction. But it is unethical for the manager to use shareholder's money for other purposes she might consider socially just.

When a manager uses shareholders' money to allocate in ways he decides it is like he is imposing a tax on the shareholders. But, as Friedman argues, taxation is a government policy. Engaging in CSR the manager "becomes in effect a public employee, a civil servant, even though he remains in name an employee of a private enterprise." (p.122) According to Friedman "the doctrine of 'social responsibility' involves the acceptance of the socialist view that political mechanisms, not market mechanisms, are appropriate way to determine the allocation of resources to alternative use" (p.122).

With regard to consequences Friedman uses the example of inflation. A hypothetical country has relatively high inflation and the manager makes the decision to contribute in decelerating inflation by not increasing the price of the firm's product at the level that the market forces would normally define. Is that going to have the effect the manager expects? Friedman argues that by reducing the price the manager simply leaves his customers with more money to spend somewhere else without real effect in inflation. Another possibility is that this decision may lead to shortages. The manager is an expert in doing business but not an expert in macroeconomic policy and inflation. (Friedman 1970).

In a competitive market, resources will be allocated efficiently. Managers should follow the price mechanism and maximize profits. The social responsibility of firms as well as the very reason of their existence is to create wealth (Friedman 1970).

2.3. Bridging the CSR and Friedman perspectives

Friedman is very clear in his statement about social responsibility: "there is one and only one social responsibility of business–to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition, without deception or fraud" (1970, p.123). Friedman goes further and explicitly states that firms should "make as much money as possible while conforming to the basic rules of the society, both those embodied in *law* and those embodied in *ethical custom*" (p.33, emphasis added).

Recall that Carroll's widely accepted definition of CSR is that it encompasses four dimensions: economic, legal, ethical, and discretionary. Friedman agrees with the first three dimensions. Indeed scholars (Treviño & Nelson) have already noted that Friedman's view on corporate social responsibility "tacitly embraces two of the three additional components of the corporate social responsibility pyramid: legal and ethical responsibilities" (1995, p.29). This is important, as scholars have often misinterpreted Friedman by saying that he advocates firms pursuing profits at the expense of ethics (James & Rassekh 2000). The only space one has for arguing that Friedman is against CSR is the discretionary-philanthropic activities, which according to him constitute a pure loss to the firm.

Yet, in an interview in 1989 Friedman addresses the issue of philanthropy arguing that as long as the shareholders agree on the philanthropic activities the firm decides to engage then these activities are acceptable.

The major pillar behind Friedman's theory is freedom and democracy. The manager has only one responsibility: to the shareholders who hire him in order to maximize the firm's value. But if shareholders consider that the firm's value increases with discretionary type of activities (which enhance reputation for instance) then the management acting democratically according to the shareholder's will and given that it stays away from cheating and fraud should pursue this discretionary philanthropic activity.

In a 1972 interview Friedman was asked about the case of Henry Ford. Was he socially responsible as CSR advocates would argue? His reply was no, "he didn't do it to discharge social responsibility" but "because he could make more money that way." Did Ford not maximize profits when he raised the wage above the level that free market would dictate? Probably not in the short run but apparently yes in the long run. He invested in his workers (engaged in social responsibility as CSR scholars argue) offering them wages much higher than the market level.

For Friedman what Ford did was good management and nothing more. What Friedman defines as CSR is activities of the managers that are not aligned with the stockholders and activities where the manager assumes the role of a public servant although not elected. This is why he considers CSR as a subversive doctrine. Friedman implicitly recognizes the imperfection of the markets and that a manager must have discretion to act the best he can.

It becomes clearer now that the disagreement between Friedman and CSR is mostly a matter of definitions. What CSR calls social responsibility, Friedman calls good management. Carroll's (1999) fourth dimension of CSR refers to firm's discretion. Different managers will make different decisions given the same circumstances. Both Friedman and the CSR scholars often want the same thing–firms that contribute to the overall well-being of society–maybe also even doing some explicit good with regard to the environment, protection of employee rights, community development, etc. The difference is one of motivation (incentives or duty) and what ultimately leads to these things.

However CSR focused mostly on Friedman's argument against social responsibility (a social responsibility as Friedman defines it, that is, the manager assumes the role of a public servant and being in sheer opposition to firm's profit maximization) missing thus his major point which was the importance of competition (Friedman 1962, 1970). Friedman's condition for social benefit maximization is free and open competition. CSR-CSP research dismissed that point and became preoccupied in finding evidence that social performance and financial performance are not opposite but they go hand in hand.

2.4. The Social Performance – Financial Performance link

2.4.1. The Theory

There is a large literature on the financial performance-social performance (FP-SP) link.

After Friedman asserted that CSP is harmful for the firm, researchers set out to theoretically evaluate and empirically test this assertion. In the initial stages of the theoretical development of CSP there are two arguments: the moral based argument saying that firms should be socially responsible regardless profits because it is the right thing to do, and the business case argument that it is at the firm's best long term interest ("enlightened self-interest" is the term used by Richman) to engage in CSP (Richman 1973; Carroll 1999; Smith 2003).

Over time the business case gained acceptance as it claimed that social performance and profits are not mutually exclusive but indeed they can go hand in hand (Richman 1973).

Michael Porter and many strategic management scholars view CSP and specifically the aspect of philanthropy as an important opportunity for firms to differentiate and gain comparative advantage. Firms can differentiate using a social performance portfolio but the portfolio should be carefully chosen and needs to be aligned with the firm's mission and activities. Not every kind of spending is good (Porter and Kramer 2002).

Social Investment funds (institutional investors) may be willing to invest in a firm that is socially responsible (Graves & Waddock 1994; Cox et al. 2004). As Porter and Kramer (2006) state, it is actually a very good strategy when a firm can align its philanthropic activities with their mission. For instance a computer company may donate money to support school programs that educate kids on computers. A computer firm has the know-how and the donation will be much more productive from the perspective of the interests of the firm than donating, say, for some environmental purpose.

Philanthropy, however, is not the only aspect of CSP, as it refers generally to the relations with the community, which of course is an important stakeholder. Another stakeholder group, and probably one of the most important for the firm's survivability, is customers. Harrison (2003) argues that in the globalization era "the ordinary consumer assumes quasi-regulatory status" and firms cannot afford not to behave in a socially acceptable way. Information flow increases, along with powerful campaigns and consumer activism than can considerably affect firm's decisions. This means that firms have the motivation to invest in social performance in order to attract customers.

Mohr et al. (2001) conducted a survey to study consumer attitudes. They concluded that consumers do not behave based only on strictly economic self-interest (i.e. looking only for the lower price) but depending on the amount of information they have they value other aspects of the product such as socially responsible production and firm operation. For example, assume that we have highly competitive conditions in an agricultural product market for orange juice. A firm can differentiate itself from its competitors by choosing to purchase oranges from the local organic farmers at a higher price. This can be considered as a socially responsible action because the firm decides to support local producers who are also environmentally responsible by not using chemicals. If the consumers are willing to pay the extra premium that will suggest that the firm differentiated successfully and its social performance goes along with its financial performance.

Another major stakeholder group is the employees. Akerlof and Kranton (2005) argue that identity among employees can reduce considerably monitoring costs and it can also increase productivity. Identity means that workers identify themselves with the

company; they feel they belong there and they see the company as a large family rather than as a simple wage payer. A very nice example, that can be used to better illustrate the above argument, is the case of Ford.

Henry Ford doubled the wage for his workers. According to Akerlof and Kranton (2005) one could argue that Ford's decision contributed to the creation of a strong corporate identity or culture. Employees appreciated such a decision; they appreciated the trust that Ford showed to them. Thus they felt stronger bond toward the industry they worked and in return they could work harder with less supervision than before. Given the harsh economic conditions of the time they identified themselves with the firm who provided them a better living than other similar firms.

Concluding this section I can say that firms can build trust among their stakeholders such as investors, consumers, workers, suppliers, and the local community strengthening the social ties of a large network among these various groups. This will reflect higher social consolidation and integration which in turn suggests higher social stability, secure environment, reduced uncertainty and risk, higher feeling of fairness, higher degree of voluntarism and higher intrinsic motivation (Casadesus & Khanna 2002) which can result in increasing profitability (Porter & Kramer 2005).

2.4.2. The empirics

There are many empirical papers estimating the relation between corporate social and financial performance. If we add also the papers that deal with only specific parts of CSP (such as philanthropy) or draw links between CSP (or, again, specific parts of it) and

governance structure (Board of Directors) or reputation then we reach the number of hundreds (Margolis & Walsh 2001, 2003).

Hypotheses have been stated for all possible correlations, negative, neutral and positive as well as with respect to causation. Based on CSP interpretation of Friedman one hypothesis is that there is a negative correlation between firms' social performance and financial performance. Aupperle et al. for example (1985) posit that performing in a socially responsible way might reduce the competitive advantage of firms. On the other hand Porter and Kramer (2002) argue that corporate philanthropy can be an element of competitive advantage suggesting a positive relation between philanthropy (an aspect of CSP) and financial performance. Many others like Clarkson (1988) and Griffin & Mahon (1997) also hypothesize a positive relation.

The empirical results on the relation between financial and social performance are mixed. They vary from negative to neutral to positive (Waddock & Graves 1997). Using CSP as the explanatory variable few studies found a negative relation between FP and SP (Mueller 1991; Boyle, et al. 1997; Wright & Ferris 1997). That is, firms that engage in social performance do financially worse than firms that do not. Some studies found mixed results (Bowman & Haire 1975; Cochran & Wood 1984; McGuire et al. 1990; Graves & Waddock 1994; Berman et al. 1999; Hillman & Keim 2001). That is, some aspects of social performance (consumers or employees for instance) are positively related with FP whereas some other aspects of CSP (environment or minorities for example) are negatively related to FP. Some found no significant relation (Alexander & Boucholz 1978; Aupperly at al. 1985; Guerard 1997; McWilliams & Siegel 2000; Waddock & Graves 2000). That is, SP does not affect FP. Many studies however found

support for a positive relation between SP and FP. That is, firms which engage in SP perform financially better than firm that do not engage in SP. (Preston 1978; Clarkson 1988; McGuire et al. 1988; Griffin & Mahon 1997; Russo & Fouts 1997; Waddock & Graves 1997; Graves & Waddock 2000).

Using CSP as dependent variable no study has found any support for a negative correlation (Margolis & Walsh 2003). Few studies found support for mixed relation, that is, firms investing in some aspects of SP also do better financially (Johnson & Greening 1999) as well as non-significant relation (Patten 1991). Some studies found evidence for a positive relation, that is, firms that invest in SP do better financially than firms that do not invest in SP (Fry et al. 1982; Brown & Perry 1994; Konar & Cohen 1997; Preston & O'Bannon 1997; Waddock & Graves 1997).

Specifically, McWilliams and Siegel (2000) find a neutral relation after controlling for R&D expenditures. They argue that much of the positive relation is found because previous research failed to control for R&D expenditures that are positively correlated with CSP.

Hillman and Keim (2001) find that there is positive relation between some of the CSP aspects but negative between others. Specifically, they argue that social expenses related with primary stakeholders (shareholders, customers, employees, suppliers and community environment) have a positive impact on the financial performance, while spending for social issues not related to primary stakeholders has a negative impact.

Orlitzky et al. (2003) in a meta-analysis study find a positive relation and argue that the belief that the results are so far inconclusive is without strong basis because most of the results clearly show a strong positive correlation. Frooman (1997) does also a

meta-analysis working from the opposite direction and finds a negative link between shareholder value and illegal and socially irresponsible behavior (i.e.: positive relation between CSP and shareholder value).

Griffin and Mahon (1997) reviewed many empirical papers as well as conducting their own empirical study. Of 62 results reported in 52 articles (covering 25 years of research) 33 results were positive, 20 negative and 9 showed no relation. Two years later Roman et al. (1999) revisited these articles and argued that we need to recategorize these results, adding some new and deleting some old ones because some studies were methodologically flawed. Mahon and Griffin replied that although Roman's et al. study is very useful offering some new insights and a different perspective the authors used subjective standards to eliminate and recategorize some of the studies reinterpreting thus some of the results (Mahon & Griffin 1999).

Similarly, Margolis and Walsh (2001) have found that almost 100 studies have examined the relation between CSP and CFP in a span of 30 years. Out of the 100, 80 examine if CSP can predict CFP. The majority (42) of these studies shows a positive relationship, 19 indicate no relationship, 15 had mixed results and 4 demonstrated a negative relation. However, Smith (2003) argues that the results should "be treated with caution because there are major methodological problems" (p.66).

2.4.3. Analytical and measurement issues

The problems discussed in the last section are due in large part to the lack of a consistent measure of CSP. Due to lack of appropriate data, early research on a FP-SP link (the pre KLD era, explained in detail below) was based on content analysis, that is,

annual reporting with respect to: pollution devices, women and minorities (affirmative action), community contribution, contributions to charity, product safety. Also, releases of pollution-control performance information by the Council on Economic Priorities (CEP), reputation index, (Council of Economic Priorities), and surveys such as the one by Moskowitz who surveyed business school students on the Fortune 500 firms asking them to rank the companies based on their perception of the companies' social performance (Roman et al. 1999).

Much of early research measures of social performance were based on firms' self reports (Roman et al. 1999). However, there is a difference between what firms say what they do and what they really do (Roman et al. 1999). Fry and Hock (1974) found that size and public image affect responsiveness reports. They say that reports on social responsibility are biased toward big firms. The bigger the company and the more it has at stake reputation-wise the longer the report on social responsibility. Does that mean that they also do a lot? However, that does not necessarily mean that all early research is worthless. On the contrary it is exactly these early researchers that opened the way to the creation of a more elaborated dataset such as the KLD (Griffin & Mahon 1999). Another problem is that some studies do not consider the whole CSP construct but partial measures of it such as environment only (Schwartz & Carroll 2003).

The measurement of financial performance is also not unproblematic. Several measures have been used in the literature for financial performance. Return on assets (ROA) return on equity (ROE), return on investment (ROI), stock returns and shareholder wealth changes serve as effective measures of CFP (Roman et al. 1999). However, we find in the literature that advertising expenditures, asset age, executive compensation,

institutional stock ownership and liquidity have in many cases been used as a financial performance measure. These measures are far less acceptable measures of overall corporate financial performance than ROA or ROI (Roman et al. 1999). On measurement problems one can find sometimes the reason for all these disagreements, contradictory results, even different interpretations of the same results (Waddock & Graves 1997).

Some of the measurement problems were resolved when the Kinder, Lydenberg, Domini (KLD) dataset was first created in 1991. KLD collects data annually on many social indicators of firm performance. The KLD database quickly became widely used in most of the empirical studies. "KLD is an independent rating service that focuses exclusively on assessment of corporate social performance across a range of dimensions related to stakeholder concerns" (Waddock & Graves 1997, p.307). KLD uses annual reports, yearly questionnaires sent to the company's investor relation office, proxy statements, quarterly reports, as well as articles about companies published in the business press such as Fortune, Business Week, Wall Street Journal, trade magazines, academic journals, etc. (Waddock & Graves 1997).

The KLD database has been used by the literature extensively and has been identified as the best database so far with respect to the construct validity (Sharfman 1996) compared to other available measures of CSP such as the measure used by Fortune magazine. Of course this is not to say that it is the perfect measure. However it is the most commonly used by researchers in the field of management and it has offered a great solution to the measurement problem early researchers had faced in 70's and 80's (Waddock & Graves 1997; Johnson & Greening 1999). Extensive discussion and more information on this dataset is provided in the Methods chapter

2.4.4. The CSP-competition link

Although researchers have extensively studied the relationship between social and financial performance little work has been done on how competition affects social performance. The strong focus on the social – financial performance link as a way to prove that CSR does not harm but actually helps firms has distracted researchers' attention from studying a different relation which may actually be more helpful and fruitful in understanding Friedman's and CSR debate, and why not, reconcile the two if possible.

I argue that the study of the relation between social performance and market competition will also shed new light on and help better clarify the SP-FP relation. Some authors in the literature I just reviewed use the social performance as an explanation for financial performance. Others use financial performance as the explanatory variable. The question of causality is not clear. Many authors argue the causality run both ways (Waddock & Graves 1997; Margolis & Walsh 2001, 2003; Hillman & Keim 2001; Preston & O'Bannon 1997).

Economists argue that market structure plays a significant role in welfare creation. Specifically competition and free markets are the means to maximizing social benefit. In contrast monopolies and markets that deviate considerably from the perfect competition ideal have incentives to engage in activities, such as restricting output and raising prices above marginal cost, which decrease social welfare. From the CSP perspective, it can be hypothesized that monopolies do not have the incentive for socially responsible behavior. Based on resource dependence theory, (Pfeffer & Salancik 1978) which states that firms

depend for their resources on multiple stakeholders (suppliers, employees, investors, etc), the monopolistic firm does not depend on stakeholders as much as the competitive firms.

However, some have hypothesized that fierce competition can decrease the number of choices a firm has for CSP through a reduction of profits (Van de Ven and Jeurissen 2005). In their paper, Van de Ven and Jeurissen built a theory on the relation between CSP and competition. CSP is considered to be a strategy that firms can implement as they compete. Depending on the level of competition in the market (for reasons of simplicity they distinguish three types of competition: fierce, strong and weak) firms will accommodate their strategy decisions. Based on Porter's model the authors argue that the main strategy choices for the firms are three (corresponding to the three levels of competition): low cost strategy, product differentiation strategy, or both.

The authors do not say explicitly that firms will behave in a less socially responsible way if competition goes from weak to strong to fierce. Rather, as competition increases firms have fewer choices for engaging CSR activities. They argue that higher competition is associated with lower profits for a firm and thus the less the firm can afford to implement socially responsible activities, following a slack, resource-based explanation.

But, can we conclude that high competitive environment reduces CSP? Does de Van and Jeurissen's argument that competition reduces the choices a firm has for different CSP strategies necessarily mean that there will be less CSP? Not necessarily. Van de Ven and Jeurissen discuss the importance of information flow, which is related to the firm's reputation risks, and the legal system. Even in highly competitive environments but where the public can have easy access to information pertaining to

firm's social performance, firms have an increased incentive to engage in CSP because otherwise they will risk a punishment from consumers, investors or other stakeholders.

Only recently has work been done on the proposed direction. Berman, Phillips and Wicks (2005) review some existing theories and discuss the extent to which these theories can offer insights on the issue of how firms respond to multiple stakeholders. In the case of a monopoly, given the dependency of consumers on this only firm, we can expect that even though the firm has plenty of earnings to devote on CSP it simply does not have many incentives to do so because consumers cannot punish it by buying from another firm (i.e. consumers' preferences cannot be accurately reflected in the price system due to market's imperfection).

One such theory is the stakeholder theory initiated by Freeman (1984), which is that firms need to incorporate the interests of all stakeholders in order to do financially well. Interesting theoretical insights for our study can be gained from the stakeholder theory. Also empirical results mostly, although not conclusively yet, support the argument that social and financial performance go hand in hand. Consequently one would expect that firms would be willing to invest in social performance if they expect that this investment will increase their financial performance too. If customers prefer to shop from socially responsible firms, if suppliers prefer to supply to this type of firms, if investors prefer to invest in socially responsible firms, then competitive firms rather than monopolistic will have an incentive to satisfy various stakeholders and have good reputation to customers, suppliers, investors, people in the communities where they can draw their working force, etc.

Another theory is the resource dependence theory (Pfeffer & Salancik 1978). The main insights of this theory are that firms are dependent on several stakeholders for the different resources they need so on one hand they try to satisfy these stakeholders but on the other hand they try to have more control over the resources they need in order to reduce the uncertainty.

Berman et al. study the effects of market environment on the social performance of the firms. They test environmental munificence, dynamism and complexity on the social performance or stakeholder responsiveness. By munificence they mean "the level of growth within a given industry" (p. 8). They argue that when the environment is highly munificent (fast growing industry) the firms are less dependent on any particular stakeholder. It follows that the firm will be less likely to address stakeholder concerns.

Dynamism refers to the "turbulence or instability facing an environment" (p. 9) and expressed in terms of unpredictability and variability in rates of change. They argue that when dynamism is low, firms face less unpredictability in getting their resources, so they will be less dependent on their stakeholders. That means firms will not be likely to attain high levels of stakeholder performance (i.e. social performance).

Finally they use the concept of environmental complexity, that is, market competition. They use the four-firm concentration as a proxy for complexity. Their argument states that when the level of industry concentration is high, the environment is less complex, thus firms have greater environmental certainty, which again will result in lower levels of stakeholder responsiveness (another term used in the literature to denote social performance).

Greening, Johnson and Mattingly (2005) agree that an increase in competition will increase stakeholder responsiveness (i.e. CSP) but up to a point. There will be a point after which further increase in competitiveness will result to a decrease in social performance of firms. In highly competitive conditions where profit margins are very thin firms will compete following a low cost strategy rather that investing in CSP as a differentiation strategy.

They tested 200 firms in the year 1991 and they found that moderate levels of competition correspond to the highest levels of CSP. They found the relation to be inverted U-shaped. Put in simple words this means that CSP increases with competition up to a certain level and then decreases. Their explanation lies along the lines of Van de Ven and Jeurissen and is the following: when competition increases firms try to diversify and create them competitive advantage (Porter 1985). However, when competition becomes fierce, firms mostly compete on prices (low cost strategy) and that reduces CSP.

However, the main point of these two studies is not on how resources and competition can shape CSP. It is rather on testing moderating effects of managerial discretion, market environment, and other individual (top management team) variables on CSP. The shortcomings of these empirical papers are the following: Berman et al. paper does not check for a curvilinear relationship and their results weakly support the positive relation between competition and social performance. On the other hand Greening et al. check for curvilinear relationship but they use a relatively small size for only one year. Also they do not use the five dimensions of KLD separately but group them into two categories: primary and secondary stakeholders. This can result in the loss of some potentially useful information. For example we don't exactly know how each dimension

of KLD (community, diversity, employees, environment, and product) relates to changes in competition levels.

The major point and insight of this study is to show that CSP literature has a lot to gain if it embraces Friedman's theory without which CSP is crippled. The financial-social performance relation is the one leg of a complete CSP theory. Friedman is the second that can make CSP theory stand better that it does so far.

CHAPTER 3: CONCEPTUAL FRAMEWORK

In the previous chapter I described the CSR literature with the focus on the link between social and financial performance. I also argued that a key objective of that research was to respond to Friedman's assertion that firms have no social responsibility other than maximizing profits (Margolis & Walsh 2003). Scholars of corporate social responsibility (CSR) assert that Friedman places too much emphasis on the pursuit of profits at the expense of actions that managers ought to be taking for the good of society.

Where has this line of research lead so far? The literature on CSR has provided useful insights into the nature of strategic management and how a manager can better address multiple stakeholders (Freeman 1984). However, there are limitations to this approach that have not been fully recognized in the literature. The limitation stems from the preoccupation of scholars in showing that there is, or is not, a link between a firm's financial performance (FP) and its level of social responsibility or performance (SP) (Rowley & Berman 2000; Margolis & Walsh 2003). The problem with this approach is that it does not rest on a rigorous theoretical framework. For instance, Ullmann characteristically titled his 1985 article "Data in Search of a Theory." The reason is that there was no solid theory to support a relation between financial and social performance (Rowley & Berman 2000). The implication was different and conflicting hypotheses (Ullmann 1985; Preston & O'Bannon 1997).

Preston and O'Bannon (1997) review several hypotheses and conduct an empirical analysis to test which hypotheses are supported by the data. These hypotheses are as follows:

a) social impact hypothesis, that is, you are good or you are out of business, so the prediction is a positive relation;

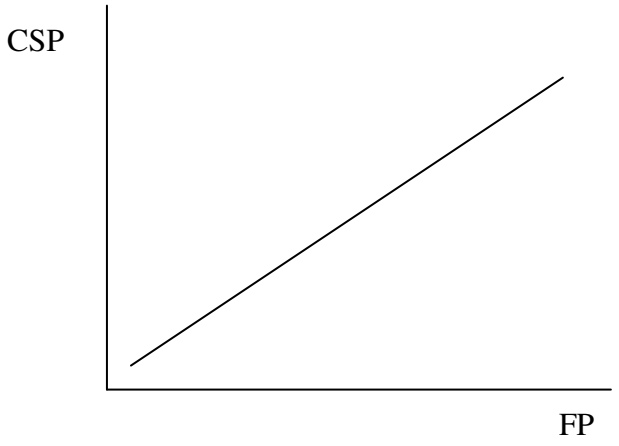
b) trade off hypothesis, reflecting, as they argue, Friedman's view, that is, SP represent a pure cost and it is an expense relatively to the competitors, so the relationship expected is a negative relation;

c) available funds hypothesis, that is, the firm has enough financial leeway to engage in social responsibility, this predicts a positive relation;

d) managerial opportunism hypothesis, that is, opportunistic managers prefer short term cash flow rather than socially responsible investment for long term viability and growth, so the predicted relation is negative.

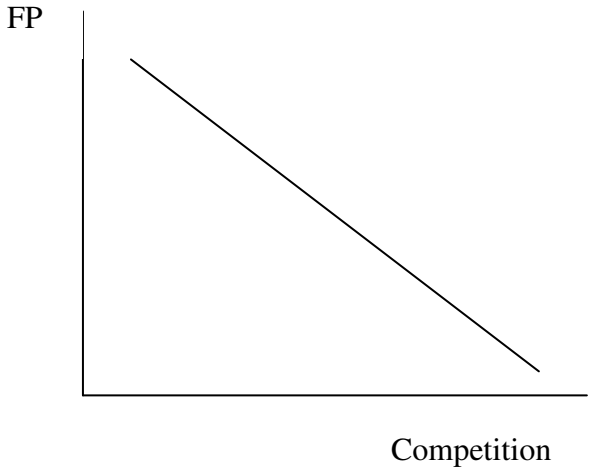
Preston and O'Bannon conclude that there is a strong positive association between FP and SP and that the causality runs from FP to SP, consistent with hypothesis (c), the available funds hypothesis. As I suggested in the previous chapter this is not the only study on the FP-SP relationship. During the 30-year period from 1972 to 2002 as many as 127 empirical studies examined the FP-SP relationship (Margolis & Walsh 2003). In most of the studies (109) CSP was a predictor of financial performance rather than the other way around (18). The outcome is strong evidence to the positive relation and very little evidence for a negative relation (Margolis & Walsh 2003). This relationship is illustrated in Figure 1.

Figure 1: CSR theory: Resources: Financial and Social Performance are positively related.



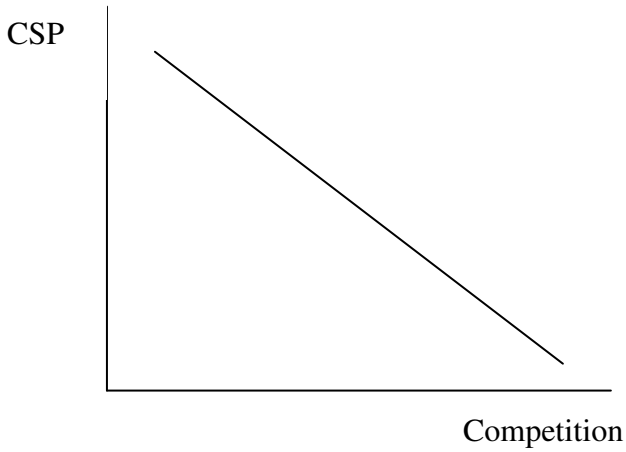
In addition to the relationship between FP and SP, there is also a literature examining the relation between profits (financial performance) and competition. This is shown to be negative (Capon et al. 1990; Berman et al. 1999), as illustrated in Figure 2. Economic theory suggests that as competition increases economic profits decrease (Pindyck & Rubinfeld 2001). Specifically Capon et al. conduct a Meta analysis of 320 published empirical studies that relate market environment, strategic and organizational factors to financial performance. They find that 99 studies have addressed the relation between competition and financial performance and there is strong support for a negative relation.

Figure 2: Financial Performance and Competition: negatively related



Combining the insights identified by the FP-SP and FP-competition literatures, we can derive an expected relationship between competition and SP. Since competition is negatively related to profits and profits are positively related to social performance, then competition ought to be negatively related with social performance (Figure 3). The more the competition increases the more the profits decrease and according to the CSR theory the less the social performance of firms.

Figure 3: From graph 1 and 2 it derives that Financial Performance and Competition are negatively related.

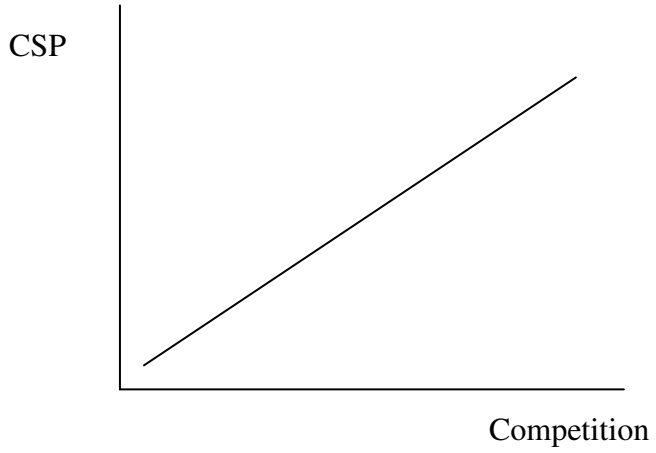


To be clear, this is the relationship between SP and competition that is expected, given the current state of research on corporate social responsibility. However, as suggested above, the theoretical justification for this relationship is not explicitly identified within the literature.

There is an alternative way of thinking about the relationship between competition and CSP, which comes from thinking about why firms might engage in CSP actions from an economic perspective. According to basic economic principles, incentives are important in guiding behavior. Scholars suggest that social performance is a way to gain a competitive edge (Griffin & Mahon 1997; Waddock & Graves 1997; Berman et al. 1999, 2005; Greening et al. 2005). If this is the case, then one might expect that firms that have a greater incentive to gain a competitive advantage, perhaps because they operate in a highly competitive environment might engage in more socially-responsible actions than firms in less competitive environments. In other words, *incentives* to invest in social performance might be important, in addition to the need for *resources* to engage in SP activities. Whereas a resources view suggests a negative relationship between competition and SP, an incentive view suggests just the opposite.

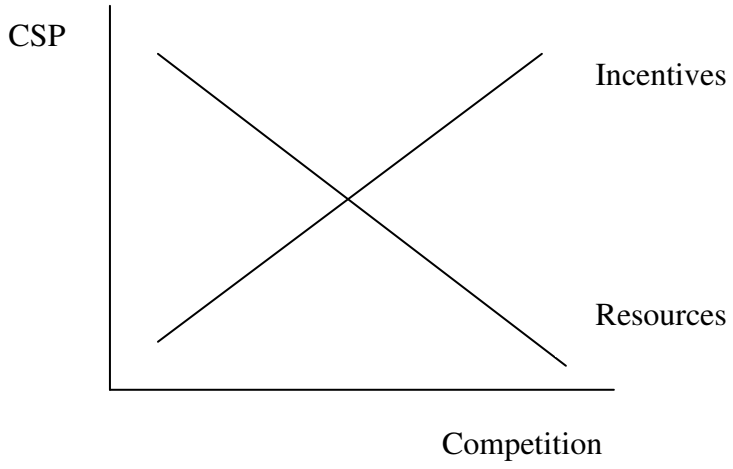
The idea that competition and SP might be positively related is derived from Friedman. If there is no competition where is the competitive edge to be gained? Why should a firm invest in social performance? However, the empirical results of the CSP research seem to support that competition and social performance are not positively related. This is the confusion of the FP-SP link literature that I believe can be cleared up by incorporating competition in the CSP model.

Figure 4: Friedman's theory: Incentives: the more the competition the more the incentives to perform socially.



To understand the incentive argument better, recall what Friedman said and what his point was. He said that benefits to society will be maximized when firms complying with legal and ethical norms of the society try to maximize profits by engaging in free and open competition. For Friedman, competition is the key to social benefit maximization. Competition offers the incentives to managers to be entrepreneurial and make the best decisions they humanly can. That Friedman agrees with three of the four dimensions of CSR articulated by Carroll (Treviño & Nelson 1995) is not the issue. The issue is the 4th dimension, which is discretionary actions directed toward SP. When firms want to engage in these activities in order to gain a competitive advantage, Friedman says we should simply call it good management rather than social responsibility. The positive relationship between competition and SP is depicted in Figure 4.

Figure 5: CSP and Friedman: resources and incentives, the two forces shaping social performance.

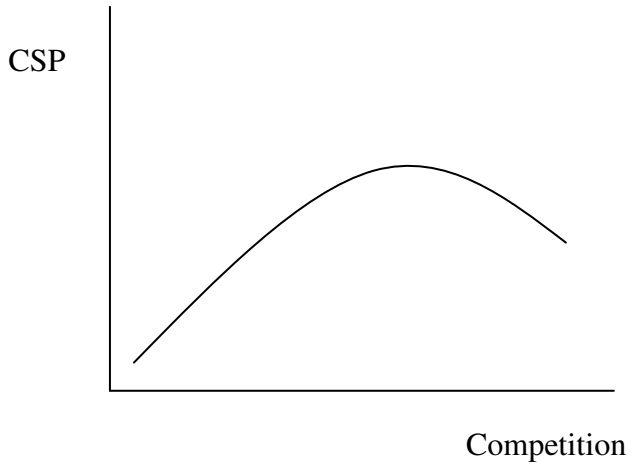


I postulate that there is an element of truth to both views of the relationship between SP and competition, which can be recognized by combining Figures 3 and 4 (see Figure 5). Engaging in socially responsible activities requires firm resources, which is why CSR is so often a controversial activity. However, why might firms want to do this? From an economic perspective, incentives ought to matter. Therefore, I surmise that incentives matter, but up to a point.

As the level of competition increases from low competition toward increasingly higher levels, some firms will engage in CSR in order to gain a competitive advantage. However, the effect of increasing competition on SP, while increasing, will be at a decreasing rate. This is because as competition increases, microeconomic theory predicts that excess profits decline, thus removing slack or resources available for CSR activities. Therefore, there will be a point at which increases in competition no longer result in higher levels of SP because of diminished resources. Thus, whereas the incentive effect of higher competition leads to greater SP, the constraining effect of declining available resources expected as competition increases will result in less CSR. This is in effect a

prediction for a curvilinear (inverted U-shaped) relationship. This is illustrated in Figure 6.

Figure 6: Merging the two theories:



In effect, what I have proposed is a way of merging Friedman (i.e. incentives) with CSP (i.e. resources) theory. CSP has focused on how resources (financial performance) affect social performance but has left out of the picture *why* firms perform socially, that is, incentives. This is the gap Friedman can fill in. CSP need Friedman to complete their theory and better explain the FP-SP link. I posit that there is no meaning to studying the FP-SP link out of the context of market competition. CSP and Friedman are not to the opposite camps as CSP literature seems to suggest. CSP and Friedman can be complements and not substitutes.

Combining Friedman and CSR theories I expect to explain why the results in the SP-FP link are not definitive but mixed. It is because we have not checked for the role of competition with the consequence that the models were not well specified. This is why the FP-SP relationship is problematic. And this is what this study comes to explain.

CHAPTER 4: METHODS AND PROCEDURES

4.1. The KLD Dataset

The objective of the empirical analysis is to identify relationships between firms' social performance and market competition and to test whether there is a trade off between incentives and the resources firms need to invest in social performance. This will also indirectly test whether Friedman and CSR theory are conflicting theories, or substitutes, or complements.

To do so, I need data on social performance, market competition as well as a number of control variables. Accordingly, the method of the analysis followed is the 'single equation multivariate statistical analyses' (Ethridge 2004). Social performance is the dependent variable and market competition the explanatory variable, that is, I examine how market competition affects social performance.

Many empirical studies use the KLD dataset as a CSP measure (Luck & Pilotte 1993; Graves & Waddock 1994, 2000; Kurtz & DiBartolomeo 1996; Guerard 1997a,b; Waddock & Graves 1997, 2000; Berman et al. 1999, 2005; Johnson & Greening 1999; McWilliams & Siegel 2000; Hillman & Keim 2001; Greening et al. 2005; Griffin & Koerber 2006).

The Kinder, Lyndenberg, Domini (KLD) Research & Analytics, Inc. is a "leading authority on social research and indexes for institutional investors."[3] The KLD database measures and assess social performance of firms. The database contains data on the social records of over 3000 publicly traded U.S. companies. The database spreadsheets

[3] http://www.kld.com/about/index.html

contained data from 1100 Socrates companies listed on the Standards & Poor 500, Domini 400 Social Index, and Russell 1000 for the 1991 to 2002 time period (Waddock & Graves 1997).

KLD includes seven dimensions: community, corporate governance, diversity, employee relations, natural environment, human rights, and product quality. The 'corporate governance' and 'human rights' dimensions were added to the database in 2002. Each dimension contains a number of social indicators (social screens) which can be strengths or concerns. Each social indicator is part of the overall evaluation of corporate social performance concerns. Strength and concern ratings are signified by a number "1". The absence of ratings, signified by a "0", indicates that a company did not meet the criteria for the strength or concern.

For example, the dimension 'Product' includes the following social indicators: a) Strengths: quality, R&D/Innovation, benefits to economically disadvantaged, other strength; b) Concerns: product safety, marketing/contracting controversy, antitrust, other concern. A particular firm for instance may get a 1 in quality and R&D and a 0 in benefits to economically disadvantaged and other strengths. Detailed information on all dimensions and social indicators is provided in the Appendix.

In addition to these dimensions, which are qualitative screens, KLD also includes six exclusionary screens. The exclusionary screens differ from the qualitative ones in that they are only concern ratings (i.e. no strength ratings) and include the following: alcohol, gambling, firearms, military, nuclear power, and tobacco.

CSP is measured by the qualitative screens. Indeed, most studies on CSP do not include the exclusionary screens unless the study specifically requires so. The reason is

that the exclusionary screens are related to the firms' operations per se rather than stakeholder issues. The fact that a firm may engage in the production of tobacco, alcohol, firearms, etc. does not convey much information about its responsiveness towards various stakeholders such as the local community, employees, customers or the natural environment. The exclusionary screens are not directly related to stakeholders (Waddock & Graves 1997; Johnson & Greening 1999).

KLD index is recognized as the best way of measuring CSP currently (Graves & Waddock 1994; Waddock & Graves, 1997). After KLD database was constructed in 1991 it has been widely used in the literature on CSP measurement. Although CSP is difficult to measure, KLD is superior to any other measures. Graves and Waddock (1994) review other measures used as CSP proxies and conclude that KLD is by far the best. It is a multidimensional measure that captures a broad CSP construct. That is, KLD corresponds to most of the identified stakeholders that are part of the CSP construct (Clarkson 1995).

Graves & Waddock (1994) argue that "CSP is notoriously difficult to measure consistently" (p.1038). Many different ways have been used, including "forced-choice surveys, Fortune reputational and social responsibility index, content analysis of documents, behavioral and perceptual measures and case study methods" (p.1038). Criticisms on these are reported by Graves and Waddock (1994) to be: "survey methods have problems relating to return rates and consistency among raters. The Fortune ratings have been criticized as being a measure of overall corporate financial performance as of social performance. Document analysis depends upon the comprehensiveness of and the purposes for which the documents were originally created. Behavioral and perceptual measures potentially suffer from respondent bias and inconsistency. Case study methods

also suffer form both inconsistency and lack of generalizability" (p. 1038). However KLD has provided the missing consistency and resolved many of the measurement issues. KLD provides a series of indexes developed by an independent firm that specializes in social performance ratings and it is consistent and objective (Graves & Waddock 1994).

One limitation of the KLD dataset identified by Graves and Waddock (1994) is that it gives equal importance to all attributes-dimensions. Many authors have tried to overcome this problem by using weights (Graves & Waddock 1994; Waddock & Graves, 1997). However the development of weights is subjective (Rowley & Berman, 2000). Other studies found weighting lacked theoretical justification (Hillman & Keim 2001). One way to circumvent this problem is to use the dimensions separately and not aggregate into one index (Berman et al. 2005).

KLD has also its critics. Jon Entine (2003) argues that subjective judgment and arbitrary cut off lines are implemented and this is a major concern. Entine questions the objectivity and the validity of the database. The response to this critique is that although subjective judgment takes place, it applies consistently across companies and time (Waddock & Graves 1997)[4]. Also KLD's construct validity has been checked by Sharfman (1996). It is true that the database has been used in the literature extensively and has been identified as the best database so far with respect to the compared to other available measures of CSP mentioned earlier. Again, this is not to say that it is the perfect measure, but it is the best available so far.

[4] For a more detailed and extensive discussion on the KLD database see Waddock and Graves 1997.

4.2. Data

The study uses secondary data from two databases: the KLD database, which offers measures for the dependent variable (i.e. corporate social performance), and COMPUSTAT, an electronically accessible (https://wrds.wharton.upenn.edu/) database, for all other firm related variables.

4.2.1. Dependent variable

The dependent variable is the CSP (i.e. social performance of the firms) as reported by the KLD database. I use 5 of the 7 dimensions included in the KLD due to data availability: community, diversity, employee relations, natural environment, and product. For each dimension there is a separate reporting for strengths and concerns, and each strength and concern has a list of specific indicators (detailed information on each dimension can be found in the Appendix).

The KLD spreadsheet contains 0's or 1's for each strength and concern. Also it has a column for each of the 7 dimensions' strengths and concerns, which aggregates all indices to a total index for that specific dimension's strength or concern. This can give a number which varies from 0 (if no strengths or concerns) up to potentially the total number of strengths or concerns each dimension has. As the probabilities that a firm meets the criteria of all social indicators in one dimension are very low we rarely see numbers above 3 or 4.

Many of the studies in the Social – Financial Performance literature use an aggregate measure of the KLD database. That is, they sum up strengths and concerns for each dimension and then they sum up the indexes of all dimensions to come up with one general index (Graves & Waddock 1994). However, by doing so, we lose valuable

information from the different dimensions in the KLD database (Rowley & Berman 2000; Berman et al. 2005). Also, we have to resolve the problem of the unequal importance of the different dimensions using weights (Graves & Waddock 1994; Waddock & Graves 1997).

In this study I follow the method several authors use in disaggregating the dimensions (Berman et al. 1999; Johnson & Greening 1999; Agle et al. 1999). I also disaggregate strengths and concerns in each dimension. The reason is that sometimes strengths and concerns are correlated with industry characteristics and sometimes strengths or concerns of one dimension or, stakeholder variable, relate to strengths or concerns in another stakeholder variable (Berman et al. 2005).

The literature uses a -2 to +2 scale of the aggregate dimension of the KLD. The range of the scale was from major concern (-2), concern (-1), neutral (0), strength (+1), to major strength (+2). This limits the information we could get if we treated strengths and concerns separately. In this study each dimension's strength or concern can vary from 0 to 7 (depending on the number of indicators in each dimension as discussed earlier) not being limited to only 2 possible outcomes (+1, +2 for strengths and -1, -2 for concerns). This way, I am able to get insights from the specific relationships between each dimension' strengths and concerns with market competition rather than a general and abstract relation between CSP and competition. Depending on the levels of competition in the market firms may respond differently to various stakeholder groups (community, customers, employees, natural environment).

As discussed earlier the KLD database contains qualitative and exclusionary screens, the latter not being directly related to stakeholder groups. This is the reason

many studies on CSP do not include the exclusionary screens (Graves & Waddock 1994; Waddock & Graves 1997; Johnson & Greening 1999; Berman et al. 1999; Hillman & Keim 2001). For this reason the study does not include the exclusionary screens.

The study also includes 5 out of the 7 dimensions (qualitative screens) of the KLD database, since 2 dimensions (human rights and corporate governance) were included in the database in 2002. However data beyond the year 2002 were not available.

4.2.2. Independent variables

The independent variables are the degree of market competition as well as its square term. It is operationalized by the Herfindahl-Hirschman Index (HHI), which is considered a better proxy for competition than the simple concentration ratio (CR4) in that it captures the relative size of the companies and number of competitors whereas the CR4 does not (Greening et al. 2005). The HHI is defined as the sum of squares of the market share of each firm (http://www.oligopolywatch.com/2003/08/15.html).

The HHI was calculated from COMPUSTAT. COMPUSTAT contains data for more than 20,000 publicly owned firms in the U.S. Using data on firms' sales in each industry we are able to calculate the HHI. The SAS code for the HHI calculation can be found in the appendix. When HHI is calculated it is a number that ranges between 0 and 1. A value closer to 0 means competition in the specific industry is high. In order to make the number easily and intuitively interpretable, that is, the bigger the number the more the competition, I subtracted it from 1. So now if there is a monopoly with HHI = 1 the measure becomes 0 and if there is an industry with fierce competition, say 0.1 the measure approaches 0.9.

4.2.3. Control variables

Previous empirical literature has shown that I need to control for other factors expected to affect CSP. Size, financial performance, risk, and industry will be used as control variables. Size has been found to affect stakeholder responsiveness as big firms may have higher contributions to community or be able to hire a more diverse workforce (Ullman 1985; Waddock & Graves 1997; Hillman & Keim 2001). Size is operationalized as the log of total assets and log of total sales.

Also, as discussed in depth in previous sections, financial performance is shown to have positive relation with social performance (Moskowitz 1972; Clarkson 1988; McGuire et al. 1988; Griffin & Mahon 1997; Preston & O'Bannon 1997; Russo & Fouts 1997; Waddock & Graves 1997; Graves & Waddock 2000). Firms that do well financially can afford to be highly responsive to the various stakeholders (product quality, donations to communities, higher wages, etc). Financial performance is operationalized using the return on assets (ROA) and the return on Sales (ROS). ROA was calculated as Net Income divided by Total Assets and ROS as Net Income divided by Total Sales. The causation is argued to run from FP to SP and this is why I use a one-year lagged ROA.

Risk is expected to reduce firm's responsiveness as it reduces the financial ability to devote resources for the improvement of community relations, employee relations, new environmental policies etc (Bourgeois 1981; Aupperle at al. 1985; Waddock & Graves 1997; Johnson & Greening 1999). As discussed in the theory chapter risk may

induce managers to focus on the short term outcomes rather that the long term. Risk is operationalized by the ratio of long term debt divided by total assets.

Finally, although prior research has identified the need to control for industry (Waddock & Graves 1997; Hillman & Keim 2001), not many studies have done so because the sample size is not large enough to control for all industries at a 4-digit SIC level. A few studies that have controlled for industry, like the above cited ones, have done so at a very aggregate level. The two recent studies by Greening et al. (2005) and Berman et al. (2005) do not control for industry because they use competition as well as other independent variables for industry and market environment as a proxy for industry. It is true that the competition (HHI) variable is a proxy for industry but not a very good one. For instance more than one industry may have the same HHI indicating the same competition levels, but is this a control for industry specific effects? The two or more industries with the same or very close HHI may be very different industries. The only way to effectively control for industry effects is to use an industry dummy variable. It is recognized that industry effects are very important in the social performance of the firms (Griffin & Mahon 1997). It is expected for instance that industries which by their nature are heavy pollutants (oil industry, chemicals, heavy machinery, and utilities) are going to be in disadvantage with respect to their environmental performance for example relative to industries like services (hotels), banking, insurance or software.

Industry is operationalized using the 4-digit SIC codes (Standard Industrial Classification). Because my data also suffer from a small size I group many industries together. However, this study controls for many more industries than previous studies have done so far. I use two groups of models: one without controlling for industry and a

second controlling for industry effects so I can better evaluate the importance of industry effects.

All data for the control variables are collected from COMPUSTAT.

4.3. Sampling method

The sample contains all firms listed in the KLD database for the 4 years 1997-2000. The reason I chose only 4 years and not more is that KLD is not constant throughout the whole period it is publishing data. Several social indicators have changed, have been added or eliminated, or have moved from one dimension to another. The variables during the 1997-2000 time have remained relatively constant.

For example, *Indigenous Peoples Relations* was added to the Community dimension in the year 2000 and moved to the Human Rights dimension in 2002. *Support for Education,* another Community indicator, was added in 1994. Similarly *No layoff policy* (an Employee Relations indicator) was eliminated in 1994, *Pension/Benefits concern* was added in 1992, *Progressive Gay/Lesbian Polices* (a Diversity indicator) was added in 1995, *Property Plant and Equipment* (an Environment indicator) was added in 1995 etc. As one can see in the Appendix, the years with the least number of changes include the years 1997-2000 and for reasons of consistency these are the years I chose.

In order to control for firm specific effects and add robustness in the analysis I chose only the firms that appear in all 4 years (panel data). There are 653, 658, 662, and 661 firms in the KLD database for the years 1997, 1998, 1999, and 2000 respectively. From those, 505 are in common (i.e. show up in all 4 years). Missing data reduced the sample to 491 firms. However, the number of firms is significantly greater than previous

studies in the area. Greening et al. (2005) analyze 200 firms and Berman et al. (2005) study 256 firms. It should be noted that, at least as far as the author is aware of, there are no studies that focus on the specific question this study examines, that is the effect of market competition on the social performance of firms.

The study uses the 5 dimensions separately (community, diversity, employee relations, environment, and product quality). This is a value-added contribution in that it will provide a finer grain analysis in understanding how competitiveness affects specific aspects of social performance related to different stakeholder groups. In total there are 10 regressions: 2 regressions (strengths and concerns) for each of the 5 dimensions.

Another area where this empirical analysis is path breaking is that it does not use Ordinary Least Squares (OLS) but Ordered Probit analysis. The reason is that OLS is not the best method when the dependent variable is discrete (Wooldridge 2002). OLS have several problems dealing with non continuous variables the most important of which are a) predicted values do not make sense, that is they fall outside the possible range of the outcome, and b) the regression coefficients are biased (Wooldridge 2002).

I use Ordered Probit because the dependent variable in this study is ordinal, that is, when a firm scores 0, 1, 2, or 3, or more in the number of strengths (concerns) in any of the 5 dimensions that conveys valuable information. The more the strengths or the less the concerns are, the more the social performance in that dimension, and the less the number of strengths or the more the concerns are, the less the social performance exhibited by the firm. For that reason the regression model used in the study is Ordered Probit regression.

4.3.1. Model specification

The model that will be used to estimate the relation between market competitiveness and stakeholder responsiveness of the firms is based on the models used by Greening et al. (2005) and Berman et al. (2005). It combines the two in a model that best follows the theoretical analysis presented in the previous chapter. Berman et al. use CSP as the dependent variable and operating environment (a group of variables such as munificence, dynamism and complexity described in the literature review), as well as managerial discretion variables such as selling intensity, age and capital intensity. They control for size and financial performance. However they do not check for curvilinear relationship between competition and CSP.

Greening et al. check for curvilinear relations but they do not disaggregate the 5 dimensions of CSP. Berman et al. study focuses on how resource dependence and managerial discretion affect stakeholder performance and Greening et al. focus on finding environmental and individual predictors of stakeholder performance. The latter include in their model demographic characteristics of top management team.

The general model I use in this study is the following:

$CSP^* = C + b1\ HHI + b2\ HHI^2 + b3\ Size + b4\ FP + b5\ Risk + b6\ \text{time dummies} + b7\ SIC$

where:

CSP*:	latent CSP: firm's social performance, as measured by the KLD database
C:	intercept,

HHI:	market competition as measured by the Herfindahl-Hirschman Index,
Size:	firm's size as measure by either Log of Total Assets or Log of Total Sales,
FP:	firm's Financial Performance as measured by either the Return on Assets (ROA) or Return on Sales (ROS),
Risk:	firm's Risk as measured by Long Term Debt / Total Assets,
Time dummies:	dummy variables for the years 1998, 1999, and 2000,
SIC:	industry dummy variables for several categories based on the 4-digit SIC codes.

As stated above this model builds on previous models. Berman el al. (2005) hypothesize that high level of complexity (i.e. less industry concentration) will exhibit high level of social performance. They find support for their hypothesis, although it is not very strong. One reason, as argued in the theory chapter, is that they do not check for a curvilinear relation.

Greening et al (2005) test for a curvilinear relation and find strong support. However their model combines the 5 dimensions of the KLD database in 2 major categories (primary and secondary stakeholders). As discussed earlier in this chapter, any aggregation of dimensions deprives us of valuable information. Also Greening et al. do not separately examine strengths and concerns.

I use two measures for financial performance (ROA, ROS) and size (log of Assets and log of Sales) in order to determine best model fit. I do not use both measures

simultaneously in one model as doing so gives back highly variable, instable estimates. The reason for that is that there is a high degree of correlation between the two measures.

The statistical software used is SPSS and SAS. SPSS is more user-friendly but it does not provide as much information as SAS does. For example the AIC (goodness of fit) indicator is only provided in SAS. Also in order to report the marginal effects SAS is necessary. The interpretation of coefficients in the case of Ordered Probit needs some elaboration before it becomes understood. We need the marginal effects to be able to tell that this much change in the independent variable causes this much change in the social performance of the firm.

Given the sample size (505) and the fact that these 505 firms correspond to 212 industries (4-digit SIC) it would not make sense to control for all industries. This is why I grouped the industries and reduced them down to 24 (see table 2 next chapter for the list of industries).

Finally, the limited time span (4 years) does not allow for a time series analysis. Besides, the use of the time dummies showed that there are no significant differences among years.

The null hypothesis to be tested is that market structure does not have any significant effect on Corporate Social Performance. The alternative hypothesis is that there is a curvilinear relationship between competition and CSP.

4.4. Hypotheses

Based on the above discussion I have the following main hypothesis: As competition increases social performance increase at a decreasing rate, indicating a curvilinear relationship between competition and CSP.

As CSP is measured in both positive (strengths) and negative (concerns) ways I expect: a) when measuring strengths: as competition increases the number of strengths is increasing (b1 coefficient positive) at a decreasing rate (b2 negative), and b) when measuring concerns I expect the same relationship but reversed (i.e. a negative perspective, or a mirror image), that is, as competition increases the number of concerns decrease (b1 negative) at a decreasing rate (b2 positive). See figure 7a, b.

Figure 7a Hypothesis a: Expected relation between strengths and Competition

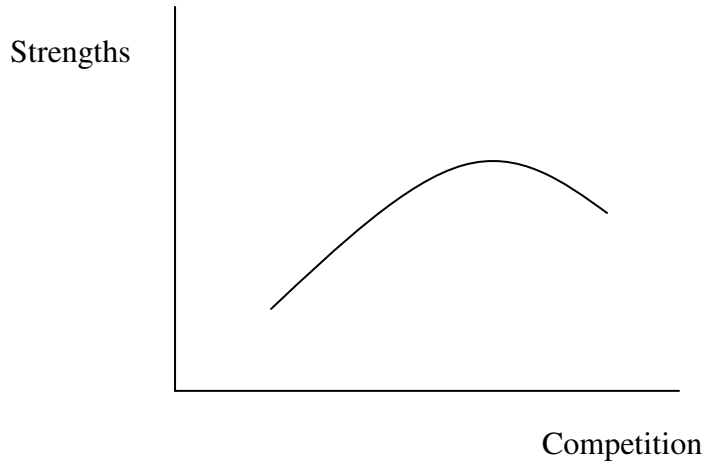
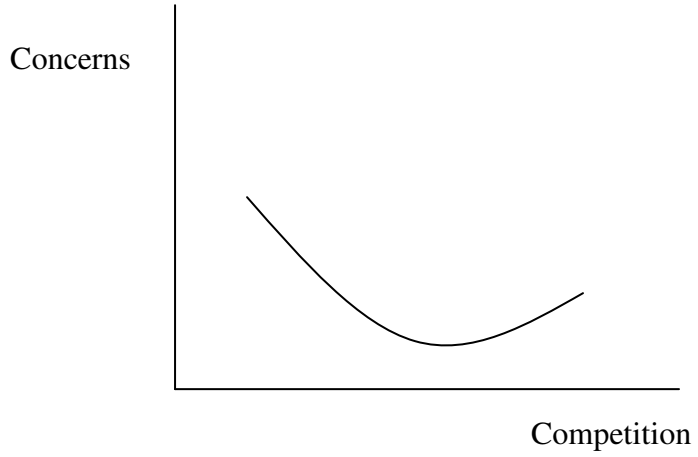


Figure 7b Hypothesis b: Expected relation between concerns and Competition



CHAPTER 5: RESULTS CHAPTER

The general statement which can be derived from the results is that the hypothesis receives partial support by the data. Three out of the five CSP dimensions show that competition levels can explain variation in the CSP variable. These are: Community, natural Environment and Product. Diversity and Employee relations appear not to be significantly affected by competition. Some unexpected results (opposite of expected signs) also offer food for thought and discussion. A detailed report of the results and explanations follow.

A first set of models was run to check if there are considerable differences when using different variables to control for the size and the profitability. As mentioned in the previous chapter I use the natural logarithm of total assets (LnAssets) and the natural logarithm of total sales (Ln Sales) as control variables for size and ROA and ROS as financial performance control. Combining these four produces four different models: LnAssets-ROA, LnAssets-ROS, LnSales-ROA, LnSales-ROS. The differences among these models are minor, suggesting that I can use either one.

Descriptive statistics of the main variables are shown in Table 1. Separately, Table 2 contains the industry dummies descriptive statistics.

Two sets of regressions were run, one without controlling for industry and the other using the industry dummies. The reason for including industry dummies is based on the expectation that different industries have different levels or degrees of competition. Moreover, as explained in the last chapter industry effects may matter as some industries (e.g. mining and oil industries) may be more related to some aspects of the CSP such as

environment than other industries creating a bias in the results. I control for 24 industry groups. Given the size of the sample (2020 for all 4 years, actual 1946 with missing data), it is important to see what the results are with and without the dummies. This is because when controlling for 24 industry groups the total number of 2020 firms is spread among 24 industries reducing the number of firms down to a little more than 80 firms in each. However there is considerable variation (Table 2) in the number of firms per industry group. There are groups with well above 100 firms and others with only a few (e.g. tobacco).

Pseudo R^2 values are relatively small, suggesting that the independent and control variables explain a small part of the variation of the dependent variable. This is recognized in the literature (Berman et al. 1999; Berman et al. 2005; Griffin & Mahon 1997; Waddock & Graves 1997) and the explanation is that most of CSP is attributed mostly to managerial skillfulness and discretion rather than economic or market conditions. However this is not to say that market does not play a role or that CSP is not a strategy for differentiation and gaining competitive edge. On the contrary, CSP literature stresses exactly this point, that managerial skills are highly related to firm's performance and market positioning (Freeman 1984; Clarkson 1995; Donaldson & Preston 1995; Carroll; 1999).

5.1. Part A: Results on the set of models without the industry dummy variables

5.1.1. General remarks

Tables 3a to 3j show the results of each of the 10 regressions using different combinations of size and profitability controls. Model 1 uses LnAssets and ROA, model

2 LnAssets and ROS, model 3 LnSales and ROA, and model 4 LnSales and ROS. All four models show very similar results. The implication is that I can choose one (with the best goodness of fit) for the next step which is to check for industry variation. Model 5 includes industry dummies so we can compare the four models without the industry dummies and get an idea of the industry effects.

Time was controlled for using time dummy variables and in no case it was significant. This does not come at a surprise because the time span of four years is relatively small for significant changes to occur. Since time does not play a significant role I can safely pool the data (the 4 years) and thus increase the sample size from 505 to 2020. Doing so will allow me to control for the 24 industry groups more effectively than if I had only 505 firms to work with (I have more observations for each industry group).

As mentioned in the previous chapter, the dependent variable is the CSP as measured by the KLD database. CSP is measured by five dimensions of KLD (community, diversity, employee relations, natural environment, and product) which correspond to five major stakeholder groups (community, women and minorities, employees, environment and consumers respectively). These five dimensions are each divided in two groups of screening indicators: strengths and concerns. Consequently I have a set of 10 dependent variables. These are: Community Strength (ComStr), Community Concern (ComCon), Diversity Strength (DivStr), Diversity Concern (DivCon), Employee Strength (EmpStr), Employee Concern (EmpCon), Environment Strength (EnvStr), Environment Concern (EnvCon), Product Strength (ProStr), and Product Concern (ProCon).

Based on the hypothesis that competition should positively affect social performance but at a decreasing rate, I would expect that the competition variables in the 10 regression equations show the following signs:

The five strengths are expected to be positively related to the competition and negatively related to the competition squared: competition positively affects social performance but at a decreasing rate, that is, HHI is expected to be positive and HHI^2 negative.

The five concerns are expected to have the opposite signs. Once higher competition means higher social performance this translates to the higher the competition the less the social concerns a firm exhibits. In this case I would expect the competition coefficient (HHI) to be of negative sign and the competition square (HHI^2) of positive. Expected signs are included in the Tables for easier comparison with the findings.

Community Strength: (Table 3a)

Two of the four models (when using Assets as a control for size) show HHI and HHI^2 to be significant at the 5% level and quite important (estimate 1-1.5). When Sales are used for size control then no significance is demonstrated although the HHI signs remain the same. In all cases the signs are as expected.

The rest of the control variables have the expected from the literature signs, that is risk is negatively related to social performance and size and financial performance positive. However, only risk and size are significant at the 5% level and 1% respectively. In only one model risk was not significant (p=0.124).

Community Concern: (Table 3b)

None of the models showed competition to significantly explain variation in this specific dimension of social performance. Also, the signs were not in the expected direction. In one model the sign was in the opposite direction than hypothesized, suggesting a U-shaped relation rather than inverted U-shaped, although it was not significant (the p-values were in the 0.2 vicinity). That is, there is the hint that initially competition negatively affects social performance but it picks up in higher levels of competition. This may be an interesting case which I further investigate later.

Regarding the other control variables, all are highly significant ($p<0.001$) with the expected signs except size. It appears that the larger the firm the less responsible it is towards community. However, the magnitude of the coefficient is quite small (0.3-0.4). Risk and profits affect community concerns at a moderate to a large extent (coefficients: 1.5-1.8).

Diversity Strength: (Table 3c)

The Diversity dimension of the KLD is one of the dimensions along with the Employees dimension that competition is not significantly related with performance in these categories. Both HHI and HHI^2 are highly insignificant. Their signs are also not in the direction expected offering the hint that there might be a slight U-shape relation to be examined rather than an inverted U-shaped.

Pertaining to the other variables, risk and size are significant at the 5% level for risk and 1% level for size. Signs are as expected, that is, higher risk leads to lower performance in the diversity dimension. Analogously, the bigger the firm is, the better the

performance in this dimension. Still, the effect is not strong (risk coefficients: 0.5-0.6, size coefficient: 0.2). Profits are not a significant explanatory factor.

Diversity Concern: (Table 3d)

Again HHI and HHI^2 are highly insignificant. An interesting and intriguing result is that risk significantly (1% level in all but one model and 5% level at that one model) and moderately (coefficient -0.6) affects this dimension but not in the expected direction. The negative sign implies that the more the risk the less the concerns, that is, the better the performance in this dimension.

Employee Strength: (Table 3e)

'Employee relationships' is the other dimension where competition does not seem to explain the variance. Both HHI and HHI2 are insignificant. However the signs are in the expected direction, that is, positive and negative respectively. In only one model profits are significant at the 10% level, whereas in the other three models profits do not affect employee performance. Risk is significant at the 1% level with the expected sign and a moderate magnitude (coefficient: -0.5 to -0.6). Size positively affects employee strength and it is highly significant ($p<0.001$) although at a very small scale (coefficient < 0.1)

Employee Concern: (Table 3f)

Although competition does not significantly affect performance in this category, there are some interesting results worth a further analysis. The signs of the HHI and HHI^2 are in the opposite direction than expected and I investigate later on this. Risk is not significant in any model. Size is significant in three models (at the 5% level in one model

and at the 1% level in the other two) but at a very minor scale (coefficients never reach a value above 0.15) and the sign is in the opposite direction than predicted in the literature. This means that the larger the firm the more the concerns about its employee-relations performance, although the importance is very small. Finally, profits are highly significant (1% level in all models) and they demonstrate a relatively important effect (coefficient varies between -1.2 and -2.4). That is, the more the profitable the firm the less the concerns or put it in a different way the better the employee-relations performance.

Environment Strength: (Table 3g)

The results suggest that the dimension Environment is generally related with market competition. Interestingly it is not the 'strength' part of the dimension which is related to competition but rather the 'concern' part. Indeed neither HHI nor HHI^2 reach significant levels in all the four models. Furthermore, the sign is also in the opposite direction of anticipated.

To make things more intriguing we see that risk and profits, both highly significant in all models (levels of significance are 1% for risk, and 5% for profits), have also the opposite signs of expected. This means that risk affects environment strength positively and that profits affect it negatively. The more the risk for a firm or the less its profits, the better it performs with respect to environment strengths. The effects are moderate (risk coefficient 0.7 and profits coefficient -.8 to -1.0 across models).

Firm size is the only variable that has the expected sign, that is, the larger the firm the better it performs in environment strength. Size has a 1% level of significance in most models and 5% in one model. However importance of size effect is very limited if not unimportant (coefficient never exceeding 0.07 in any model). One possible explanation

discussed later in detail is that there are strong industry effects that need to be controlled for.

Environment Concern: (Table 3h)

As already mentioned environment concern exhibits high correlation with market competition. Both HHI and HHI^2 have the expected signs, that is, negative and positive respectively (keep in mind this is a negative dimension referring to concerns). The levels of significance in half the models are 1% ($p<0.01$) and half of them at around 5% (p-value varies from 0.03 to 0.07). The importance is also relatively high with coefficients ranging from -1.5 to -2.3 for the HHI and 1.1 to 2.1 for the square term.

Regarding the control variables, risk and profits are significantly and strongly affecting environment concern. Risk is consistently (i.e. in all models) highly significant ($p<0.001$) with coefficients varying form 1.4 to 1.8. Profits are also highly significant with $p<0.001$ in the 3 models and only in one model $p=0.084$ (i.e. 10% level of significance). Importance of the effect is also considerable (coefficient in three models is in the -1.6 to 2.2 area and only in one model –the one that had lower significance– the coefficient is -0.8). As we can see the signs are the expected ones. Risk is positively related with concerns whereas profits not. In other words the more the risk the worse the environmental performance and the higher the profits the better.

The only control variable that has the "wrong" sign is the size variable. As in the previous case of the environment strength here also size is negatively related with environmental performance. Specifically, size reaches a significance level of 1% ($p<0.001$), but still its importance remains low (coefficient 0.3-0.4).

Product Strength: (Table 3i)

The product dimension of the KLD database exhibits a consistent relation with market competition. Both strengths and concerns are strongly related with changing competition levels.

In the case of the product strength we see that both HHI and HHI^2 reach a significant level of 1% (p-value<0.001 consistently in all models). The signs are in the predicted direction, that is, positive for HHI and negative for HHI^2 which means as competition increases social performance of the firms (with respect to product dimension in this case) increases at a decreasing rate. The size of the coefficients shows that the competition effect on product is very strong (>3.0) for both variables, suggesting a strong curvature.

From the control variables risk is highly significant (p<0.001 consistently in all models) and size is significant at the 10% level (p-value oscillates between 0.053 and 0.098 across models). Their relative importance also differs. Risk is important at moderate levels (coefficient in the -1.2 vicinity) whereas the importance of size is almost negligible (coefficient < -0.04). Interestingly profits are not significant in any of the models.

Product Concern: (Table 3j)

The 'concerns' part of the product dimension is also strongly affected and explained by competition but at a lesser extent than the 'strengths' counterpart. HHI is highly significant (1% level) in two models and less significant (10% level) in the other two. The importance is also relatively high (not as high as in the previous case) with a coefficient of -2.2 in the two high significance models and -1.3 in the two less

significance models. HHI^2 is highly significant in the same two models where HHI reaches also high levels of significance (1% level) but seems to lose significance in the other two models where HHI reaches a 10% level significance (p=0.21). The coefficient shows moderate to high levels of importance (1.7 where HHI2 reaches significance, and 0.7 where it does not).

Risk and size are the control variables that reach a 5% and 1% levels of significance respectively. Only in one model risk is insignificant (p=0.153). Their importance is moderate to small. The coefficients for risk are in the 0.5 and for size between 0.3-0.4. Interestingly size has not the expected sign. The positive sign means that the larger the firm the more the product concerns (i.e. the less social performance with respect to product dimension). Risk has the anticipated sign which is positively related with negative performance. Profits are not significant except in one model where they reach a 5% level and a moderate importance (coefficient =1.0) but they also have the "wrong" sign. That is, the more the profits the more the negative performance. However, this was the result of only one model out of the four. From the above results we can see that the four models provide similar results. Consequently one model is chosen for the rest more detailed analysis. Tables 4a, 4b summarize all important results of the 10 regressions (the 5 'strength' and the 5 'concern' screenings).

5.2. Part B: Industry effects

Now I move to the second phase of the results. For the 10 dependent variables I control for the industry by grouping firms of the same and similar industries together based on the 4-digit SIC code. There are 24 industry groups. It would be difficult to break

the sample down to more industries as the number of firms per industry would be very small jeopardizing thus the results. As already argued with a sample of 2020 firms (1946 without missing data) it was impossible to break them down to 4-digit SIC without any grouping. Econometrically speaking it would not be possible to get any statistically significant and meaningful results. The sample size would be too small for each industry, sometimes only 4 firms per industry (1 firm times 4 years) the number of industries and the sample size. Arbitrary grouping took place based on the proximity of different industries.

A total of 24 industries are considered a satisfying number given the sample size. Still I expect to lose some degrees of freedom I got so far as the sample size per industry gets much smaller (80 firms on average per industry). This is one of the reasons in Part A I reported results without controlling for industry when the sample size is adequate to show interesting results. The most important reason is to se how industry affects CSP. It will be clearer now how important are the industry effects that the literature alludes to (Griffin & Mahon, 1997; Waddock & Graves 1997) but it is so hard to control for due to usually small samples.

I broke the industries down in such a way that I don't have really big variance in the number of firms in them. For instance I didn't want to have an industry with, say 400 firms and another with 8 as it was the case in a first attempt. However the tobacco industry has only eight members (i.e. two members for four years), but I wanted to keep it separately as it was difficult to group it with any other industry.

In this section I report only the major changes that happened when I control for the 24 industries. Industry effects are very important (i.e. coefficients of many of the

dummy variables are significant except the case of community concern) and generally absorb part of the variation of the other variables. Accordingly the pseudo R^2 increases considerably especially in the case of Environment and Product dimensions. Results are reported at Tables 3a-j model five.

Community Strength: the HHI and HHI^2 lose significance and become marginally significant (p=0.13 and 0.11 respectively).

Community Concern: An interesting change is that although community concern is the only case where industry effects are not significant, HHI and HHI^2 reach significance levels of 1% but they change sign (remember they were both insignificant in the previous analysis)! This means that as competition increases firms do not perform well with respect to community but at a decreasing rate, that is, in high levels of competition they pick up and they perform much better. It is a U-shaped relation.

Diversity Strength: HHI and HHI^2 still not significant but they switch sign and they get the "right" one.

Diversity Concern: Profits lose significance although they keep the expected negative sign.

Employee Strength: Risk loses significance. However the sign remains and the magnitude of the coefficient decreases a little.

Employee Concern: no change. However, when the HHI^2 term was eliminated from the regression HHI became marginally significant (p=0.101) with moderate to little importance (coefficient -0.3).

Environment Strength: HHI remains insignificant but HHI^2 becomes significant at the 10% level (p=0.092) which suggests an inverted U-shape curve. Risk also loses

significance and changes sign from positive to negative. Size slightly increases importance but still it is very low. Profits also increase in importance and still they have the reverse than expected sign.

Environment Concern: HHI and HHI^2 lose significance although their signs remain the same. Profits double their importance (coefficient -3.0) and size also increase its importance a little bit keeping the same "wrong" sign, that is, the bigger the firm the worse.

Product Strength: no change.

Product Concern: Profits become significant at the 1% level and their importance is considerable (coefficient -1.2), that is, the more the profits, the less the concerns which is the expected direction.

Tables 5a and 5b summarize these results and Table 6 summarizes the industry differences. The industry of reference is the software industry so all coefficients and p-values are relative and compared to the software industry.

5.3. Part C: Report on industry characteristics

Table 6 shows in summary differences in social performance in strengths and concerns of all five dimensions between all industries. The industry of reference is the software industry. As Table 6 is very eloquent I am not going to report in detail on where each industry performs better or worse. However I will comment on some interesting findings and then in the next chapter (discussion) I will synthesize the results and put them in perspective.

Compared with the software industry the mining and oil industry for example demonstrate a higher social performance in community strength and environmental strength but worse in diversity strength, employment concern, both product screens, and much worse in environmental concern. What may look interesting and even contradictory is that the same industry performs good and bad at the same time with respect to environment, that is, it shows at the same time more strengths but also more concerns This should not be troubling to us because if we take a close look at the specific indicators of the environment dimension we can see that these indicators are different between strengths and concerns. This means that a firm can perform relatively well in the strength indicators and bad in the concern indicators at the same time.

For example, in the case of mining and oil industry, firms may engage in recycling, communications or other strength (see Appendix for exact definitions of each indicator of the KLD ratings), and at the same time perform relatively poorly in concerns like hazardous waste, substantial emissions, climate change, and other concern (environmental accident, which is very likely for oil industry).

It is interesting to see that, with respect to environment, many industries which perform poorly in one category (concerns), perform better in the other (strengths). A characteristic example is the utilities. This industry does well in environment strength and poorly in environment concern. This means the utility industry has relatively more environmental strengths but at the same time it has also more environmental concerns than the software industry. It can also be the other way around. The banking industry, for instance, performs very poorly in the strengths division of environment but really well in the concerns division. This may be the case because by definition mining and oil

industries have a lot environmental problems and they try to do their best where they can but at the same time due to the nature of the industry they perform bad relatively to other environmentally neutral industries like banks. Banks and Insurance on the other hand that do not need to take any environmental action probably do not have any concerns which make them appear as doing very well in the concerns division. At the same time they do not take any action toward any strength thus appearing to be performing relatively worse in that domain.

Another observation to make is that there are many negative signs in the case of diversity strength. The dimension of diversity, particularly the division of strength, in the KLD ratings is related to women-minorities in the board of directors as well in the work force, family benefits, employment of the disabled, progressive gay/lesbian polices etc. If we see what the industries are that exhibit highly poor performance in these issues we are going to count among them the following: mining and petroleum, construction, metals and steel, heavy machinery, and transportation (railroad and trucks) among others. Indeed these are not the type of industries that one would expect to be the leader in the above mentioned issues. By nature of many of these heavy jobs one cannot expect to find many women or disabled workers as we can easily see in other industries like computer, software, publishing, or grocery stores.

Table 1: Descriptive Statistics of Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Year	2020	1997	2000		
SIC code	2020	1000	9997		
Firms per each 4-digit SIC code in Compustat	2020	1	603	79.54	127.08
HHI[1]	2020	.00	.987	.80	.18
HHI square	2020	.00	.97	.67	.23
Total Sales [2]	1954	40.73	206083.00	9303.15	17881.97
Ln of Sales	1954	3.71	12.27	8.26	1.36
Total Assets	1953	29.35	675072.00	19918.08	52784.85
Ln of Total Assets	1953	3.38	13.42	8.51	1.66
Long Term Debt	1947	.00	362360.00	3866.55	16700.56
Risk (Long term Debt/Total Assets)	1947	.00	.82	.19	.14
Net Income	1954	-3339.00	22071.00	632.03	1396.66
Return on Assets (Income/Total Assets)	1953	-.97	.53	.057	.078
Return on Sales (Income/Sales)	1954	-1.38	1.10	.071	.097
Community strength	2010	0	4	.40	.71
Community concern	2010	0	2	.08	.28
Diversity strength	2010	0	7	.88	1.16
Diversity concern	2010	0	2	.20	.40
Employment strength	2010	0	4	.58	.76
Employment concern	2010	0	3	.26	.48
Environment strength	2009	0	4	.32	.60
Environment concern	2010	0	6	.43	.91
Product strength	2010	0	2	.21	.43
Product concern	2010	0	4	.36	.67
Valid N (list wise)	1946				

[1] This is the value of HHI after being subtracted from 1 so, the higher the value the more the competition.
[2] All dollar figures are in millions.

Table 2: Industry dummy variables description

SIC code	Industry Name	Number of firms	Percent	Cumulative percentage
1000-1399	Mines, Petroleum	88	4.4	4.4
1500-1699	Construction	24	1.2	5.5
2000-2099	Food	80	4.0	9.5
2100-2199	Tobacco	8	0.4	9.9
2200-2399	Textiles, Apparel	52	2.6	12.5
2400-2699	Forest products, paper	96	4.8	17.2
2700-2799	Publishing	80	4.0	21.2
2800-3299	Chemicals, Pharmaceuticals	196	9.7	30.9
3300-3499	Metals, Steel	76	3.8	34.7
3500-3569	Heavy Machinery	84	4.2	38.8
3570-3599	Computers	48	2.4	41.2
3600-3699	Appliances, Semiconductors	128	6.3	47.5
3700-3799	Autos, Aircraft, Ships	80	4.0	51.2
3800-3999	Other Machinery (hospital, photo)	104	5.1	56.6
4000-4799	Transportation	64	3.2	59.8
4800-4899	Telecommunications	48	2.4	62.2
4900-4999	Utilities	152	7.5	69.7
5000-5299	Wholesale	96	4.8	74.5
5300-5799	Retail	96	4.8	79.2
5800-5899	Eating places	32	1.6	80.8
6000-6299	Bank, Financial Services	144	7.1	87.9
6300-6499	Insurance	108	5.3	93.3
7000-7363	Hotel, Entertainment	80	4.0	97.2
7370-7399	Software	56	2.8	100
Total		2020	100	

Table 3a: Community strength regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	+	1.455 (.059)*	1.454 (.059)*	.557 (.456)	.604 (.421)	1.204 (.132)
HHI^2	-	-1.300 (.029)**	-1.296 (.029)**	-.348 (.548)	-.402 (.489)	-1.062 (.114)
Control variables						
Risk	-	-.475 (.032)**	-.538 (.014)**	-.414 (.062)*	-.336 (.124)	-.422 (.081)*
Size:						
Ln Assets	+	.234 (.000)***	.233 (.000)***			.233 (.000)***
Ln Sales	+			.252 (.000)***	.252 (.000)***	
Financial performance						
ROA	+	.398 (.347)		-.290 (.465)		
ROS	+		-.148 (.641)		.418 (.204)	-.505 (.122)
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .08 for the 4 models without the industry dummies, .15 for model 5.

Table 3b: Community concern regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	-	1.491 (.233)	1.264 (.307)	.274 (.814)	.068 (.953)	4.102 (.008)***
HHI^2	+	-1.236 (.192)	-.973 (.300)	.090 (.919)	-.317 (.721)	-3.526 (.003)***
Control variables						
Risk	+	1.552 (.000)***	1.595 (.000)***	1.681 (.000)***	1.817 (.000)***	1.044 (.011)**
Size:						
Ln Assets	-	.340 (.000)***	.367 (.000)***			.427 (.000)***
Ln Sales	-			.365 (.000)***	.357 (.000)***	
Financial performance						
ROA	-	-1.837 (.005)***		-2.621 (.000)***		-1.806 (.018)**
ROS	-		-1.700 (.000)***		-.878 (.000)***	
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .13 for the 4 models without the industry dummies, .29 for model 5.

Table 3c: Diversity strength regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	+	-.005 (.994)	.025 (.970)	-.566 (.391)	-.500 (.449)	.484 (.503)
HHI^2	-	-.026 (.961)	-.056 (.914)	.611 (.233)	.535 (.298)	-.497 (.389)
Control variables						
Risk	-	-.569 (.004)***	-.630 (.001)***	-.509 (.009)***	-.468 (.015)**	-.761 (.001)***
Size:						
Ln Assets	+	.190 (.000)***	.188 (.000)***			.218 (.000)***
Ln Sales	+			.226 (.000)***	.225 (.000)***	
Financial performance						
ROA	+	.528 (.144)		.070 (.843)		.004 (.992)
ROS	+		.059 (.831)		.458 (.105)	
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .04 for the 4 models without the industry dummies, .09 for model 5.

Table 3d: Diversity concern regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	-	-.134 (.876)	-.230 (.789)	.028 (.974)	-.132 (.878)	.110 (.907)
HHI^2	+	.162 (.808)	.270 (.686)	.031 (.963)	-.135 (.839)	.007 (.992)
Control variables						
Risk	+	-.655 (.008)***	-.607 (.014)**	-.665 (.007)***	-.632 (.009)***	-.464 (.087)*
Size:						
Ln Assets	-	-.063 (.002)***	-.055 (.007)***			
Ln Sales	-			-.087 (.000)***	-.086 (.000)***	-.139 (.000)***
Financial performance						
ROA	-	-.946 (.021)**		-.814 (.047)**		
ROS	-		-.586 (.084)*		-.675 (.042)**	-.380 (.288)
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .02 for the 4 models without the industry dummies, .08 for model 5.

Table 3e: Employee strength regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	+	.272 (.694)	.313 (.651)	.128 (.851)	.192 (.779)	.026 (.972)
HHI^2	-	-.319 (.553)	-.361 (.503)	-.137 (.796)	.203 (.703)	-.038 (.949)
Control variables						
Risk	-	-.559 (.005)***	-.632 (.001)***	-.539 (.007)***	-.584 (.003)***	-.280 (.201)
Size:						
Ln Assets	+	.064 (.000)***	.060 (.000)***			
Ln Sales	+			.084 (.000)***	.084 (.000)***	.076 (.000)***
Financial performance						
ROA	+	.623 (.086)*		.476 (.184)		
ROS	+		.073 (.796)		.192 (.495)	.267 (.369)
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .01 for the 4 models without the industry dummies, .08 for model 5.

Table 3f: Employee concern regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	-	1.054 (.442)	.787 (.564)	.567 (.468)	.709 (.599)	.453 (.591)
HHI^2	+	-1.394 (.194)	-1.079 (.313)	-.747 (.220)	-.925 (.381)	-.628 (.357)
Control variables						
Risk	+	.303 (.447)	.249 (.533)	.160 (.485)	.289 (.470)	.004 (.987)
Size:						
Ln Assets	-	.042 (.200)	.071 (.036)**			
Ln Sales	-			.080 (.000)***	.143 (.000)***	.139 (.001)***
Financial performance						
ROA	-	-1.794 (.010)***		-1.198 (.003)***		-1.481 (.001)***
ROS	-		-2.434 (.000)***		-2.361 (.000)***	
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .02 for the 4 models without the industry dummies, .06 for model 5.

Table 3g: Environment strength regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	+	-.384 (.603)	-.495 (.501)	-.434 (.553)	-.589 (.419)	.742 (.382)
HHI^2	-	-.133 (.819)	-.000 (.999)	-.047 (.935)	.124 (.829)	-1.164 (.092)*
Control variables						
Risk	-	.703 (.001)***	.685 (.002)***	.714 (.001)***	.728 (.001)***	-.264 (.201)
Size:						
Ln Assets	+	.036 (.051)*	.046 (.012)**			
Ln Sales	+			.065 (.004)***	.066 (.003)***	.133 (.000)***
Financial performance						
ROA	+	-.780 (.047)**		-.868 (.027)**		
ROS	+		-1.005 (.002)***		-.938 (.003)***	-1.531 (.001)***
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .02 for the 4 models without the industry dummies, .20 for model 5.

Table 3h: Environment concern regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	-	-1.482 (.052)*	-1.656 (.030)**	-2.047 (.007)***	-2.327 (.002)***	-.572 (.534)
HHI^2	+	1.072 (.074)*	1.295 (.031)**	1.866 (.002)***	2.185 (.000)***	.695 (.354)
Control variables						
Risk	+	1.528 (.000)***	1.443 (.000)***	1.810 (.000)***	1.837 (.000)***	1.310 (.000)***
Size:						
Ln Assets	-	.266 (.000)***	.293 (.000)***			
Ln Sales	-			.416 (.000)***	.422 (.000)***	.665 (.000)***
Financial performance						
ROA	-	-.787 (.084)*		-1.618 (.000)***		-3.032 (.000)***
ROS	-		-2.204 (.000)***		-1.930 (.000)***	
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .12 for the 4 models without the industry dummies, .34 for model 5.

Table 3i: Product strength regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	+	3.436 (.000)***	3.472 (.000)***	3.299 (.000)***	3.359 (.000)***	3.112 (.001)***
HHI^2	-	-3.256 (.000)***	-3.297 (.000)***	-3.114 (.000)***	-3.179 (.000)***	-2.906 (.000)***
Control variables						
Risk	-	-1.215 (.000)***	-1.159 (.000)***	-1.195 (.000)***	-1.122 (.000)***	-1.061 (.000)***
Size:						
Ln Assets	+	.038 (.053)*	.035 (.074)*			
Ln Sales	+			.041 (.085)*	.039 (.098)*	.048 (.076)*
Financial performance						
ROA	+	-.065 (.878)		-.137 (.744)		.021 (.966)
ROS	+		.312 (.376)		.392 (.267)	
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .03 for the 4 models without the industry dummies, .13 for model 5.

Table 3j: Product concern regression

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables	Expected sign	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value	Coefficient P-value
HHI	-	-1.306 (.077)*	-1.293 (.080)*	-2.171 (.003)***	-2.125 (.004)***	-2.348 (.005)***
HHI^2	+	.732 (.210)	.737 (.207)	1.785 (.002)***	1.731 (.003)***	1.974 (.004)***
Control variables						
Risk	+	.476 (.039)**	.322 (.153)	.589 (.013)**	.612 (.009)***	.485 (.070)*
Size:						
Ln Assets	-	.326 (.000)***	.323 (.000)***			
Ln Sales	-			.451 (.000)***	.451 (.000)***	.533 (.000)***
Financial performance						
ROA	-	.996 (.040)**		.079 (.864)		
ROS	-		-.415 (.222)		.313 (.403)	-1.248 (.010)**
Industry effects		No	No	No	No	Yes

Significance levels: * 10%, ** 5%, *** 1%
Pseudo R^2: around .13 for the 4 models without the industry dummies, .20 for model 5.

Table 4a: 'Strength' regression summary

Variables	**Dependent variables**	**Community**	**Diversity**	**Employee**	**Environment**	**Product**
Independent variables	Expected sign					
HHI	+	+ * 3	o	+ o 2	- o 3	+ *** 5
HHI^2	-	- * 3	o	- o 2	o	- *** 5
Control variables						
Risk	-	- ** 3	- *** 3	- *** 3	+ *** 3	- *** 4
Size	+	+ *** 2	- *** 3	+ *** 1	+ ** 1	+ * 1
Financial performance	+	o	+ o 2	+ o 2	- ** 3	o

Significance levels: * 10%, ** 5%, *** 1%, 'o' not significant.
Importance levels: 1very small, 2 small, 3 moderate, 4 strong, 5very strong.

Table 4b: 'Concern' regression summary

Variables	**Dependent variables**	**Community**	**Diversity**	**Employee**	**Environment**	**Product**
Independent variables	Expected sign					
HHI	-	+ o 2	o	o	- ** 4	- ** 4
HHI^2	+	- o 2	o	o	+ ** 4	+ ** 4
Control variables						
Risk	+	+ *** 4	- *** 3	o	+ *** 4	+ ** 3
Size	-	+ *** 2	- *** 1	- *** 1	+ *** 3	+ *** 3
Financial performance	-	- *** 4	- ** 3	- *** 4	- *** 4	o

Significance levels: * 10%, ** 5%, *** 1%, 'o' not significant.
Importance levels: 1very small, 2 small, 3 moderate, 4 strong, 5very strong.

Table 5a: 'Strength' regression summary with industry dummies

Variables	**Dependent variables**	**Community**	**Diversity**	**Employee**	**Environment**	**Product**
Independent variables	Expected sign					
HHI	+	+ o 3	o	o	+ o 3	+ *** 5
HHI^2	-	- o 3	o	o	- * 4	- *** 5
Control variables						
Risk	-	- * 3	- *** 3	- o 3	- o 2	- *** 3
Size	+	+ *** 2	+ *** 2	+ *** 1	+ *** 2	+ * 1
Financial performance	+	- o 3	o	+ o 2	- *** 4	o

Significance levels: * 10%, ** 5%, *** 1%, 'o' not significant.
Importance levels: 1very small, 2 small, 3 moderate, 4 strong, 5very strong.

Table 5b: 'Concern' regression summary with industry dummies

Variables	**Dependent variables**	**Community**	**Diversity**	**Employee**	**Environment**	**Product**
Independent variables	Expected sign					
HHI	-	+ *** 5	o	o	- o 3	- *** 4
HHI^2	+	- *** 5	o	o	+ o 3	+ *** 4
Control variables						
Risk	+	+ ** 4	- * 3	o	+ *** 4	+ * 3
Size	-	+ *** 3	- *** 2	+ *** 1	+ *** 3	+ *** 3
Financial performance	-	- ** 4	- o 3	- *** 4	+ *** 5	o

Significance levels: * 10%, ** 5%, *** 1%, 'o' not significant.
Importance levels: 1very small, 2 small, 3 moderate, 4 strong, 5very strong.

Table 6: How different industries perform socially compared to the Software industry

	Comm.		Diversity		Empl.		Environ.		Product	
Industry	S	C	S	C	S	C	S	C	S	C
Mines, Petroleum	+		--			+	+	++	-	+
Construction			--		--					+
Food	+				-			+	--	+
Tobacco	+		--						--	++
Textiles, Apparel	+				--					
Forest products, paper			--				+	++		+
Publishing				--	-				+	
Chemicals, Pharmaceuticals	+		-	-			+	++		++
Metals, Steel			--			+	+	++		+
Heavy Machinery			--		-			+		
Computers								-		-
Appliances, Semiconductors			-				+	+	+	
Autos, Aircraft, Ships			-	+				++		
Other Machinery	+						+	++	+	+
Transportation	-		--					+		+
Telecommunications			-		-	+		-		
Utilities			-	-	-		++	++	-	
Wholesale			-		-	+	-			
Retail					-	+	-	--		
Eating places						-				
Bank, Financial Services	+		-				--	--		
Insurance			-	-	-		--	--		+
Hotel, Entertainment			-	-	-		--		-	+
Software				Industry of reference						

One sign: relatively small deviation
Two signs: stronger deviation

CHAPTER 6: DISCUSSION

The objective of this study is to examine the relationship between CSP and competition. The study is motivated by the view of many scholars that Friedman's argument, which is that firms have no other responsibility than to maximize profits, is contrary to the goal of promoting socially responsible behavior of businesses. My main argument is that a correct understanding of Friedman's position can be beneficial to scholars who want to build a better CSP theory.

First, I find it interesting that scholars recognize that Friedman agrees on three of the four dimensions of Corporate Social Responsibility (CSR) proposed by Carroll (1999). Namely, he agrees that firms have an economic, legal, and ethical responsibility. Controversy appears to focus on the fourth dimension of responsibility, which is the discretion of the manager to do good things for society rather than merely earn a profit. Importantly, Friedman is not against doing good as long as it is also in the interest of the business, which he calls good management rather than social responsibility.

Second, I examined the financial performance (FP) and social performance (SP) literature and found a gap in the theory that links FP with SP link. The gap is that the FP-SP link has been studied out of the context of competition. FP is argued to be positively related with SP and at the same time SP is considered a differentiation strategy for firms to gain competitive edge. But the incentive to differentiate – which comes from competition – is largely ignored.

This gap can be bridged by Friedman's economic theory. The idea is that CSP is narrowly focused on the relation between financial resources and social performance but

excludes a consideration of the market environment. This is why CSP theory suffers both theoretically and empirically, often producing contradictory results. Although most of the research has shown a positive relation between FP and SP, there are also a few empirical studies which demonstrate a negative relation. The literature has recognized both the theoretical weakness as well as the methodological problems of this research. However it has not pointed to a solution.

My study proposes a solution. The solution is based on a reconsideration of Milton Friedman's work. CSP literature recognizes that firms invest in social performance because they want to gain a competitive edge. The literature also argues that by doing so firms increase their profits, thus producing the positive relation between FP-SP. The problem is that this is half of the picture. What makes firms willing to invest in gaining competitive edge? This is where Friedman's theory on competition comes to reveal the other half and complete the picture.

The first force is incentives. Competition is what gives firms the incentive to invest in social performance. Competition stimulates firms to produce more efficiently, to improve quality, to invest in their reputation as an attempt to attract consumers, investors, and suppliers in order to gain competitive edge and thus increase their profits. This is one force that affects social performance.

Resources are the other force affecting social performance. Firms need resources in order to engage in CSP activities. Doing good, which is what the CSP scholars expect of firms, takes time, money and labor, resources that firms control. It is because firms have extensive control over resources that many people argue firms should engage in

socially responsible actions. If firms did not have resources for CSR, then firms would not likely be expected to do these things.

Friedman's writings on CSR provide a means of merging these two forces – incentives and resources – in a way that provides richer theoretical understanding of CSR. The key insight from Friedman is his emphasis on competition. As stated above, competition is key to providing incentives. However, as competition increases economic theory says that profits decrease. As a result firms that want to invest in social performance are constrained in doing so by less available resources. As competition increases the incentive for CSP increases, but the resource constraint also increases. These two contradictory forces will shape the final outcome. Combining the incentive and resource forces results in my prediction that there will be a curvilinear relationship between FP and SP, meaning that increases in competition will result in greater SP, but at a decreasing rate. This will be the case up to a point after which further increase in competition will result in less SP.

The empirical part of the study provided support of the theoretical analysis. Generally, as competition increases social performance of firms increase but up to a point. The reason is that as competition goes up economic profits go down and firms will not have the necessary resources to devote in social performance. At some point the curve slopes downward, that is, social performance decreases as the resources constrain becomes stronger than the incentives positive force. The results show that CSP gets maximized at some level of competition and then it decreases as competition increases further. Based on the coefficients of HHI and HHI^2 the maximum of CSP varies among

different regressions run as well as CSP dimensions between 0.5 and 0.85 with an average at around 0.6.[5]

My empirical findings also show that competition affects mostly those types of CSP activities that are relatively crucial to the firm from a stakeholder point of view (Freeman 1984). These include stakeholders that really can affect firms' survival, such as consumers, investors, suppliers, or the media (Freeman 1984; Donaldson & Preston 1995; Mitchell, Agle & Wood 1997). Firms do not want to disregard these stakeholders. As competition increases the incentives are very strong for firms to be responsive toward them (i.e. to invest in social performance related to these stakeholders).

For example, Product is a dimension of CSP directly related to consumers, a major stakeholder group. The same is true for the Community dimension. The Environment dimension is not directly related to a specific stakeholder group but closely related with many important stakeholders through a community's, special interest groups' and media's attention. A firm that has a negative environmental record may attract government's attention in the form of fines or other severe penalties. Media coverage may drive customers away from doing business with the particular firm, or cause investors (stockholders) to withdraw their money and invest in more environmentally conscious firms.

The strong tradeoff between incentives and resources is clearly shown in these dimensions of CSP (i.e. community, environment, and product) because they require relatively more resources than dimensions with relatively less resource requirements, such as the Diversity dimension. Product, Environment, and Community are the three of

[5] To calculate the HHI that corresponds to the maximum CSP I take the first order conditions of the CSP function, that is, β_1 HHI + β_2 HHI^2. Taking the first order conditions (first derivative with respect to HHI) it becomes: $\beta_1 + 2\beta_2$ HHI = 0 → HHI* = $-\beta_1 / 2\beta_2$

the five CSP dimensions where competition strongly affects social performance. As competition increases social performance initially increases at a decreasing rate and then decreases. Especially Product and Environment demonstrate the strongest relationship with competition levels followed by Community.

Research and development (R&D) is one indicator of the Product dimension and one of the major resource-absorbing activities for a competitive firm. Data from COMPUSTAT show that R&D represents in value a significant part of the firms' net income and, sometimes, it may be even larger than the firm's income. Indeed the empirical findings support a strong curvilinear relationship between competition and Product performance. Strong incentives from competition to engage in R&D are confronted by a strong resource decrease due to high competition.

Pollution prevention, recycling, and alternative fuels are just some of the indicators for the Environment dimension. Investment in creating or purchasing the necessary technology for these activities requires a substantial amount of resources. I find that as competition increases, firms' incentives to invest in such technologies also increase. However, since increases in competition usually constrain firm profits, the result is that firms have fewer resources available for pollution prevention and other environmental activities as competition intensifies. The findings also support the argument in the case of the natural environment.

Similarly, in the case of Community findings support the tradeoff argument between incentives and resources, although not to the same extent as in the case of Product and Environment. One reason may be that Community is not as readily defined as a major stakeholder group as are the other the Product and Environment dimensions

and so competition does not provide companies as strong incentives to invest in community as for product and environment. This is not to say that it does not provide any incentives at all. Community is on one hand related to stakeholders such as part of employees, part of customers (who may live in the community the company operates) and on the other hand it is indirectly related through its reputation to a wide range of investors and consumers.

A second reason why competition is more strongly related with Environment than Community may be that community projects are less resource demanding than product or environment. Community involvement has a local nature whereas product and environment investments may require higher financial resources. For instance a multinational firm with subsidiaries in many different places may leave community issues to the local management where as environmental policies may be drafted in the headquarters and require higher investments for all subsidiaries. An example would be a multinational oil company. Investment in anti-pollution technology such as special filters or procedures, or alternative fuels should be made to apply to all subsidiaries whereas community projects may be left to the discretion of the local managers depending on the special needs of the specific community in which each subsidiary is located.

A final, but not less important, reason may be the fact that environment is highly industry specific. When I controlled for industry effects, competition lost much of the significance for the environment case suggesting that it was absorbed by the strong industry effects. Community is a dimension that is less industry specific. All industries can engage in community activities whereas only such industries that by their nature pollute are going to invest considerable amounts of money towards a better

environmental performance. This means that when controlling for industry effects all industries that do not have any particular environmental issues are not going to be much affected by competition decreasing the significance of the results.

I find that the Diversity dimension is not affected by competition. Indeed if we check the activities included under the rubric 'diversity' we see that these activities (representation of women and minorities in the workforce and/or the board of directors, among others) do not necessarily require resources in the same sense that Product or Environment attributes do. One possibility is that the incentives to engage in Diversity activities are more ideology-driven than competition (this also explains the low pseudo R^2). They mostly depend on the manager's idiosyncrasy and corporate culture rather than market conditions. It is true that they may affect firm's reputation but probably not to the extent that community, environment, and product related activities can.

A bit more intriguing is the finding that employee relations are not significantly affected by competition. Previous research has shown evidence that good firms (i.e. socially responsible) attract high quality workforce and that firms may use social performance as a signaling device to attract prospective employees (Turban & Greening 1997; Greening & Turban 2000). According to this literature, I would have expected competition to offer firms the incentive to improve employee relations as a tool to make the firm attractive to higher quality employees.

One explanation for this unexpected result may be the following. Firms that invest in other dimensions of CSP may indeed become attractive to potential employees so that they inflict competition among employees. As the supply of potential employees increase it may be logical to think that the benefits the firm offers decline. Definitely more

research is required in this area to better clarify the relation of competition and employee relations probably in combination to the social performance in the other dimensions.

Finally, results on the differences among industries with respect to their social performance show that industry specific effects are not to be disregarded. It is very interesting that industries that do relatively better in one dimension may do relatively worse in another. Not only that but also within the same dimension there are many industries that perform better in the strengths division and at the same time worse in the concerns division. It was explained in the previous chapter that this case, which mostly happens in the environment dimension, shows how important industry effects are. Mines and oil, forest products, chemicals-pharmaceuticals, metals-steel, machinery, utilities are industries that by their nature are not environmentally friendly. Accordingly, even though they make considerable investments (thus the higher strengths relatively to other environmentally neutral industries) they still pollute, thus doing worse relatively again to environment neutral industries.

What these big differences among industries clearly show is that we need to refine research at the industry level or at least group them based on some common characteristics. For example we should not mix environmentally "sensitive" industries with neutral ones.

6.1. Contribution

This study first makes clear a theoretical relationship between competition and SP that has remained undefined and elusive in the CSP literature. Second, it provides empirical evidence of a curvilinear relationship between competition and SP. In

accomplishing these two objectives I show that Friedman's ideas are not as antithetical to those of CSR scholars as many believe.

Friedman's emphasis on competition is key to understanding the relationship between FP and SP. Therefore, CSR scholars should reexamine Friedman's work in light of these findings.

Also, the empirical findings of this study suggest that industry effects are important. To better explore and understand firms' differences in social performance and its relationships to financial performance, size, risk, or other firm characteristics we need to narrow the research down to the industry level. Much of the CSP research suffers by the aggregate level of research. Lack of inclusion of industry effects really throw results off, blur the picture and ultimately confuse the researcher.

6.2. Limitations

The KLD database is considered to be the best measure so far for social performance (Graves & Waddock 1994; Waddock & Graves 1997). However, KLD is not without problems especially when used across industries and across different firm sizes. KLD uses some general indicators applied to all industries and all firms. Industry specific effects and firm size are not appropriately weighed (Entine 2003). There is a need for the creation of an industry specific KLD. Otherwise the inherent problems of the KLD database will always causes problems in empirical analyses.

As discussed above firms in industries that by their nature pollute may appear a priori to be "bad" firms although their investments to environmental friendly practices

may be greater than those firms that do not pollute so they do not need to make any investment.

Also, the size of firms can result in a bias. We saw big firms doing better in the strengths screen but worse in the concern screens as discussed above in the product dimension. KLD indicators are used regardless the size of the firm. In many of the indicators the threshold to get form 0 to 1 either in strengths or concerns is monetary. What happens is that big firms can more easily reach that threshold (i.e. fines for hazardous waste, R&D, fines for product safety issues etc). This may have biased the size estimates of the model. Size is shown to be in most cases very significant and big firms are shown to have both more strengths and concerns.

A last problem with the KLD is that so far it covered only 650 firms. This did not allow for larger firm sample (Harrison & Freeman 1999). This was a big problem in the CSP empirical literature in that it impeded by a good control for industry effects. As I argued throughout this study it is difficult to control for industries if you have only a few firms per industry. The good news for future research is that KLD since 2002 collects data form over 1500 firms and since 2004 over 3000 firms. That will allow for better industry control and will increase the robustness of the results.

Another important limitation of the study was the calculation of the Herfindahl-Hirschman index. The index was calculated form data collected from COMPUSTAT. Unfortunately there were a large number of firms with missing data on sales and that must have skewed the HHI upwards (indicating less competition than what really is). Once there is no reason to believe the missing firms had specific characteristics in some

industries than in others, I believe the use of the HHI was homogeneously skewed for all industries minimizing the problem.

6.3. Future research

Based on these limitations as well as the contribution of this study there are many lines of potential future research. That KLD increased the number of firms they included in their database on social performance allows for more detailed industry effect analysis. This study tried to make the first step controlling for as many industries as possible, but this was not without the disadvantage of getting a small number of firms per industry. One idea is to conduct a similar research project for a specific industry rather than for multiple industries as was the case in this study. How does competition affect specific industries and how do firms in these specific industries react to the two major factors of social performance (i.e. incentives and resources)?

This study suggested that Friedman and CSP are not in opposite camps, but rather they complement each other. CSP scholars should include Friedman in their research agendas. Doing so will result in future research not suffering from confusion and non-clarity of hypotheses.

I argued that market frictions (transaction costs) are one reason that competition affects CSP positively but at a decreasing rate. It would be interesting to test that. Environments with better information flow and less transaction costs are expected to make competition's positive effect stronger by attenuating the decreasing rate (i.e. making the HHI^2 weaker). It is possible to test it comparing countries albeit difficult because of a number of factors that are difficult to be controlled for. For instance, the

KLD database measures US firms. In other countries they have come up with different measures. Unless there is a way to compare the different measures or to create a common one, it would be difficult to conduct international studies. If a common measure is to be created we need to control for cultural differences that may affect firms' behavior in several indicators across countries.

However it is much easier to test the above hypothesis within the same country. We can pick different industries where the degree of information flow to the public differs significantly and test how this impacts the relationship between competition and social performance. Friedman urged for more competition as a way to increase social welfare. How transaction costs affect this relationship needs a much more refined analysis than the one presented here.

CHAPTER 7: CONCLUSION

The purpose of this study is to examine the relationship between competition and corporate social performance (CSP). This study showed that CSP theory can use Milton Friedman to better explain the relationship between financial and social performance of the firms. It was argued that competition is an important factor shaping social performance. The empirical results show that competition affects social performance in 2 ways: One direct positive way creating the incentives for firms to differentiate and one indirect negative way through profits. As competition increases profits decrease depriving firms from vital resources to devote in social performance.

This research adds to the existent literature by demonstrating the importance of incentives to CSP. Previous research on CSP implicitly suggested that the relationship between CSP and competition was governed by the resources available to the firm. My study confirmed this, but also showed that competition plays a significant role beyond the resources factor. The incentive effect of competition and the resources effect are countervailing effects. As one increases the other declines. Therefore, the availability of resources becomes a constraining factor to the incentive effect, while the lack of incentives is a constraining effect on the resource effect.

This study showed that M. Friedman was right about incentives but up to a point. Competition indeed increases the incentives but at the same time reduces the resources a firm can invest in social performance. This implies that policy with respect to competition can be different for different industries. Depending on what aspects of CSP we want firms to do, and depending on the current level of competition in an industry, we may want policies to increase or even decrease competition. We may also need policies

that have nothing to do with industry consolidation, as in the case of diversity, which seems to be unaffected by competition.

For example Enron Corporation in the Petroleum industry (SIC: 5172) has an HHI of 0.35 (4 year average), that is, it is highly concentrated industry which means more competition would be preferred if we want to see more social performance. On the other hand in the case of Prepackaged Software industry (SIC: 7372) with an HHI of 0.95 (very high competition) we may observe an increase in social performance if competition actually decreases.

A lot of discussion is under way about consolidation in the agriculture industry. Although the agriculture industry was not included in this study (only publicly traded companies were included and farming is not the case) one could argue that based on the results of this study consolidation might not be bad at least from a social performance perspective. Agriculture is one of the few industries that approach the definition of perfect competition (i.e. large number of relatively small farmers). So, the results show that too much competition might not lead to the optimal levels of social performance and that some consolidation may by justified under these conditions.

A point of importance I would like to mention here is that CSP is a complex construct and the different dimensions it is composed from are not the same and are not equally affected by competition. We saw that diversity is the least affected dimension. Depending on which dimension we want to promote in specific industries we may want to take different policy measures. For example in the case of diversity, market incentives (i.e. competition) and resources do not affect firm performance in that dimension. This

means that government legislation and regulation may be desirable if we are to promote the diversity dimension.

However, this study is by no means complete and in order to make the right policy decisions further research is needed. Competition was measured by the Helfindahl-Hirschman Index which is better than the CR4 ratio but it does not capture rivalry among firms. An industry may have few firms (i.e. low HHI indicating low competition) but rivalry among these firms may be very high intensifying competition.

Throughout the study, social performance was defined and measured with respect to the KLD dataset. Problems with this dataset are recognized in the methods chapter. We need to keep in mind that the results I got are with respect to the specific measure of social performance. One should not hastily arrive in the conclusion that competition above 0.6 or 0.7 (this corresponds to 4000-3000 HHI which is a relatively concentrated industry) is necessarily bad because it decreases social performance. This study showed that there is indeed a curvilinear relationship between competition and social performance, but in order to specifically calculate desirable levels of competition in different industries we need to do a more refined industry specific analysis.

A final point is that of institutional environment. Van de Ven and Jeurissen (2005) recognize that the institutional framework (legal environment and flow of information in the market) can play a significant role shaping the curvilinear relationship between competition and social performance. However no empirical study has been done to measure this effect. A line of future research could be to test the social performance (based of course on similar measures and definitions) of similar industries among different countries with different institutional environments. Does the legal framework

play important role affecting the SP-competition relationship? Do policies that facilitate the flow of information increase competition among firms with respect to social performance? Do income levels affect social performance, i.e. do richer countries expect firms to do more than what poor countries expect? And if this is the case, is social performance a normal or a luxury good? There is much to be done form a New Institutional Economics perspective on the relation between social performance and competition.

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http://www.kld.com/research/universities/universities_ratings.html

APPENDIX

A

KLD Research & Analytics, Inc.

KLD RATINGS DATA:
INCLUSIVE SOCIAL RATING CRITERIA

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INTRODUCTION

The following is a summary of the screens KLD Research & Analytics, Inc. used to assign strengths and concerns from 1991 - 2002.

Each screen focuses on a particular social indicator and is part of an overall evaluation of corporate social performance. KLD publishes its ratings and analysis as Company Profiles. In the accompanying summary spreadsheets, strength and concern ratings are signified by a number "1" in the appropriate row and column of the spreadsheet. The absence of ratings, signified by a "0" indicates that a company did not meet the criteria for the strength or concern.

KLD's social research is distributed in **SOCRATES - The Corporate Social Ratings Monitor**SM. **SOCRATES** is a proprietary database program that provides access to KLD's ratings and other data pertaining to the social records of over 3000 publicly traded U.S. companies. As of 2002, the academic spreadsheets are a summary of strengths and concerns assigned to approximately 1100 Socrates companies listed on the S&P 500, Domini 400 Social Index, Russell 1000, or KLD Large Cap Social Indexes as of December 31st of each year. Prior to 2002, the spreadsheets contain data from approximately 650 companies listed on the S&P 500 or Domini 400 Social Indexes as of August of each year.

Each spreadsheet has a "Key" associated file that lists the names of the strengths and concerns for each column. From time to time, KLD may choose to change the organization or naming convention of ratings. The old name of these ratings is given in the key. The following descriptions expand upon the name to give the user a clear picture of what is indicated by each strength and concern in the spreadsheets.

Each spreadsheet includes all fields, even if the issue corresponding to the field was not tracked during that year. In these cases, the fact is indicated by "NR" in the column to indicate that the company was not rated on that issue for that year.

The spreadsheets also contain summary columns for each general issue category (for example, the number of environmental strengths). This is simply a tally of strengths and concerns within each category.

QUALITATIVE SCREENS

COMMUNITY

STRENGTHS

Generous Giving (COM-str-A). The company has consistently given over 1.5% of trailing three-year net earnings before taxes (NEBT) to charity, or has otherwise been notably generous in its giving.

Innovative Giving (COM-str-B). The company has a notably innovative giving program which supports nonprofit organizations particularly those promoting self-sufficiency among the economically disadvantaged. Companies that permit nontraditional federated charitable giving drives in the workplace are often noted in this section as well.

Support for Housing (COM-str-C). The company is a prominent participant in public/private partnerships that support housing initiatives for the economically disadvantaged, e.g., the National Equity Fund or the Enterprise Foundation.

Support for Education (COM-str-D). The company has either been notably innovative in its support for primary or secondary school education, particularly for those programs that benefit the economically disadvantaged, or the company has prominently supported job-training programs for youth. KLD began assigning this strength in 1994.

Indigenous Peoples Relations (COM-str-E). The company has established relations with indigenous peoples in the areas of its proposed or current operations that respect the sovereignty, land, culture, human rights, and intellectual property of the indigenous peoples. KLD began assigning this strength in 2000. In 2002 KLD moved this strength rating into the Human Rights area.

Other Strength (Com-str-X). The company has an exceptionally strong volunteer program, in-kind giving program, or other particularly strong community program.

CONCERNS

Investment Controversies (COM-con-A). The company is a financial institution whose lending or investment practices have led to controversies, particularly ones related to the Community Reinvestment Act.

Negative Economic Impact (COM-con-B). The company's actions have resulted in major controversies concerning its economic impact on the community. These controversies can include issues related to environmental contamination, water rights disputes, plant closings, "put-or-pay" contracts with trash incinerators, or other company actions that adversely affect the quality of life, tax base, or property values in the community.

Indigenous Peoples Relations (COM-con-C). The company has been involved in serious controversies with indigenous peoples that indicate the company has not respected the sovereignty, land, culture, human rights, and intellectual property of indigenous peoples.

KLD began assigning this concern in 2000. In 2002 KLD moved this strength rating into the Human Rights area.

Other Concern (COM-con-X). The company is the focus of strong community opposition to its business or some other aspect of its operations.

DIVERSITY

STRENGTHS

CEO (DIV-str-A). The company's chief executive officer is a woman or a member of a minority group.

Promotion (DIV-str-B). The company has made notable progress in the promotion of women and minorities, particularly to line positions with profit-and-loss responsibilities in the corporation.

Board of Directors (DIV-str-C). Women, minorities, and/or the disabled hold four seats or more (with no double counting) on the board of directors, or one-third or more of the board seats if the board numbers less than 12.

Family Benefits (DIV-str-D). The company has outstanding employee benefits or other programs addressing work/family concerns, e.g., childcare, elder care, or flextime.

Women/Minority Contracting (DIV-str-E). The company does at least 5% of its subcontracting, or otherwise has a demonstrably strong record on purchasing or contracting, with women- and/or minority-owned businesses.

Employment of the Disabled (DIV-str-F). The company has implemented innovative hiring programs, other innovative human resource programs for the disabled, or otherwise has a superior reputation as an employer of the disabled.

Progressive Gay/Lesbian Policies (DIV-str-G). The company has implemented notably progressive policies toward its gay and lesbian employees. In particular, it provides benefits to the domestic partners of its employees. KLD began assigning strengths for this issue in 1995.

Other Strength (DIV-str-X). The company has made noteworthy diversity achievements that do not fall under other KLD categories.

CONCERNS

Controversies (DIV-con-A). The company has either paid substantial fines or civil penalties as a result of affirmative action controversies, or has otherwise been involved in major controversies related to affirmative action issues.

Non-Representation (DIV-con-B). The company has no women on its board of directors or among its senior line managers. KLD began assigning concerns for this issue in 1993.

Other Concern (DIV-con-X). The company has other notable diversity problems.

EMPLOYEE RELATIONS

STRENGTHS

Strong Union Relations (EMP-str-A). The company has a history of notably strong union relations.

No-Layoff Policy (EMP-str-B). The company has maintained a consistent no-layoff policy. KLD has not assigned strengths for this issue since 1994.

Cash Profit Sharing (EMP-str-C). The company has a cash profit-sharing program through which it has recently made distributions to a majority of its workforce.

Employee Involvement (EMP-str-D). The company strongly encourages worker involvement and/or ownership through stock options available to a majority of its employees, gain sharing, stock ownership, sharing of financial information, or participation in management decision-making.

Strong Retirement Benefits (EMP-str-F). The company has a notably strong retirement benefits program.

Other Strength (EMP-str-X). The company has a good employee safety record or demonstrates other noteworthy commitments to its employees' well being.

CONCERNS

Poor Union Relations (EMP-con-A). The company has a history of notably poor union relations.

Safety Controversies (EMP-con-B). The company recently has either paid substantial fines or civil penalties for willful violations of employee health and safety standards, or has been otherwise involved in major health and safety controversies.

Workforce Reductions (EMP-con-C). The company has reduced its workforce by 15% in the most recent year or by 25% during the past two years, or it has announced plans for such reductions. Before 1994, the concern was only assigned to companies that had laid off 15% of workers in the most recent year.

Pension/Benefits Concern (EMP-con-D). The company has either a substantially underfunded defined benefit pension plan, or an inadequate retirement benefits program. KLD began assigning concerns for this issue in 1992.

Other Concern (EMP-con-X). The company has a notable employee problem not addressed by KLD's specific rating categories.

ENVIRONMENT

STRENGTHS

Beneficial Products and Services (ENV-str-A). The company derives substantial revenues from innovative remediation products, environmental services, or products that promote the efficient use of energy, or it has developed innovative products with environmental benefits. (The term "environmental service" does not include services with questionable environmental effects, such as landfills, incinerators, waste-to-energy plants, and deep injection wells.) Through 1994, "substantial revenues" was specified as more than 4% of total revenues.

Pollution Prevention (ENV-str-B). The company has notably strong pollution prevention programs including emissions reductions and toxic-use reduction programs.

Recycling ((ENV-str-C). The company either is a substantial user of recycled materials as raw materials in its manufacturing processes, or a major factor in the recycling industry.

Alternative Fuels (ENV-str-D). The company derives substantial revenues from alternative fuels. The term "alternative fuels" includes natural gas, wind power, and solar energy. The company has demonstrated an exceptional commitment to energy efficiency programs or the promotion of energy efficiency.

Communications (ENV-str-E). The company is a signatory to the CERES Principles, publishes a notably substantive environmental report, or has notably effective internal communications systems in place for environmental best practices. KLD began assigning strengths for this issue in 1996.

Property, Plant, and Equipment (ENV-str-F). The company maintains its property, plant, and equipment with above average environmental performance for its industry. KLD has not assigned strengths for this issue since 1995.

Other Strength (ENV-str-X). The company demonstrates a strong environmental attribute not addressed by KLD'' ratings categories.

CONCERNS

Hazardous Waste (ENV-con-A). The company's liabilities for hazardous waste sites exceed $50 million, or the company has recently paid substantial fines or civil penalties for waste management violations. Before 1996 the threshold for liabilities was $30 million.

Regulatory Problems (ENV-con-B). The company has recently paid substantial fines or civil penalties for violations of air, water, or other environmental regulations, or it has a pattern of regulatory controversies under the Clean Air Act, Clean Water Act or other major environmental regulations.

Ozone Depleting Chemicals (ENV-con-C). The company is among the top manufacturers of ozone depleting chemicals such as HCFCs, methyl chloroform, methylene chloride, or bromines.

Substantial Emissions (ENV-con-D). The company's legal emissions of toxic chemicals (as defined by and reported to the EPA) from individual plants into the air and water are among the highest of the companies followed by KLD.

Agricultural Chemicals (ENV-con-E). The company is a substantial producer of agricultural chemicals, i.e., pesticides or chemical fertilizers.

Climate Change (ENV-con-F). The company derives substantial revenues from the sale of coal or oil and its derivative fuel products, or the company derives substantial revenues indirectly from the combustion of coal or oil and its derivative fuel products. Such companies include electric utilities, transportation companies with fleets of vehicles, auto and truck manufacturers, and other transportation equipment companies. KLD began assigning concerns for this issue in 1999.

Other Concern (ENV-con-X). The company has environmental problem not specifically covered in KLD's categories, usually an environmental accident.

PRODUCT

STRENGTHS

Quality (PRO-str-A). The company has a long-term, well-developed, company-wide quality program, or it has a quality program recognized as exceptional in U.S. industry.

R&D/Innovation (PRO-str-B). The company is a leader in its industry for research and development (R&D), particularly by bringing notably innovative products to market.

Benefits to Economically Disadvantaged (PRO-str-C). The company has as part of its basic mission the provision of products or services for the economically disadvantaged.

Other Strength (PRO-str-X).

CONCERNS

Product Safety (PRO-con-A). The company has recently paid substantial fines or civil penalties, or is involved in major recent controversies or regulatory actions, relating to the safety of its products and services.

Marketing/Contracting Controversy (PRO-con-D). The company has recently been involved in major marketing or contracting controversies, or has paid substantial fines or civil penalties relating to advertising practices, consumer fraud, or government contracting.

Antitrust (PRO-con-E). The company has recently paid substantial fines or civil penalties for antitrust violations such as price fixing, collusion, or predatory pricing, or is involved in recent major controversies or regulatory actions relating to antitrust allegations.

Other Concern (PRO-con-X). The company has problems at affiliated franchises, has been fined for product malfunctions, or has product problems not addressed by KLD's other categories.

EXCLUSIONARY SCREENS

KLD's exclusionary screens differ from the qualitative screens applied to the above issues in that only concern ratings, but no strength ratings, are assigned for the exclusionary issues.

ALCOHOL

CONCERNS

Involvement (ALC-con-A). The company derives substantial revenues from the production of alcoholic beverages.

Other Concern (ALC-con-X). The company derives substantial revenues from the activities closely associated with the production of alcoholic beverages. KLD assigned concerns in this category through 2002.

GAMBLING

CONCERNS

Involvement (GAM-con-A). The company derives revenues from the production of goods ands services related to gaming or lottery industries.

Other Concern (GAM-con-X). The company derives substantial revenues from the activities closely associated with the production of goods and services closely related to the gaming industry or lottery industries. KLD assigned concerns in this category through 2002.

FIREARMS

CONCERNS

Involvement. (FIR-con-A) The company is engaged in the production of small arms ammunition or firearms, including, pistols, revolvers, rifles, shotguns, or sub-machine guns.

MILITARY

CONCERNS

Involvement (MIL-con-A). The company has substantial involvement in weapons-related contracting. In the most recent fiscal year for which information is available, it derived more than 2% of sales or $50 million from weapons-related contracting, or it received more than $10 million in nuclear weapons-related prime contracts.

Minor Weapons Contracting Involvement (MIL-con-B). The company has minor involvement in weapons-related contracting. In the most recent fiscal year for which information is available, it derived $10 to $50 million in conventional weapons-related prime contracts (when that figure is less that 2% of revenue), or $1 to $10 million from nuclear weapons-related prime contracts. KLD assigned concerns in this category through 2002.

Major Weapons-related Supplier (MIL-con-C). During the last fiscal year, the company received from the Department of Defense more than $50 million for fuel or other supplies related to weapons. KLD assigned concerns in this category through 2002.

Other Concern (MIL-con-X). KLD assigned concerns in this category through 2002.

NUCLEAR POWER

CONCERNS

Ownership (NUC-con-A). The company is an electric utility that either generates electricity from nuclear fuels or owns an interest in a nuclear power plant.

Design (NUC-con-C). The company derives identifiable revenues from the design of nuclear power plants. This category does not include companies providing construction or maintenance services for nuclear power plants. KLD assigned concerns in this category through 2002.

Fuel Cycle/Key Parts (NUC-con-D). The company mines, processes, or enriches uranium, or is otherwise involved in the nuclear fuel cycle. Or, the company derives substantial revenues from the sale of key parts or equipment for generating power through using nuclear fuels. KLD assigned concerns in this category through 2002.

Other Concern (NUC-con-X). KLD assigned concerns in this category through 2002.

TOBACCO

CONCERNS

Involvement (TOB-con-A). The company derives substantial revenues from the production of tobacco products.

Other Concern (TOB-con-X). The company derives substantial revenues from the activities closely associated with the production of tobacco products. KLD assigned concerns in this category through 2002.

B

SAS code used for the Herfindahl-Hirschman Index calculation using COMPUSTAT data.

```
dm 'log; clear; output; clear';
libname out 'd:\';
data a; set out.hhiall1997;
sales=data12*1;
if sales=. then delete;
run;

proc sort data=a; by dnum; run;
data b (keep = dnum tsales); set a; by dnum;
  retain num tsales;
  if first.dnum then do;
  num=0; tsales=0; end;
  num=num+1;
  tsales=tsales+sales;
  if last.dnum then output;
proc print;
run;

data c; merge a b; by dnum;
HHI=(sales/tsales)**2;
run;
proc print; run;
proc means noprint data=c;
  var HHI; by dnum;
  output out=HHI sum=tHHI;
  run;
proc print data=HHI; var dnum  tHHI;

data interest; set out.hhi1997505;
sales=data12*1;
run;
proc sort data=interest; by dnum;
run;
data final97d; merge interest (in=a) HHI (in = b); by dnum;
if a;
run;
proc means;
var thhi;
run;

proc print;
run;
data unique97d; set final97d; by dnum;
if first.dnum;
run;

proc print;
run;
proc export data=final97d outfile= 'd:\final97d.xls' replace; run;
proc export data =unique97d = outfile = 'd:\unique97d.xls' replace; run;
```

VITÆ

Athanasios George Chymis received his PhD in Agricultural Economics, with emphasis in Agribusiness, form the University of Missouri – Columbia in 2007. At the same time he completed a Master's degree in Economics at the same University. He has also earned a Master's in Agricultural Economics from the University of Montpellier I in France and a Bachelor in Agricultural Economics from the Agricultural University of Athens, Greece.

His academic interests include, but are not limited to, new institutional economics, business ethics, rural development, political economy and happiness. In his free time he enjoys the company of friends and loves reading books on philosophy, and contemplating on the esoteric meaning of things. He particularly appreciates being close to nature and he found the way through hiking and mountaineering.