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The CEO Effect: A Longitudinal, Multi-Level Analysis of the Relationship Between Executive Orientation and Corporate Social Strategy

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Business

THE CEO EFFECT:

A LONGITUDINAL, MULTI-LEVEL ANALYSIS OF THE RELATIONSHIP BETWEEN EXECUTIVE ORIENTATION AND CORPORATE SOCIAL STRATEGY

(Spine Title: Executive Orientation and Corporate Social Strategy

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by

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SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES

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ABSTRACT

Corporate social responsibility (CSR) is a strategic issue. Yet, research in this area has primarily focused on establishing a link between CSR and financial performance, with significantly less attention given to the antecedents of CSR at the individual, firm or industry levels. Notably, despite popular anecdotal examples that link the personal values, beliefs or characteristics of business leaders to the socially responsible nature of their companies, very little is actually known empirically about the relationship between executive orientation and the corporate social strategy pursued by the firm.

The empirical research study presented in this dissertation is designed to fill this important gap. First, I synthesize the vast literature in the general CSR domain into a new typology of corporate social strategy (CSS) that distinguishes a firm's approach to CSR along its breadth and depth dimensions. Then, using an upper echelon framework based in the strategic choice and strategic decision-making literatures, I examine the relationship between executive orientation and variances observed in firm responses to social and environmental issues over time. I argue specifically that an open executive orientation, as reflected in a CEO's worldview, and variables such as functional background, educational specialization and international experience affect the selective perception, interpretation and therefore choice of the breadth and depth of a firm's CSS. Furthermore, institutional theory is used to argue that the level of managerial discretion at the industry level as well as general industry norms will attenuate theses relationships. In so doing, I develop a longitudinal, multi-level, mixed determinant model of the relationship between executive orientation and CSS.

Random coefficient modeling (RCM) is then used to test the CEO effect on CSS over time, by modeling the individual CSS growth trajectories of 349 firms from 1991-2009 using HLM6 software. With 19 years of data, over 1,000 CEOs and 6,334 firm-year observations, this thesis represents the first longitudinal study to explicitly model the rate of adoption of aggregate corporate social strategy (ACSS), breadth of corporate social strategy (BCSS) and depth of corporate social strategy (DCSS) over the last two decades.

This analysis yielded three important results at the CEO, firm and industry levels. First, the CEO effect on CSS ranges between 3-14% and evidence supports that some aspects of an open executive orientation are indeed important determinants of initial levels and rates of adoption of CSS over time. The findings also reveal that the overall level of CSS has not grown substantively over the last two decades, with most firms in 2009 still engaging in a Derivative (shallow/narrow) CSS. Furthermore, unlike previous studies that confound negative and positive CSR, this dissertation demonstrates that industry membership is *not* an important determinant of the strategic choice of positive CSS, nor are institutional pressures moderating factors in the executive orientation – CSS relationship. This thesis thus makes significant theoretical and methodological contributions to research in the upper echelons, CSR and institutional theory domains, as well as has important implications for practice.

Key Words*: Corporate Social Responsibility (CSR), Corporate Social Strategy (CSS), upper echelons, executive orientation, CEO, institutional theory, multi-level, longitudinal, random coefficient modeling (RCM), hierarchical linear modeling (HLM)*

DEDICATION

To my dad,

Juris Mazutis
1940-2008

Saule lēca un teica man: eji
Kur neskan vaidi, dēls, kur nepūš vēji,
Kur rīta miglas tīts, deg gunskurs vēls
Kur vārtos vaiņags vīts, tur eji dēls.

J. Mazutis

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CHAPTER 1: INTRODUCTION

1.1 Motivation for Study

News reports and headlines from around the world suggest that it is becoming increasingly risky for organizations to dismiss corporate social responsibility (CSR) as something that lies beyond the economic and legal duties of the firm. Businesses of all sizes (multinationals in particular) face a growing demand to become more actively involved not only in managing the negative externalities that they may cause as a direct result of firm operations, but also in addressing the world's most pressing social problems such as climate change, human rights abuses, poverty and conflict (Margolis & Walsh, 2003; Orlitzky & Swanson, 2008; Sharfman, Shaft & Tihanyi, 2004). For the last decade, popular management books with titles such as *The Ethical Imperative* (Dalla Costa, 1998), *Value Shift* (Paine, 2003) and *The Necessary Revolution* (Senge, Laur, Smith, Kruschwitz & Schley, 2008) have been making the claim that the rules of the game are changing – businesses operating today face a new performance standard that goes beyond economic requirements to include ethical, social and environmental considerations as well. The argument is such that only companies that score well on both financial and ethical dimensions can hope to achieve sustained competitive advantage or superior performance in the long run (Paine, 2003).

Despite increasing pressures, however, businesses have adopted very different strategies with regards to the call for an expanded social mandate (Googins, Mirvis & Rochlin, 2007). Several large multinational corporations are "developing new policies and practices aimed at promoting human rights, preventing violent conflict, and contributing to more peaceful societies" (Williams, 2008: I). Microsoft, for example, has actively pursued business strategies that aim to serve the world's poorest people through investments, partnerships and programs designed specifically to solve issues such as access to education and alleviating poverty. Other firms, however, have continued to resist the push to engage in social issues, taking the perspective that "the only social responsibility of business is to increase profits" (Friedman, 1970). Rival Apple, for example, continues to face extensive criticism for its lack of transparency with regards to the social and environmental impact of its operations.

A firm's approach to CSR thus appears to be a matter of strategic choice, partially rooted in whether CSR is seen as a cost or as an opportunity (Sharma, 2000; Sharma, Pablo & Vredenburg, 1999). Indeed, the financial estimates regarding both the potential investments and returns of social and environmental initiatives for organizations seem immeasurable. For example, in the United States alone, businesses donated over $14.1B to charitable causes just in 2009, with corporate charitable contributions totalling over $100B in the last decade (Giving USA, 2010). Investments in environmental technologies such as water productivity improvements are forecast to cost between $50 and $60B/year for next twenty years (McKinsey Quarterly, 2010a). In the oil and gas industry specifically, the capital investments required to meet carbon emission reduction targets could amount to $26B/year for the next fifteen years (McKinsey Quarterly, 2010b).

However, the potential gains to be realized from CSR initiatives appear equally as compelling. Studies have shown that firms that are above average philanthropists deliver greater long term value to their shareholders (Brammer & Millington, 2008) and that firms that invest in environmental programs such as waste prevention initiatives can also profit from substantial financial gains (King & Lenox, 2002). Similarly, since 2005, it is estimated that the world's most ethical companies have delivered a 53 percent return to shareholders, outperforming the S&P 500 that logged a 4 percent loss over the same period (Ethisphere, 2010). In several recent meta-analyses, the overall link between corporate social responsibility and corporate financial performance has been shown, on the whole, to be at least marginally positive (Margolis, Elfenbein & Walsh, 2007; Margolis & Walsh, 2003; Orlitzky, Schmidt & Rynes, 2003).

Although economic contractarians continue to portray corporate social initiatives as a misallocation or misappropriation of funds (Friedman, 1970; Margolis & Walsh, 2003), how a firm chooses to address (or not to address) social and environmental issues can nonetheless have an important effect on firm financial performance, either through greater costs or greater revenues, both in the short and in the long-term. Further, regardless of where one falls on the cost vs. benefits of CSR debate, how a firm deals with social and environmental issues has become an important factor in the market for capital. As of 2010, one in every eight dollars invested in the US was done so through socially responsible investment (SRI) funds, representing 12% of all assets currently under professional management and over $3.07 trillion dollars in capital (Social Investment Forum Foundation, 2010).

The investments, rewards and access to capital associated with social and environmental initiatives thus render CSR a strategic issue and the decision to avoid or pursue CSR initiatives a matter of strategic choice. A strategic issue is defined as an emerging development that is likely to have a significant impact on a firm's present or future strategies (Ansoff, 1980; Dutton, Fahey & Narayanan, 1983; Julian & Ofori Dankwa, 2008). Given the resource and revenue implications of CSR initiatives, especially in the long-term, this definition places a firm's plans and actions with regards to social and environmental issues squarely in the realm of the strategic decision making literature (Husted & Allen, 2007; Husted & Allen, 2011). In this regard, it then becomes essential for practitioners, researchers, investors and board of director members alike, to understand how and why firms differ with regards to strategic choices made around CSR issues.

1.2 Research Questions

One possible explanation for the variation in firm adoption of CSR initiatives over time lies with values, beliefs and cognitions of its senior executives. Research in the field of strategic issues has long studied the relationship between executive judgment and interpretations of emerging strategic issues (Julian & Ofori Dankwa, 2008), yet surprisingly, very little work has been done in the area of strategic leadership and CSR (Agle, Mitchell & Sonnenfeld, 1999; Laplume, Sonpar & Litz, 2008; Maon, Lindgreen & Swaen, 2008; Rose, 2007; Thomas & Simerly, 1994; Waldman et al., 2006a; Waldman & Siegel, 2008; Waldman, Siegel & Javidan, 2006b; Wood, 1991). These authors point out the paucity of research regarding the relationship between leadership and CSR, despite decades of work in the upper echelons/strategic leadership field that has established the important role of the CEO, Top Management Team (TMT) and Board of Directors (BOD) with regards to strategic decision making in general and firm performance in particular (Finkelstein, Hambrick & Cannella, 2009).

The link between leadership and CSR, however, has great face validity. The popular press is replete with anecdotal examples that link the personal values, beliefs or characteristics of business leaders to the socially responsible nature of their companies (e.g. Anita Roddick of The Body Shop, Ray Anderson of Interface Carpets, Roy Vagelos of Merck). Empirically, however, Waldman, Siegel and Javidan (2006b) summarize the importance of this research gap as follows:

> "The strategic use of CSR begs the question about the potential role of the CEO in determining the propensity of firms to engage in these activities. CEOs are charged with the responsibility of formulating corporate strategy and are often deeply involved in promoting the image of their respective firms through social responsibility. Furthermore, they may dramatically change the strategic direction of the firm, including decisions pertaining to CSR. ... given the above ... it is somewhat surprising that there has been virtually no systematic theoretical or empirical analysis of the relationship between characteristics of CEO leadership and CSR" (Waldman et al., 2006b: 1704)

As such, there is an opportunity to bridge the strategic leadership and corporate social responsibility literatures in order to build a more testable theory of this relationship. If one believes that the decision to invest in a CSR initiative is a strategic decision (Husted & Allen, 2011; Waldman & Siegel, 2008) and that executive orientation can drive strategic decisions (Finkelstein et al., 2009; Hambrick & Mason, 1984), then gaining a deeper understanding of executive orientations with regards to CSR should help explain some of the variance observed in firm responses to social issues over time (Agle et al., 1999). In particular, this research is guided by the following questions:

1. *What is the relationship between executive orientation and the corporate social strategy pursued by the firm over time?*
2. *How do firm and industry characteristics affect the relationship between executive orientation and the corporate social strategies pursued by the firm over time?*

To explore these questions, I draw on the upper echelon perspective as well as the strategic decision making literature to demonstrate how executive orientation affects strategic choice and uncover how executive orientation affects the nature (breadth and depth) of corporate social strategies (CSS) pursued by the firm. By executive orientation, I mean an executive's psychological characteristics such as values, beliefs and worldviews which are often evaluated based on observable experiences such as functional and educational background (Hambrick & Mason, 1984). Executive orientation is often seen as a relatively fixed cognitive paradigm that encompasses one's personal ideology about human nature, perceptions of one's role in society and understanding of social reality (Tetlock, 2000), including "how the environment behaves, what options are feasible, and how the organization should be run" (Henderson, Miller & Hambrick, 2006: p. 448). Understanding variations in executive orientations thus holds promise to understanding variations in CSS.

1.3 Thesis Structure

This thesis is structured as follows:

In Chapter 2, I begin with a review of the corporate social responsibility literature in order to develop my dependent variable of interest – corporate social strategy (CSS) – which positions a firm's decision to invest in CSR issues as a matter of strategic choice. I then introduce and build a typology of CSS based on a firm's breadth and depth of engagement in various social and environmental issues. Within the literature review, I also summarize upper echelon theory (Hambrick & Mason, 1984) and institutional theory (DiMaggio & Powell, 1983) in a manner which ties executive orientation and institutional pressures to the choice of CSS pursued by the firm over time.

In Chapter 3, I construct a set of testable hypotheses, beginning with the overall expected patterns of adoption of CSS by firms over time. I then discuss the executive orientation construct in detail, focusing on CEO 'openness' as a unifying disposition that can explain variations in strategic decisions about initial levels and rates of adoption of CSS. Here, hypotheses are built around the relationship between CEO worldview, functional background, educational background, international experience and the aggregate, breadth and depth of corporate social strategy pursued by firms over time. I conclude by introducing two institutional level constructs – managerial discretion and industry norms – as potential moderators of the executive orientation and CSS relationship.

Importantly, the hypotheses developed in this study take a longitudinal perspective. The large majority of the work in both the CSR (Shropshire & Hillman, 2007) and the strategic leadership fields (Henderson et al., 2006) has thus far been cross-sectional in design, allowing for only a static understanding of interesting correlations. However, the concept of corporate social responsibility and other similar constructs (e.g. corporate citizenship, business sustainability) has evolved over time (De Bakker, Groenewegen & Den Hond, 2005) as have societal expectations and managerial interpretations of these expectations. I therefore take a longitudinal approach to the research questions addressed herein to account for the dynamic nature of these strategic decisions.

I then sum up, in Chapter 4, the literature review and hypotheses in a longitudinal multi-level model (Kozlowski & Klein, 2000) of executive orientation and CSS. Here, the CEO is nested within a firm and the firm within the industry, arguing that normative, regulative and coercive isomorphic pressures (DiMaggio & Powell, 1983) also shape a firm's response to difficult social issues. In so doing, I make explicit why some CEOs pursue a broader or deeper CSS than do their more constrained counterparts.

Following the literature review and hypotheses development, in Chapter 5 I outline the methodology (data sources and collection, analytic method, operationalization of variables) used to test the relationships hypothesized in the model. Chapter 6 begins with descriptive and exploratory findings, as suggested by Singer and Willett (Singer &

Willett, 2003) and then presents the results of the hypotheses testing in detail, following the random coefficient modeling (RCM) approach recommended by Bliese and Ployhart (2002), among others.

The focus in the theoretical development and methodological testing is thus primarily descriptive, exploring how individual, firm and industry level variables influence a firm's level and rate of adoption of corporate social strategy over time. However, this dissertation also includes a discussion section, Chapter 7, which delves into some of the more interesting implications of the findings in more detail. I wrap up with necessary limitations and directions for future research (Chapter 8), anticipated contributions to theory, methods and practice (Chapter 9) and a short conclusion (Chapter 10).

CHAPTER 2: LITERATURE REVIEW

In this chapter, I review the literature on corporate social responsibility (Section 2.1), including two primary approaches (aggregated and disaggregated) to conceptualizating CSR (Section 2.2) and illustrate how these two approaches can be combined into a new typology of corporate social strategy that centers on strategic choice (Section 2.3). I then follow by briefly introducing the upper echelon (Section 2.4) and institutional theory (Section 2.5) lenses that will be used to build my hypotheses in Chapter 3.

2.1 Defining Corporate Social Responsibility (CSR)

The debate around what is and what is not CSR stems from a broader philosophical argument regarding the "appropriate" role of business in society (Swanson, 1995). While some researchers believe that the only social responsibility of business is to increase profits (Friedman, 1970; Jensen, 2001; Karnani, 2011), others have argued for a broader interpretation of a firm's responsibility to the societies it serves including not only its direct stakeholders (e.g., employees, customers, suppliers), but also broader interpretations of society as a whole (Freeman, 1984; Schwartz & Carroll, 2008), including the powerless, the environment and even the non-human (Laplume et al., 2008).

To date, there is no general consensus of either the definition (Carroll, 1999) or the scope of corporate social responsibility (De Bakker et al., 2005). Many discussions, however, begin with some variation of Carroll's (1979; 1991) four part classification of the obligations business has to society which include economic, legal, ethical and discretionary (philanthropic) activities. Others have adopted Wood's (1991) definition of corporate social performance (CSP) that includes "a business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships" (p. 693). Overall, however, it is assumed that a business' primary responsibility is to first make a profit and to obey the law (economic and legal duties) and that CSR and CSP encompass those activities which 'go beyond' these economic and legal duties, including being ethical and a good corporate citizen (McWilliams & Siegel, 2001). Even seminal work in stakeholder theory places the primary obligation of the firm in the economic rather than ethical domain (Walsh, 2005).

Defining CSR has thus been complicated by these different interpretations of CSR, as well as a myriad of largely analogous concepts (Margolis & Walsh, 2003; Orlitzky et al., 2003; Schwartz & Carroll, 2008). To demonstrate, in addition to the term CSR, similar constructs are often used (sometimes interchangeably) to study the impact of business on society including: CSP (Corporate Social Performance), CSR_2 (Corporate Social Responsiveness), ESG (Environmental, Social and Governance programs), corporate citizenship, social issue management, stakeholder management, triple bottom line accounting, as well as broader terms such as business ethics, values-based management, moral management, ethical decision making, community relations and more recent terminology such as business sustainability, social innovation, positive social change activities, social entrepreneurship, creative capitalism, the enlightened profit motive, corporate moral responsibility and bottom of the pyramid strategies (BOP). Furthermore, there are entire streams of research on specific domains of CSR including corporate philanthropy, diversity, ethical and environmental issues.

This plethora of definitions of corporate social responsibility has led to an equally wide variety of operationalizations of the construct itself (Peloza, 2009; Wood, 2010). In reviewing 127 studies on the relationship between corporate social performance and corporate financial performance (otherwise known as the CSP-CFP debate), Margolis and Walsh (2003) identified no fewer than 47 measures of CSP ranging from the more often used Kinder, Lyndenberg, Domini (KLD) index scores and Fortune reputation ratings, to more narrow interpretations of CSP such as the firms that make the "Working Mothers list of 'Most Family Friendly' companies". Many of these same variables have also been used to operationalize analogous constructs including corporate citizenship and stakeholder relations and reviews of the literature often overlap. Laplume et al. (2008), for example, state that "the most popular operationalization of stakeholder management is a multifaceted measure derived from the KLD index" (p. 1167), which is also one of the most popular operationalizations of CSR (Harrison & Freeman, 1999).

Although Orlitzky et al. (2003) in their meta-analysis of 52 CSR studies conclude that this variety of measurement methods is irrelevant given that it serves to strengthen the overall positive relationship between CSP-CFP, the lack of construct validity is problematic for the advancement of theory in this area in general and more specifically to the analysis of antecedents and determinants of CSR. In addition, it leaves practicing managers and senior executives without a practical tool with which to assess the overall CSR profile of their firms; to wit, in a recent United Nations Global Compact (UNGC) survey, 31% of CEOs indicated that the different definitions of CSR were a major barrier to implementing an integrated and strategic company-wide approach to environmental and social issues. This number is up from 22% of CEO's who made this same claim just three years ago, indicating that the field is getting more, not less, confusing (UNGC & Accenture, 2010).

2.2 Conceptualizing Corporate Social Responsibility (CSR)

Germane to this discussion then is how one conceptualizes CSR, as an all-encompassing construct or as a very particular activity (e.g., corporate philanthropy). Very broadly, it can be argued that research in the field of CSR has generally taken one of two routes - either an aggregated or disaggregated approach. The fundamental difference between the two streams of research lies with how CSR is conceptualized, and therefore treated and measured. While the aggregated approach assumes that all activities that lie beyond a firm’s economic and legal responsibilities can be defined as CSR (McWilliams & Siegel, 2001), the disaggregated approach examines each of these activities as isolated CSR initiatives.

In this section, I review each of these approaches in turn and then suggest that the aggregated and disaggregated perspectives can be combined into a new typology of a firm’s CSR initiatives, which I define as Corporate Social Strategy (CSS). Because CSR is normally considered as the independent variable in social issue research (Margolis & Walsh, 2003), many of the studies reviewed here draw on the CSR-CFP debate. However, this discussion is then followed by a review of the upper echelon literature and how the values and cognitions of senior executives may affect strategic choices around CSR issues as a dependent variable.

2.2.1 CSR: The Aggregated Approach

The aggregated approach to defining and measuring CSR conceptualizes CSR as a basket of activities or initiatives that address a firm's interactions with all of its stakeholder groups beyond the firm's primary responsibility to shareholders. This approach treats any initiative not directly mandated by law or by the firm's duty to maximize shareholder profits as analogous (e.g. corporate philanthropy, voluntary emission standards, work/life balance programs) and thus implicitly assumes that a broad array of CSR initiatives can be amalgamated into one total CSP score (Choi & Wang, 2009; Mattingly & Berman, 2006). More than half of the studies reviewed by Margolis and Walsh (2003) in their analysis of CSP-CFP research, for example, took this aggregated perspective.

In these studies, CSP is operationalized using measures such as the KLD index (Hillman & Keim, 2001), Fortune Reputation Rating (Thomas & Simerly, 1994), mutual fund screens (McWilliams & Siegel, 2000), or other surveys of social responsibility (Sharfman, Pinkston & Sigerstad, 2000). These amalgamated or composite scores often combine a firm's total social and environmental performance - negative, neutral and positive - into a single CSP measure that includes varied initiatives ranging from the number of women on the board to production of military weapons. The underlying assumption is that a firm's response to social issues as well as their participation in ethically controversial industries together "capture the domain of what management scholars consider to be CSR" (Waldman et al., 2006b: p. 1714).

The difficulty with this approach, however, is three-fold. First, summing a firm's CSP strengths and weakness within a single composite score (e.g., Waddock & Graves, 1997; Waldman et al., 2006b) can completely obscure the actual corporate social performance of the firm (Mattingly & Berman, 2006; Strike, Gao & Bansal, 2006). For example, if a firm scores a "1" in community relations, but a "-1" in human rights, its overall CSP score will be "0", which is equivalent to suggesting a firm is in not engaging in any CSR initiatives when it clearly is; so not all zeros are zero. Second, the aggregated approach assumes that firms that are doing nothing lie on the same continuum as firms that have chosen to pursue one, some or many CSR initiatives. However, if we accept the definition of CSR as those activities which lie beyond the economic and legal requirements of the firm (McWilliams & Siegel, 2001), it seems conceptually illogical to include firms that have chosen not to engage in any social, environmental or other stakeholder issues as having participated in any CSR; so zero is also not the same as one. On the other hand, if a firm *has* made the decision to include a CSR agenda in their overall strategy, a third difficulty with the aggregated approach is that it masks important nuances in the actual corporate social strategies pursued by the firm; in the end, not all one's are equal.

To illustrate, Table 2.1 provides the CSP 'scores' of six hypothetical firms using several typical KLD categories that have been used in a variety of aggregated studies (e.g., Agle et al., 1999; Berman, Wicks, Kotha & Jones, 1999). In the case presented below, one can easily see how firms with the same CSP score may actually be engaging in very different CSR initiatives. As can be seen in Table 1, each of the hypothetical firms in this study has earned a total CSP score of "6", which is a sum of all of the strengths and weaknesses across CSR areas.

Table 2.1: Mapping Corporate Social Initiatives

	Area 1	**Area 2**	**Area 3**	**Area 4**	**Area 5**	**Area 6**	**CSP Score**
Firm	Employee Relations	Diversity	Comm-unity Relations	Environ-ment	Human Rights	Special Products	Sum
1	6	0	0	0	0	0	**6.00**
2	6	6	0	-6	0	0	**6.00**
3	0	3	3	0	0	0	**6.00**
4	-4	4	2	2	0	2	**6.00**
5	-2	4	4	-2	0	2	**6.00**
6	1	1	1	1	1	1	**6.00**

Under aggregated models of assessing CSP, each of these firms would be deemed to have an equal CSP record. However, this method clearly masks that these firms have indeed pursued very different corporate social strategies. First, some firms have both positive and negative ratings in different categories which do not get separately identified in the composite CSP score (Firms 2, 4 & 5). Second, even for firms that have only positive scores, these may be an amalgam of both strengths and concerns (e.g. Firm 3 may actually have six strengths in the diversity category, but three weaknesses, thus rendering the net score for this area a +3). Lastly, strategic decisions regarding which stakeholder or social areas have seen investments and how deep these investments have been, are also hidden in the overall CSP score. Firm 1, for example, has focused all of its attention in one category (employee relations issues), while Firm 6 has taken a broader approach and invested in all six areas. Similarly, Firm 1 has also engaged in a deeper social strategy having earned six strengths in employee relations while Firm 6 has only earned one, thus engaging in a much shallower social strategy with regards to this particular area.

Yet, in most research that has assumed the aggregated approach (e.g., David, Bloom & Hillman, 2007; Deckop, Merriman & Gupta, 2006), the CSP of each of these firms would be treated equally; there is thus no objective way to discern which of these firms is actually engaging in the greatest amount of corporate social strategies, has the broadest range of CSR commitments or has invested the most against any particular stakeholder or social issue. The aggregated approach thus seems insufficient to address questions regarding the overall CSR strategy pursued by the firm from a strategic choice perspective.

2.2.2 CSR: The Disaggregated Approach

On the other extreme, the disaggregated approach to measuring CSR looks at only one of the specific categories of activities at a time in order to obtain a more 'objective', third-party assessment of a firm's CSP 'behaviours' (Orlitzky et al., 2003). Here, CSP measurements might include items such as philanthropic donations (Galaskiewicz, 1997), levels of toxic emissions (Kassinis & Vafeas, 2006) or degrees of environmental responsiveness (Sharma, 2000).

Research has shown, however, that each of these different measures may have a different impact on CFP. For example, Orlitzky et al. (2003) found that studies that used environmental performance as a proxy for CSR had an overall lower correlation with CFP than studies that used the more aggregated reputation or survey measures of CSR. Similarly, Gao (2008) found that corporate environmental performance (CEP) and CSP are distinct constructs that have different evolutionary trajectories, different managerial perceptions and therefore differential impacts on firm performance. In contrast, studies that have used charitable contributions as a proxy for CSR have had some of the highest correlations with CFP (Orlitzky et al., 2003).

This suggests that the disaggregated approach, while providing perhaps the most concrete and informative evidence for the relationship between CSP and CFP, nonetheless demonstrates that different initiatives will have a different impact on firm performance, without providing any indication of how these initiatives might affect firm performance when combined. If charitable contributions are positively correlated with firm performance, and environmental performance less so, and a firm is pursuing both, what will be the overall affect of the two corporate social strategies on CFP? Further, these studies often include firms that have not engaged in any CSR initiative, thus also confounding firms with no CSP with firms that have some or more CSP.

In summary, neither the aggregated nor the disaggregated approach appears to sufficiently capture the domain of corporate social strategy. Rather, both of these approaches in combination can be seen as two related dimensions of a firm's overall CSS. The aggregate approach acknowledges that CSP is a multi-dimensional construct (Agle et al., 1999) and thus attempts to capture, to some degree, the *breadth* of CSR activities that a firm has chosen to pursue, from more narrow or focused strategies to a portfolio of more broad or diversified strategies. The disaggregated approach, on the other hand, focuses on the *depth of commitment* or engagement in a specific CSR activity (Brammer & Millington, 2008), from relatively shallow to very deep participation in various initiatives. In the following section, I outline how these two dimensions can be combined into a typology of corporate social strategies that incorporates the strengths of both the aggregated and disaggregated approaches to CSR measurement as well as demonstrate how the absence of any social or environmental programs is also a strategic choice that is conceptually distinct from firms that choose to pursue even one CSP initiative.

2.3 Corporate Social Strategy (CSS): Defining a New Typology

Provided that the strategic leadership of the firm has decided to engage in CSR, the nature of a firm's CSR portfolio can be evaluated with regards to two dimensions – breadth and depth of strategies deployed - which answer the following questions: (1) is a firm's portfolio of social strategies focused on a specific narrow issue or diversified to address a myriad of social problems?; and (2) what is the firm's depth of commitment to the specific initiatives in which they engage? I argue that the combination of these dimensions define the boundaries of a firm's *corporate social strategy (CSS*) (Mazutis, 2010).[1] The two dimensions of this construct are now explored in greater detail.

2.3.1 Breadth of CSS (Narrow Strategies vs. Broad Strategies)

The senior executives of a firm may choose to pursue either narrow or broad corporate social strategies. In distinguishing between CSR and CSP Barnett (2007:797) takes issue with the equivocation of terms and asserts that "firms are not imbued with a certain CSP state… Rather, firms make investments that, over time, aggregate into certain CSP postures. These investments are CSR." Similarly, I argue that one can observe the decisions to invest in CSR over time as indicative of the firm's overall corporate social strategy. Adopting the classification from traditional strategic analysis (Porter, 1980), firms with a narrow or focused corporate social strategy choose to invest in just one, or at

[1] An abridged version of section has been published in the Academy of Management Proceedings for 2010 (Montreal, QC).

least a very limited, number of stakeholder or social issues. This may be because this is where a CEO or TMT sees it can make the greatest impact, or it could be because the nature of the issue itself presents with a greater sense of urgency from more legitimate or powerful stakeholders (Mitchell, Agle & Wood, 1997). Regardless of motivation, firms with a narrow CSS are “built around serving a particular target very well, and each functional policy is developed with this in mind” (Porter, 1980: 38). For example, a CEO might choose to focus on its employee diversity policy, specifically investing in this narrow stakeholder target so as to more effectively or efficiently achieve some measure of positive outcomes with this particular stakeholder group.

In contrast, leaders of firms with a broader corporate social strategy will invest in more than one stakeholder or social issue. McWilliams and Siegel (2001) suggested that "managers should treat decisions regarding CSR precisely as they treat all investment decisions" (p. 125); some will choose to commit to a narrow CSR strategy, while others will invest more broadly, funding initiatives that target multiple stakeholder and social issues. The CEOs and TMTs of these firms may be trying to gain an insurance-like benefit from addressing a range of stakeholder needs (Godfrey, Merrill & Hansen, 2009). Alternately, they may perceive their obligations to society as going beyond economic and legal mandates; trying to be both responsive to the social concerns of multiple stakeholders and also to mitigate the real and potential adverse effects of its business activities (Porter and Kramer, 2006).

Porter and Kramer (2006) summarize the strategic decision regarding the breadth dimension of CSS as follows:

> “For any company, strategy must go beyond best practices. It is about choosing a unique position – doing things differently from competitors in a way that lowers costs or better serves a particular set of customer needs.

> These principles apply to a company's *relationship to society* as readily as to its relationship to its customers and rivals" (Porter and Kramer, 2006: p. 91; *emphasis added*).

A CEO's choice of a narrow vs. broad CSS can therefore be viewed as a reflection not only of how he/she sees the firm's relationship to its stakeholders specifically, but also to how the senior leadership sees the firm's relationship to a broader society in general.

2.3.2 Depth of CSS (Shallow Strategies vs. Deep Strategies)

Similarly, "an adequate theoretical framework [of CSR] must distinguish not only the component relationships inherent in a firm's overall social posture but also the relevant importance of each component" (Barnett, 2007: 812). Here I suggest that one can also assess a firm's CSS by its depth of commitment to particular stakeholder and social issues. A CEO of a firm that engages in just one initiative targeted to one stakeholder group can be said to have a shallower depth of commitment to this issue than a CEO of a firm that has numerous initiatives aimed at the same stakeholder group or than the CEO that has numerous initiatives aimed at a broad array of stakeholder and social issues. A CEO who has engaged in no CSR related initiatives cannot be said to have either a shallow or deep commitment as the firm effectively has no commitment to CSR.

In the CSR literature, this depth of commitment has often been portrayed on a continuum of social responsiveness as illustrated in Table 2.2 below (Carroll, 1979; Wood, 1991). Carroll (1979), for example, suggested that corporate managers have strategic choice with regards to fulfilling the economic, legal, ethical and philanthropic responsibilities to society and on how to respond to a wide variety of stakeholder and social issues including consumerism, the environment, discrimination, product safety, occupational safety and shareholder concerns. For example, when facing either a stakeholder or a social issue which may fall beyond a firm's economical or legal requirements, a leader can choose either to do nothing until mandated by law (reactive strategy), wait and bear the consequences (defensive strategy), acquiesce to consumer pressure (accommodating strategy) or seek to develop solutions that will address the issue before it arises (proactive strategy). By inference, those CEOs adopting a reactive or defensive posture have a shallower depth of commitment to stakeholder and social issues than those CEOs that take a more accommodating or proactive stance.

Table 2.2: Continuum of Corporate Social Responsiveness

Authors	Do Less				Do More
Carroll (1979)	Reactive	Defensive	Accommo-dating		Proactive
Hunt & Auster (1990)	Beginner	Firefighter	Concerned Citizen	Pragmatist	Proactivist
Aragon-Correa (1998)	Non-compliance	Compliance	Compliance Plus	Leading Edge	Excellence
Henriques & Sadorsky (1999)	Reactive	Defensive	Accommo-dative		Proactive
Buysse & Verbeke (2003)	Reactive	Prevention			Leadership
Zadek (2004)		Defensive, Compliance		Managerial, Strategic	Civil
Googins et al. (2007)	Elementary		Engaged	Innovative	Integrated, Transforming
Maon et al. (2010)	Diminishing	Self-Protecting, Compliance Seeking	Capability Seeking	Caring, Strategizing	Transforming

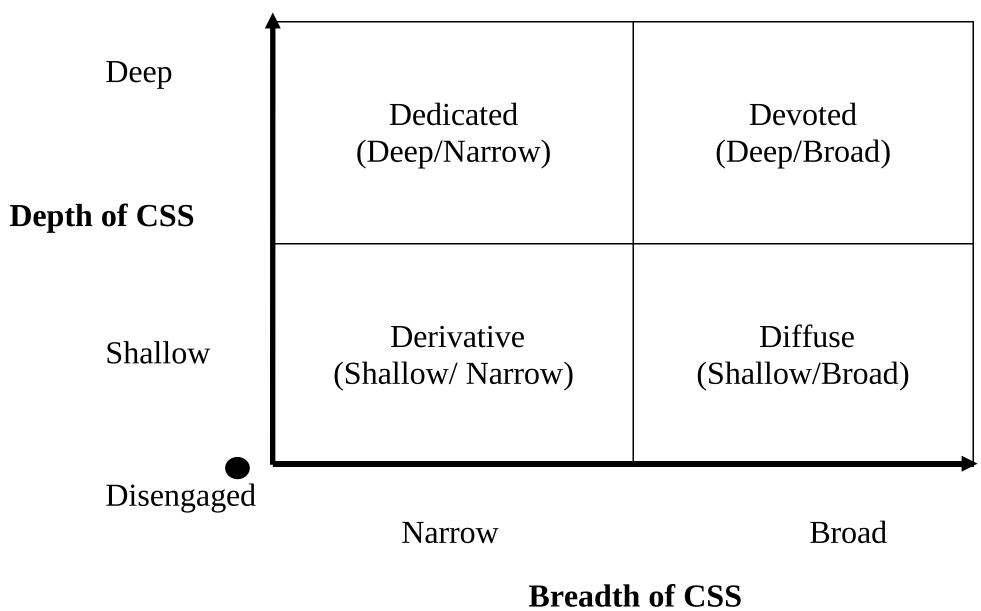
Others have put forth alternate typologies regarding this continuum of corporate social responsiveness (Maon, Lindgreen & Swaen, 2010). For example, Zadek (2004) suggested a firm's path to social responsibility starts with a defensive posture and eventually moves through several stages including compliance, managerial, strategic and finally a civil strategy regarding stakeholder and social issues. Similarly, Hunt and Auster (1990) labelled these stages of CSR as beginner, firefighter, concerned citizen, pragmatist and proactivist. However, empirical research has not yet born out a stages approach to an overarching concept of CSR, as there are only a few examples of firms with the deepest level of commitment to CSR across all stakeholders groups which is postulated to exist at the right hand side of this continuum (Googins et al., 2007).

Part of the problem, however, might be in the conceptualization of the CSR continuum as *stages* of a firm's CSR development rather than as measures of its depth of commitment to particular stakeholder or social issues. For example, Googins et al. (2007) found that no single firm had achieved the "transforming" stage of CSR as engagement with different social and stakeholder groups are often at different stages of development (from elementary to engaged, innovative and, more rarely, integrated). As such, a firm may be deeply committed to a CSS that addresses a particular stakeholder issue (e.g. employee diversity programs), but not at all engaged in other social issues (e.g. recycling programs). Under traditional measures of CSR, it would be difficult to label the overall CSS of this firm as reactive, defensive, accommodating or proactive as it may be proactive in one area and reactive in another. Only select studies make use of the continuum as it relates to a particular CSR domain (Aragón-Correa, 1998; Henriques & Sadorsky, 1999)

The stages problem has also been suggested to mask the fact that some firms can perform extraordinarily well with regards to some social issues and extraordinarily poorly with regards to others; paradoxically being both corporately socially responsible and corporately socially irresponsible at the same time (Strike et al., 2006). As such, it is argued here that rather than attempting to classify a firm's overall "stage" of CSR development as reactive, defensive, accommodating or proactive, a firm's CSS is better assessed by understanding the depth of commitment of its CEO and TMT to strategic actions pertaining to specific stakeholder or social issues.

In summary, I propose that a firm's overall corporate social strategy (CSS) can be evaluated based on these two dimensions - breadth and depth - suggesting a simple typology as depicted in Figure 2.1 below (Mazutis, 2010). The nature of the CSS chosen (broad or deep) can therefore be seen as a strategic decision along these two dimensions.

Figure 2.1: Typology of Corporate Social Strategies



A *Derivative CSS* suggests that the strategic leadership of a firm has chosen to pursue a narrow strategy, aimed at only one or a limited few stakeholder or social issues, and has done so in only a cursory manner. In this quadrant, we'll likely find companies that are resisting greater societal pressures for broader corporate involvement and may only symbolically invest in specific CSR initiatives in order to appease more vocal stakeholders. Although firms with a Derivative CSS may have acquiesced to specific industry norms by implementing one or two CSR initiatives, overall, these firms do not have a particularly strong commitment to CSR in general. In contrast, firms that have a *Dedicated CSS*, may still focus on only one or two stakeholders or social issues, but yet do so with multiple initiatives with the specific goal of serving that stakeholder or social need well.

If the CEO/TMT of a firm chooses to pursue a broader breadth of CSS, investing in a variety of different stakeholder or social issues, their commitment may still be either shallow or deep. A *Diffuse CSS* suggests that a firm is pursuing a broad breadth of stakeholder or social issues; however, its depth of commitment to any one issue is fairly shallow. These firms are engaging in very limited amount of initiatives targeting each issue, although the total number of issues addressed is large. In contrast, executives that are pursuing both a broad and a deep CSS, participating in a variety of different stakeholder and/or social issues with numerous initiatives in each category can be said to be following a *Devoted CSS*. These firms are committed to addressing the needs and demands of a broad range of stakeholders and/or actively participating in addressing a broad range of social issues.

Importantly, CEOs and TMTs may also choose not to engage in any stakeholder or social issues at all and thus not fall into any of the above CSS categories. In these cases, I argue that the firms are considered to have a *Disengaged CSS*. The decision not to participate in any CSR activities is nonetheless a strategic decision and no activity is inherently conceptually different than some or lots of activity; one cannot evaluate no activity in terms of its breadth or depth as both are zero. The decision not to invest in any corporate social strategies can therefore be seen as a strategic statement of a firm's relationship with society (Porter & Kramer, 2006) and should be treated as conceptually and empirically different than firms who are actively pursuing CSS.

The typology derived herein can thus be used to assess the nature of a firm's CSS both at a particular point in time, as well as the nature of a firm's CSS trajectory over time (Barnett, 2007). By incorporating the breadth and depth dimensions, the typology allows for the evaluation of organizational change in CSS as an adaptive process (Short, Ketchen, Bennett & du Toit, 2006) which may occur by either adding within a category (growing in depth) or expanding across categories (growing in breath) over time. In turn, these different growth trajectories may then be examined for different antecedents and/or different outcomes.

Assuming that firms can and do vary with regards to the corporate social strategies they choose to pursue (disengaged, derivative, dedicated, diffuse or devoted), the question then turns to *why* the strategic leadership of some firms choose to pursue a greater breadth or a greater depth of corporate social strategies over time than do other leaders. As introduced in Section 1.1., a possible explanation for the variation in a firm's CSS lies with the executive orientation of the firm's CEO. As this typology is rooted in strategic choice, in the next section I review the upper echelon perspective drawing particular attention to how executive orientation impacts the strategic decision making process, including decisions regarding participation or resource allocation to social and other stakeholder issues.

2.4 Upper Echelon Theory

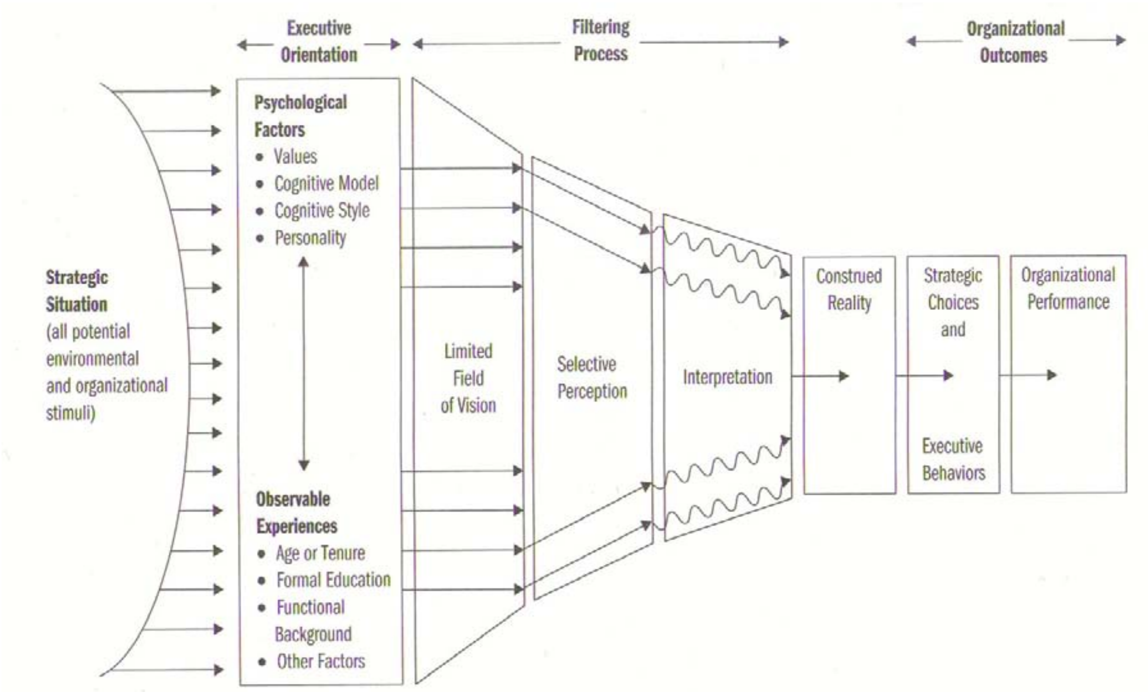
Upper Echelon or strategic leadership theory posits that a firm's strategic choices can be seen as a reflection of the values and cognitions of its CEO and top-management-team (TMT) (Hambrick & Mason, 1984). Based on bounded rationality, the theory suggests that leaders at the top of the organization interpret external pressures through a set of cognitive lenses that limit their field of vision and affect the manner in which they perceive changing environmental situations (Finkelstein et al., 2009). These filters ultimately shape how CEOs and TMTs make strategic decisions, including how they may react to changing rules of legitimate firm behaviour.[2] While understanding the relationship between top executive orientation and organizational performance is the ultimate goal of upper echelon theory, various observable experiences (e.g. demographic variables) are more often used as proxies for actual managerial cognitions in empirical investigations of selective perception (Carpenter, Geletkanycz & Sanders, 2004).

Managerial cognition thus encompasses the decision maker's cognitive base as well as his/her values (Hambrick & Mason, 1984). One's cognitive base includes knowledge/assumptions about future events, alternatives and the consequences of those alternatives, while one's values are the "principles for ordering [these] consequences or alternatives according to preference" (Hambrick & Mason, 1984: 195). Traditionally, the terms managerial cognition and executive orientation have been used somewhat interchangeably in the upper echelon literature, consisting of some combination of psychological and demographic factors that, in addition to values, may include one's

[2] Note: The discussion on cognitive lenses is not meant to imply that this process is necessarily detrimental to the firm. In fact, in many situations (e.g., dynamic environments), selective perception can result in cognitive heuristics or shortcuts that allow for more efficient information processing and ultimately faster, more efficient strategic decisions.

cognitive model, cognitive style or personality as well as observable experiences such as age, tenure, formal education and functional background amongst others (Finkelstein et al., 2009). Figure 2.2 below depicts the model of strategic choice from the upper echelon perspective.

<u>Figure 2.2: Strategic Choice Under Bounded Rationality</u>



Source: Finkelstein, S., Hambrick, D. C., & Cannella, A. A. 2009. *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. Oxford: Oxford University Press, p. 45

Executive orientation is thus a complex construct, encompassing both psychological processes and observable demographic characteristics and has alternately been referred to as executive mindset (Geletkanycz, 1997), cognitive paradigm (Henderson et al., 2006) and managerial worldview (Tetlock, 2000). In all cases, however, the underlying assumption is that individuals embody a deep spectrum of values or beliefs – religious, political, philosophical, social and cultural – that can influence strategic decision making in organizational contexts as much as in personal contexts (Finkelstein et al., 2009). Although subtle, executive orientation then differs from more malleable psychological constructs such as attitudes or leadership styles. Attitudes and leadership styles can largely be adapted to changes in external stimuli, while executive orientation will shape how external stimuli are perceived, interpreted and enacted (Finkelstein et al., 2009).

Prior research on executive orientation has tended to focus on a limited subset of "cognitive factors" or a select few demographic proxies in order to explore possible relationships between CEO (or TMT) characteristics and specific strategic choices. Again, by strategic choice, I mean decisions regarding issues that have the potential to impact a firm's strategy (Dutton & Duncan, 1987; Dutton et al., 1983; Thomas & McDaniel Jr, 1990). The manner in which strategic issues are diagnosed and interpreted at the top levels of the organization thus helps inform variances in the strategic decision making processes. Henderson, Miller and Hambrick (2006), for example, use CEO tenure (a demographic variable) as a proxy for a CEO's cognitive paradigm (a psychological variable) and test how this affects firm performance under different degrees of industry dynamism. Similarly, several studies have shown that longer tenured CEOs are more likely to engage in defender strategies characterized by stability and efficiency than shorter tenured CEOs who are more likely to undertake prospector strategies related to increased levels of innovation (Finkelstein et al., 2009).

While informative, this demographic approach falls short of explaining the underlying nature of executive orientation and how this might affect strategic choice. Certainly not all long tenured executives share the same values, beliefs, worldviews or personal ideologies. To wit, research shows that top managers may construct very different interpretations of the same strategic issue even when exposed to the same stimuli (Thomas & McDaniel Jr., 1990) and that top management commitment and support of CSR specifically will vary because of this (Henriques & Sadorsky, 1999). A key component of upper echelon theory then is that executive beliefs, values and cognitive structures as well as individual experiences, which together inform the construct of executive orientation, will influence the process of selective perception and interpretation thus influencing the choice of strategic response (Finkelstein et al., 2009), including strategic response to stakeholder and social issues.

The dependent variables in most of the upper echelon studies, however, are more "traditional" strategic decisions such as investments in innovation (Bantel & Jackson, 1989), research and development (Barker & Mueller, 2002) or acquisitions (Hitt & Tyler, 1991). Some work has also been done to understand how cognitive factors such a CEO's "commitment to the status quo" might affect strategic choices such as persistence and conformity to firm strategy (Geletkanycz, 1997). However, very little is known about how business leaders evaluate and navigate investment decisions with regards to broader stakeholder and societal issues (e.g., Waldman et al., 2006b). In fact, Finkelstein, Hambrick and Cannella's (2009) new compendium of strategic leadership research does not include a single mention of CSR, business sustainability, corporate citizenship or other analogous constructs.

Of course, the upper echelon perspective is not limited to the values and cognitions of the CEO, but also posits that the TMT as a "dominant coalition" will also affect strategic decisions and organizational outcomes (Finkelstein et al., 2009). However, extant research has demonstrated that there is a significant homogeneity of TMT perceptions with regards to their organization's environment (Sutcliffe & Huber, 1998) and that the beliefs of a focal upper echelon executive are related to the beliefs of other members of the organization's upper echelon team (Chattopadhyay, Glick, Miller & Huber, 1999). Further, research suggests that CEO effects on firm-level outcomes are stronger than those of non-CEO members of the executive team (Bertrand & Schoar, 2003). Jensen and Zajac (2004) went so far as to suggest that measuring the TMT as an aggregate unit of analysis can mask important relationships between individual elites, such as the CEO, and corporate strategy. Coupled with a myriad of other theoretical and methodological difficulties regarding measuring the executive orientation of the TMT (Cannella & Holcomb, 2005), the CEO specifically is considered the unit of analysis herein for the sake of logical simplicity.

I now turn to a review of the work done in the field of institutional theory which has relevance to both discussions pertaining to corporate social responsibility as well as to the concept of managerial discretion in the upper echelons tradition; institutional theory will be used to argue for the moderating effects of industry norms and managerial discretion on CSS.

2.5 Institutional Theory

Organizations are said to be limited in their strategic actions by external constraints and institutional pressures toward conformity (Oliver, 1991). The institutional argument centers on the idea that there are enduring institutions in social life that effect the thoughts, feelings and behaviors of individuals and collective actors (Lawrence & Suddaby, 2006). These institutions consist of the “cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior” (Scott, 1995) which therefore affect the strategic, legal and ethical norms inherent in decisions of corporate social responsibility. Due to mimetic, coercive or normative isomorphic pressures to conform to taken-for-granted social rules, firms will tend to imitate the behavior of other firms in order to gain or maintain legitimacy and increase their chances for survival (DiMaggio & Powell, 1983). For example, in a study of firms in the oil and gas, mining and forestry industries in Canada, Bansal (2005) found that institutional mimicry (e.g., conducting an environmental audit in response to industry norms) was positively associated with corporate sustainable development over time.

Legitimacy-seeking is therefore a central concept in institutional theory and is defined as what is "appropriate within some socially constructed system of norms, values and beliefs" (Suchman, 1995). At the individual level of the CEO, particularly salient is the notion of moral legitimacy which rests on judgments about whether an activity should or ought to be pursued (Suchman, 1995). Here, one could argue that regulatory, normative and cognitive institutional pressures constrain a CEOs ability to pursue strategies that might deviate from the norms of the industry lest he/she risk harming the firm's legitimacy.

Laws, regulations and other structural characteristics of the industry will impose coercive isomorphic pressures on the firm to comply with accepted standards (DiMaggio & Powell, 1983). Once a firm is established, maintaining legitimacy involves choosing strategies that protect existing accomplishments (Suchman, 1995). If the environment is turbulent or uncertain, mimetic isomorphic pressures will further push firms to copy the actions of successful organizations within their field. Normative forces such as formal education and professional networks will further constrain organizational choice as organizations strive to ensure they provide similar benefits and services as other competitors in the industry (DiMaggio & Powell, 1983).

The institutional perspective and the upper echelon perspective are thus often positioned as opposing theories regarding the role of agency in driving strategic actions (Wasserman, Nohria & Anand, 2001). However, recent work has sought to marry the two perspectives to demonstrate that CEOs and TMTs have strategic choice with regards to how to deal with these institutional pressures (Nadkarni & Barr, 2008). Oliver (1991), for example, presented a typology of organizational responses to institutional pressures that ranged on a continuum from passive to active responses including: acquiescence, compromise, avoidance, defiance and manipulation. The passive end of the spectrum can be seen as traditional responses to environmental pressures as explored by institutional theorists (imitation, compliance, accommodation) while the more active end incorporates a perspective that is closer aligned to strategic choice (e.g.: contesting rules and requirements). This is not dissimilar to Carroll's (1979) original typology of firm responses to stakeholder issues discussed earlier in this chapter. The reactive and defensive end of the corporate social responsiveness continuum is informed by institutional theory while accommodating and proactive strategies are informed by strategic choice.

Most recently, Nadkarni and Barr (2008) demonstrated that managerial cognition at the upper echelon level mediates the relationship between industry level factors (velocity, or the speed and unpredictability of changes in the industry specifically) and the speed of strategic response to changing environmental conditions. The mediation argument was built around the logic that "top managers develop subjective representations of the environment that, in turn, drive their strategic decisions and subsequent firm action" (Nadkarni & Barr, 2008: 1395). The authors showed that top managers differed with regards to their attention focus towards external environmental factors, both the task environment (aspects of the environment that have a direct impact on the firm such as competitors, suppliers and customers) as well as the general environment (more macro level dimensions of the environment such as social, demographic, economic and political factors). Given that social issues in particular are in the domain of the general external environment, it is therefore logical to deduce that top management will also develop different subjective representations of these issues which will impact the strategic decisions they make about how best to address these issues. Bridging institutional theory with the upper echelon perspective therefore, one can see how a CEO's response to industry norms regarding corporate social responsibility will also vary.

In the following section, I review the few studies that have looked at both psychological and demographic determinants of CSR in general (including analogous constructs such as corporate citizenship or stakeholder management) as well as disaggregated CSR initiatives (such as philanthropy, environmental stewardship or ethics programs). Further, I look at how industry level institutional pressures may impact this relationship. In the process, I build a set of hypotheses that link executive orientation to a firm's preferred breadth and depth of corporate social strategy. The review is closely tied to the issue interpretation literature where "the beliefs, ideologies, personal investment and commitment form what we term the 'values' that managers hold, [which] play an important role in the issues management process, specifically in the evaluation phase of issues management" (Sharfman et al., 2000: p. 145). As such, the hypotheses build on a broad review of empirical work done on different aspects of the strategic decision making model and CSR. Yet, they also incorporate the element of time in a manner that goes beyond the existing literature.

CHAPTER 3: HYPOTHESES DEVELOPMENT

Building on the literature review presented in Chapter 2, in this chapter, I construct a set of hypotheses that begins with defining the expected trends in the dependent variable - corporate social strategy, specifically the expected patterns in the adoption of CSS by firms over time (Section 3.1). I then move to explain the variance in these different rates of adoption over time from the upper echelon perspective, focusing specifically on CEO openness as a predictive executive orientation (Section 3.2). I conclude by presenting the expected moderating effects of managerial discretion and industry norms (Section 3.3) on the relationship between an open executive orientation and CSS from the perspective of institutional theory.

3.1 Patterns of Corporate Social Strategy over Time

Before examining the link between executive orientation and the rate of adoption of corporate social strategy over time, two assumptions must be further developed: 1) that there is a discernable pattern in the overall levels and rates of adoption of CSS over time and 2) that there are significant variations between firms in their initial levels and rates of adoption of CSS that can potentially be attributable to executive orientation.

Surprisingly, very little is known to date with regards to the role of time on the rate of adoption of CSS (Bansal, 2005; Barnett, 2007; Shropshire & Hillman, 2007). Rather, most studies of antecedents and outcomes of CSR, CSP or other like constructs remain cross-sectional in design, or use multiple year averages, thus implying that firm level CSS profiles are relatively stable over time (e.g., McWilliams & Siegel, 2000; Strike et al., 2006). This is not unlike broader research in strategic management that, until recently, has often either neglected the role of time all together, or relegated it to ‘error’ when exploring firm level determinants of financial performance (Misangyi, Elms, Greckhamer & Lepine, 2006; Short et al., 2006), leaving many open questions about the function of time on patterns of strategic change.

Moving beyond cross-sectional relationships, the focus herein is on the phenomenon of strategic change with regards to corporate social, environmental and other stakeholder related issues. By strategic change, I mean “a difference in the form, quality, or state over time in an organization’s alignment with its external environment” that involves significant changes in resource deployments (Rajagopalan & Spreitzer, 1997: p. 49). Strategic change is an important construct in strategy research and fundamental to discussions of firm performance in so far as adapting to environmental changes is seen as a necessary condition of firm survival (Boeker, 1997; Porter, 1980). In the context of today’s hypercompetitive dynamic contexts, ensuring continual fit between strategy and environment becomes even more critical to competitive advantage (Wiggins & Ruefli, 2005).

Yet, consensus regarding how firms should manage stakeholder and social issues remains elusive such that firms and their top managers have been left to understand, interpret and choose a response to social and environmental issues without a clear understanding as to which initiatives are most likely to yield benefits to the firm (Husted & Allen, 2011). Historically, issues pertaining to CSR have been both complex and difficult to address (Bansal, 2003, 2005; Margolis & Walsh, 2003) and are therefore likely to illicit feelings of anxiety or uncertainty amongst some executives that enforce the status quo. Research has shown that individuals will perceive issues as highly ambiguous in situations where there is little access to information or where the information is highly inconsistent (Dutton et al., 1983) as is often the case regarding information about CSR. In these instances, "uncertainty may repel rather than encourage broad and varied interest in issues" as it affects an individual's personal assessment regarding the probability of being able to take action or to resolve an issue (Dutton & Webster, 1988: p.671). In contrast, the more certain the context of strategic decision making and the higher the perceived feasibility of strategic issue resolution the greater the breadth and the diversity of issue interest (Dutton & Webster, 1988).

However, Rivoli and Waddock (2011) suggest that on the whole, over time, the ambiguity and uncertainty surrounding a social or environmental issue subsides as activities that would have once been considered 'unheard of', become normalized, expected and even required by organizations. This temporal dynamism, they argue, follows the pattern of a public issue life cycle, where an issue (e.g. child labour) first gets put forth by an interest group, then gains media attention and awareness with the general public, building pressure on organizations until finally solutions get codified into practice (Rivoli & Waddock, 2011). Although at early phases in this dynamic process, firms have considerable amount of discretion in terms of their response to the social issue, as the importance of an issue or a stakeholder group gains power, legitimacy or urgency, the salience of the issue to the strategy-environment fit increases (Mitchell et al., 1997) and mimetic and normative isomorphic pressures induce more widespread institutionalization (DiMaggio & Powell, 1983).

Although this evolution may be very slow, especially around highly contested areas such as same sex partner employee benefits (Chuang, Church & Ophir, 2011) and environmental responsibility (Hoffman, 1999), on the whole, we would expect that both the overall levels of CSS as well as the rate at which firms adopt CSS should be increasing over time (Bansal, 2005). First, the pressures on firms to address or redress negative externalities have grown over the last two decades (Waddock, Bodwell & Graves, 2002); these have ranged from issues regarding exploitative labour practices in the early 90s to ethical collapses at major corporations such as Enron, WorldCom and Tyco in the early 2000s, from increased calls for environmental responsibility post Al Gore's "An Inconvenient Truth" (2006) to the most recent progress on formal legislative equality for same sex couples. As such, the sheer *breadth* of social, environmental and other stakeholder issues that now face organizations is of a magnitude unforeseen even a decade ago (Paine, 2003).

With the increased transparency that has accompanied the internet boom, the strength of stakeholder group pressure on firms to adopt CSR practices has also increased during this same time frame (Waddock et al., 2002). While a firm may have been able to keep their CSR profile relatively private in the early 1990s, by the mid-2000s, stakeholders began to associate silence in this domain with something to hide. For example, the sheer number of emerging global standards, codes and principles (e.g. the United Nations Global Compact, ISO 14000, Fair Labour Guidelines etc.) has created an expectation of corporate accountability and transparency in social, environment and other stakeholder issue reporting, strengthening the normative pressures on all firms to comply (Bansal, 2005; Matten & Moon, 2008; Waddock et al., 2002).

This increased access to information and increased pressure from employees, suppliers, NGOs, communities and governments to be more socially responsible has progressed such that a new set of social, environmental and ethical rules has come to dominate discussions of the role of business in society (Googins et al., 2007; Paine, 2003). As Barnett (2007) explains: "When expectations of CSR increase, the value of the status quo necessarily declines" (p. 807). The increased value of positive stakeholder relations has also been reflected in the market for capital: investors are now more than ever looking to socially responsible investment (SRI) funds, with one in every eight dollars, or over $3 trillion currently invested with companies that have passed this screen (Social Investment Forum Foundation, 2010). Bird and colleagues (2007), for example, found that the market's attitude toward CSR activities has changed over time, with an increased interest in diversity, employment and environmental issues in particular. In order to meet increased stakeholder demands and to maintain access to capital, it is logical to expect that, in general, the *depth* of commitment to social or environmental issues by firms will have increased over time. Given that both the scope and the scale of social issues facing the firm have grown over the last several decades, I hypothesize that:

> *Hypothesis 1: Corporate Social Strategy follows a linear increasing trajectory over time, such that (a) the aggregate corporate social strategy, (b) the breadth of corporate social strategy and (c) the depth of corporate social strategy pursued by firms, on average, will increase over time.*

However, despite overall increases in CSS over time, the individual response of organizations to the increasing pressures may nonetheless differ such that the overall levels and rates of adoption of social, environmental and other stakeholder programs varies both within firms and between firms and industries over time (Googins et al., 2007). Change within organizations is difficult (Hannan & Freeman, 1984), and change with regards to shifting stakeholder pressures may be even more so (Hoffman, 1999). As such, despite arguments that a great deal of homogeneity exists in firm's responses to social and environmental issues, as noted in the introduction, some firms appear to have embraced expanded notions of corporate social responsibility, while others take the perspective that the only social responsibility of business is to increase profits (Friedman, 1970).

Basu and Palazzo (2008) suggest various cognitive, linguistic and conative differences that can be observed in organizational sensemaking around CSR issues that can explain observed variations in a firm's CSR 'character'. For example, organizations have different identity orientations (individualistic, relational and collectivist) that will affect how they think, as an organization, about social and environmental issues. Similarly, Barnett (2007) suggests that firms develop varying capacities to deal with stakeholder issues which in turn will affect their CSR efforts over time. Further, research using the stages approach as detailed in Section 2.3.2, imply that at any point in time firms will differ with regards to the approach taken (e.g., reactive, defensive, proactive) to a variety of social and stakeholder domains (Maon et al., 2010). As such, it follows that:

> *Hypothesis 2: Firms will differ significantly in their initial levels of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy.*
>
> *Hypothesis 3: Firms will differ significantly in their rates of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy over time.*

One of the main drivers of this variance has been hypothesized to rest with the firm's senior leaders (Waldman et al., 2006b; Wood, 1991). As such, I now turn to a detailed exploration of the relationship between executive orientation and CSS.

3.2 The Effect of Executive Orientation on Corporate Social Strategies: The Role of CEO Openness

As introduced in the literature review, executive orientation is a complex construct that includes both psychological and social factors such as a CEO's values, beliefs, cognitions, attitudes, personality traits and worldviews as well as demographic proxies that reflect variations in executive life experiences, such as educational, functional and international background (Finkelstein et al., 2009). These factors combine to inform a CEO's executive orientation which in turn shapes the process of selective perception, interpretation and construed reality that affects strategic decisions as depicted in Figure 2.2 (Finkelstein et al., 2009; Hambrick & Mason, 1984).

I argue here that CEO openness in particular can be used as a unifying concept that combines a diverse set of research on both CEO cognitions as well as demographic proxies that have been shown to influence strategic choice in organizations. Research on individual openness has a rich history in numerous disciplines, including psychology (Judge, Bono, Ilies & Gerhardt, 2002; Schwartz, 1996), sociology, organizational behaviour (e.g., Berson, Oreg & Dvir, 2008), political (Sowell, 1987) as well as ethical philosophy, where openness was first associated with the virtue of wisdom by the ancient Greeks (Peterson & Seligman, 2004). Furthermore, although not always explicitly classified as a value, trait or other cognitive disposition, CEO and TMT openness has been extensively invoked in the upper echelons and strategic change literatures as a predictor of strategic decisions in organizations (e.g., Datta, Rajagopalan & Zhang, 2003; Wiersema & Bantel, 1992).

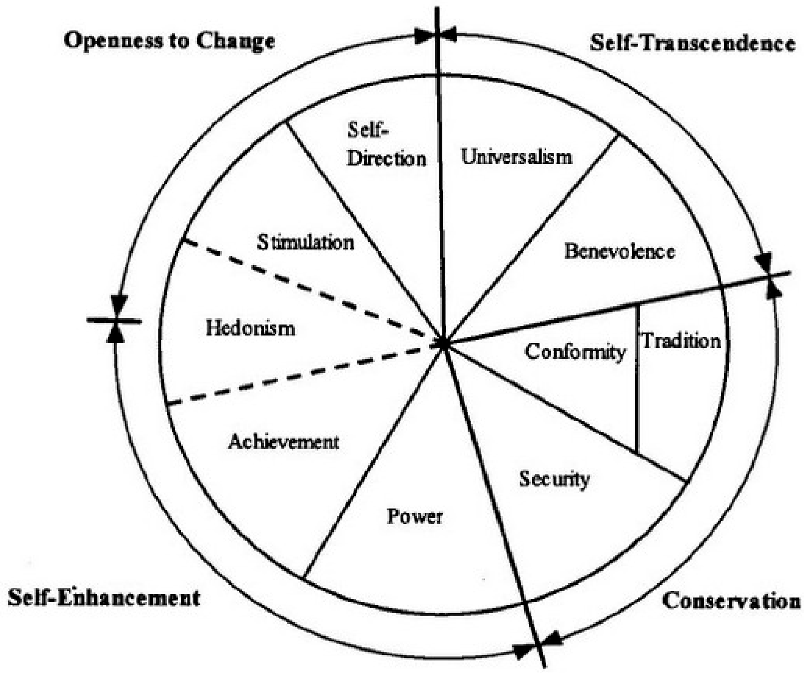
In this section, I begin by reviewing the research on openness in general – first as 'openness to change' which has been shown to be a universal motivational value by Schwartz and colleagues (Schwartz, 1996; Schwartz & Bilsky, 1987; Schwartz & Boehnke, 2004) amongst others, and second as 'openness to experience' which has been demonstrated to be one of the Big Five personality traits emerging out of the field of psychology (e.g., Judge, Piccolo & Kosalka, 2009). I then move into an exploration of various CEO characteristics that have shown to be reflective of an open executive orientation (liberal worldview, functional background, educational background and international experience)(Finkelstein et al., 2009), building a series of direct effect hypotheses linking an open executive orientation to the initial levels and rates of adoption of CSS by firms over time. I conclude with a discussion of possible moderators of the relationship between executive orientation and CSS.

3.2.1 Openness to Change

Individual openness to change has been extensively studied as a motivational value that drives individual behaviour (Hitlin & Piliavin, 2004). By motivational value, I mean desirable, transituational goals that serve as guiding principles in people's lives (Schwartz, 1996: p.2), exerting internal pressure for individuals, including executives, to behave in a certain way (Illies & Reiter-Palmon, 2008). Values are "enduring beliefs that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state" (Rokeach, 1973) and "conceptions of the desirable that influence the way people select action and evaluate events" (Schwartz & Bilsky, 1987: p. 550). As such, values are important drivers of behavior and can be prioritized in a hierarchical manner such that preference is given to certain values over others (Locke, 1991; Schwartz & Bilsky, 1987).

Schwartz (1996) and his colleagues have identified and validated a set of ten universal values that can be found across a broad range of social, religious and cultural groups. As depicted in Figure 3.1, these universal values are further distinguished along two axes: openness to change (stimulation, self-direction) vs. conservation (tradition, conformity, security) as well as self-enhancement (power, achievement, hedonism) vs. self-transcendence (universalism, benevolence). The circular structure of these values has been confirmed in various studies that support the finding that competing dimensions do, in fact, form polar opposites to each other (Bardi & Schwartz, 2003; Schwartz, 2005; Schwartz & Boehnke, 2004). This means that pursuing opposing values simultaneously is unlikely given competing motivational cores (Locke, 1991) - for example, seeking excitement and novelty (pursuit of stimulation values) is likely to circumvent behaviours that restrain actions and inclinations (pursuit of conformity values) which lie on opposite poles of the structure (Schwartz, 1996: 4).

Figure 3.1: The Structure of Value Systems



Source: Schwartz, S. 1996. Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson and M. P. Zanna (Eds.), The Ontario Symposium: Vol. 8. The psychology of values (p. 1-24). Hillsdale, NJ: Lawrence Erlbaum, p. 4.

Unsurprisingly, the vast majority of the research that has looked into the relationship between individual values and some facet of corporate social responsibility or related construct focuses on the self-transcendence vs. self-enhancement poles. For example, the self-transcendence values of benevolence and universalism have been linked to ethical and socially responsible behaviour and attitudes (Crilly, Schneider & Zollo, 2008; Fukukawa, Shafer & Lee, 2007; Illies & Reiter-Palmon, 2008; Shafer, Fukukawa & Lee, 2007), while self-enhancement values such as power and achievement, appear to be positively related to destructive decisions in scenarios involving bribery, coercion, deception, theft or discrimination (Fritzsche & Oz, 2007; Illies & Reiter-Palmon, 2008). Similarly, several authors have suggested that personal idealistic/altruistic motives or benevolence values need to be taken into account as managerial drivers of CSR initiatives

(Choi & Wang, 2007; Hemingway & Maclagan, 2004). Egri and Herman (2000) found that managers in the environmental sector in particular attributed higher importance to self-transcendence values as compared to managers in general. Agle, Mitchell and Sonnenfeld (1999) also argue that a CEO's self vs. other direction values should help determine the strength of stakeholder salience in organizations.

Because values influence how people evaluate situations and make choices regarding these situations (Feather, 1995; Hitlin & Piliavin, 2004), it seems evident that individuals who are motivated by self-transcendence values will evaluate, interpret and make different decisions regarding CSR than individuals who are motivated by self-enhancement motives. Less clear, however, is how the opposite poles - openness to change vs. conservation values - may affect individual perceptions and interpretations of corporate social responsibility (Crilly et al., 2008). Schwartz (1996) describes the opposing dimensions of openness vs. conservation as the "conflict between emphases on own independent thought and action and favoring change versus submissive self-restriction, preservation of traditional practices and protection of stability" (p. 5). Openness to change thus encompasses self-direction and stimulation values while conservation values include security (safety, harmony and stability of society, of relationships, and of self), conformity (restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms) and tradition (respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self) (Schwartz, 1996: p. 3).

In the few CSR/ethics related studies that have included the openness to change and conservation axes, associations between an individual's openness and ethical, social and environmental decision making have been mixed: some have found no relationship between openness/conservation and ethical decision making (Fritzsche & Oz, 2007), while others report both marginally significant *negative* relationships between traditional values (as part of the conservation construct) and support for corporate and environmental accountability (Fukukawa et al., 2007) as well as *positive* relationships between conformity and the importance of being ethical and socially responsible (Shafer et al., 2007).

This may not be all together surprising, as CSR is an inherently ambiguous concept (see Section 2.1) and challenges traditional perceptions of the role of business in society (Friedman, 1970). As a result, no overarching consensus on how firms should manage stakeholder and social issues has emerged, rendering issues related to CSS as both complex and difficult to address (Bansal, 2003, 2005; Margolis & Walsh, 2003). In this scenario, adoption of CSR policies may be perceived by some strategic leaders as an opportunity and by others, as a challenge to the existing status quo. For example, CSS may incorporate contested 'new' initiatives supporting a diverse workforce, including protection and promotion of women, visible minorities and gay/lesbian rights. CEOs with an open executive orientation may embrace the adoption of these initiatives, while others may perceive the pursuit of these policies to be in conflict with their conformity and tradition values. "Leaders who possess strong security values focus on the creation and preservation of clear and explicit practices. To maintain stability and order these leaders are likely to employ set routines and to determine clear and strict rules and procedures" (Berson et al., 2008: p. 618-619) that serve to maintain the status quo.

The strategy literature is replete with examples that investigate both the determinants and the outcomes of senior leadership commitment to the status quo. McClelland, Liang and Barker III (2010) summarize a CEO's commitment to the status quo as a belief in the enduring correctness of current organizational strategies and profiles. As such, conservation values which are tied to security, conformity and tradition values may slow adoption of new CSR policies such that firms run by CEOs with a less open executive orientation may have narrower and shallower corporate social strategies.

For example, in a study of 35,000 European respondents, Schwartz found support that individuals driven by openness to change values were more likely than individuals driven by conservation values to support the statement that "gay men and lesbians should be free to live their own life as they wish" (Schwartz, 2005: p. 3-4). Similarly, expanding the firm's mandate into the realm of environmental issues may also require openness to change. To wit, Egri and Herman (2000) found that environmental managers displayed a greater degree of openness to change than did other corporate managers.

The competing openness to change vs. conservation poles of the universal system of values thus has the potential to inform hypotheses regarding executive orientation and corporate social strategies. As openness to change implies a broader scope regarding the selective perception and hence interpretation process, an open executive orientation may affect both the choice of extending the depth of CSS in an area (e.g., adding gay/lesbian rights to existing diversity efforts) and expanding the breadth of CSS outside more traditional approaches to CSR (e.g., from a singular focus on philanthropy, to instigating environmental initiatives).

3.2.2 Openness to Experience

Parallel to the discussion of openness to *change* as a motivational value, psychologists have recently converged on a five factor model of individual personality traits which include openness to *experience*. The Big Five personality traits, as they are often called, are said to capture, on the whole, most of the salient dimensions of various existing personality inventories (Judge et al., 2002; Judge et al., 2009) and include: openness to experience, agreeableness, conscientiousness, extraversion and emotional stability. Similar to individuals who are open to change, individuals who are open to experience are said to display curiosity, creativity and flexible thinking (Thoresen, Bliese, Bradley & Thoresen, 2004), tend to be imaginative, nonconforming, unconventional and autonomous (Judge et al., 2002) and intelligent, perceptive, tolerant, cultured and inquisitive (Judge, Thoresen, Pucik & Welbourne, 1999). Furthermore, "because of their broad interests, divergent thinking, and receptiveness to a wide range of stimuli, CEOs with high openness to experience are likely to develop broad fields' of vision by considering multiple strategic perspectives" (Nadkarni & Herrmann, 2010: p. 1056).

Strategy researchers have long called for a more comprehensive use of personality theory in strategic leadership research (Cannella & Monroe, 1997), yet the area remains underdeveloped (Nadkarni & Herrmann, 2010). Rather, the trait-based approach to leadership, which dates back to the 1930's and 1940's, fell out of favour with Stogdill's (1948) influential review that concluded that there was little theoretical justification to link personality characteristics to effective leadership (Peterson, Smith, Martorana & Owens, 2003).

However, in a recent meta-analysis, Judge and colleagues (2002) found evidence that the Big Five personality traits are, in fact, to varying degrees, both determinants of leadership emergence and of leadership effectiveness in general (Judge et al., 2002). As a result, trait-based theories of leadership have recently seen a resurgence of interest, with new studies on the organizational effects of executive dispositions such as narcissism (Chatterjee & Hambrick, 2007) and hubris (Hiller & Hambrick, 2005) as well as direct tests of CEO Big Five personality traits on various organizational outcomes. For example, Peterson et al. (2003) found that CEO openness was significantly related to TMT risk-taking and intellectual flexibility, while Nardkarni & Herrmann (2010) demonstrated that it was related to strategic flexibility. At the manager level, openness to experience has been shown to be a key factor in risk tolerance (along with low risk aversion and tolerance for ambiguity) which was then found to be positively related to coping with organizational change (Judge et al., 1999).

The Big Five personality trait of conscientiousness also has some similarities to the motivational value of conservatism in that conscientiousness reflects the degree to which someone is committed to established rules (Peterson et al., 2003). As CEO's high on conscientiousness "rely almost exclusively on known strategies and selectively ignore new and unique strategies that challenge their existing assumptions, they are likely to develop narrow fields of vision and selective perception bias that predisposes them to ignore environmental stimuli that do not match existing assumptions" (Nadkarni & Herrmann, 2010: p. 1053). Of all of the Big Five personality traits, CEO conscientiousness was the only disposition found to inhibit strategic flexibility at the firm level (Nadkarni & Herrmann, 2010).

Both openness to change and openness to experience are thus pertinent to the discussion regarding the degree to which a CEOs field of vision will include CSR as either an opportunity or a threat (Aragón-Correa & Sharma, 2003), in turn affecting strategic decisions both regarding the overall depth of commitment to CSS as well as the rate of adoption of social and environmental initiatives over time. For example, Sharma et al. (1999) demonstrated that the variance in environmental responsiveness strategies can be attributed to how managers interpret environmental issues. If managers perceive the environmental issue as an opportunity, they pay more attention to information about the potential gains from environmental initiatives and develop a more proactive environmental strategy. In contrast, other managers “clearly expected a loss to accrue from issues having to do with the natural environment” (Sharma et al., 1999: p.100) and were therefore less open to pursuing deeper engagement on environmental issues.

In summary, research has suggested that executive openness to experience is an antecedent to strategic change and that one might expect individuals high on openness to experience, “in a strategy-making context, to be more prone than closed individuals to undertake proactive strategies whose outcomes are unknown” (Mullins & Cummings, 1999: p. 470). In what follows, I extend the link between openness and strategic change in organizational and institutional environments to decisions pertaining to social, environmental and other stakeholder issues.

3.3 Openness as an Executive Orientation

Combining elements of openness to change and openness to experience, in the upper echelon literature, CEO openness is characterized as an executive orientation that is “a composite of such facets of CEO personality as awareness of multiple perspectives, valuing discourse and debate, and openness to new ideas” and has been described as “a virtual prerequisite for adaptability to changing circumstances” (Finkelstein et al., 2009: p. 149). Recently, CEO openness to change has been conceptualized as a combination of CEO age, tenure and education level (Datta et al., 2003) or age, tenure and functional background (Musteen, Barker III & Baeten, 2006). However, CEO openness has been effectively gauged by several characteristics of which the most pertinent to a discussion of CSS include: functional background, functional breadth, international experience and educational specialization which are discussed in this section. I begin, however, by introducing a less studied characteristic that may be an even more direct reflection of CEO openness – CEO liberal worldview.

3.3.1 CEO Liberal Worldview

A particularly salient, yet overlooked, line of inquiry with regards to individual openness originates in both the political science and psychology literatures. Here, an extensive body of research illustrates the sharp differences in issue perception and interpretation of individuals who embrace a liberal vs. conservative political worldview (Haidt & Graham, 2007; Jost, Glaser, Kruglanski & Sulloway, 2003; Thorisdottir, Jost, Liviatan & Shrout, 2007). According to motivated social cognition theory, individuals embrace a conservative worldview in a desire to avoid change, disruption and ambiguity (Jost et al., 2003; Thorisdottir et al., 2007). Furthermore, a conservative ideology serves to reduce fear, anxiety and uncertainty and helps rationalize inequality amongst individuals. In contrast, people with a liberal ideology have been found to score higher on measures of 'openness to experience' and 'uncertainty tolerance' demonstrating different psychological needs that subsequently affect the management of uncertainty and threat (Fay & Frese, 2000; Thorisdottir et al., 2007). As such, the openness to change vs. conservation values divide has been explicitly likened to the liberal vs. conservatism chasm in the political and psychology literatures (Feather, 1995) and may be an important predictor of CEO interpretations of CSR issues as opportunities or threats.

With regards to understanding the variations in interpretations as they pertain to CSS in organizations, Tetlock (2000) found evidence that conservatives are more likely than liberals to endorse the dominant shareholder model of corporate governance over the broader stakeholder model. Further, conservatives were more likely than liberals to support policies that boost profits but hurt racial minorities and the poor (Tetlock, 2000). These worldviews extended to employee evaluations of senior leadership as well. For example, he found that conservative employees “judged top management more favourably when it favoured a monistic accountability regime centered around shareholders” while egalitarians (liberals) attributed “the most positive traits to top managers who endorsed the pluralistic regime of accountability to stakeholders” (p.314). Tetlock (2000) concluded that the stand one took on the shareholder/stakeholder debate “reflected abstract political sympathies (property rights of well-capitalized principals versus human rights of economic underdogs)” (p.314) and that political ideology emerged in his study as a consistent predictor of “the value spins that managers placed on decisions” (p.293).

In this way, one can understand individual judgement and cognitive bias as stemming from deep epistemological and ideological world views (Tetlock, 2000: p. 296) that can, in turn, predict managerial reactions to a broad assortment of issues. Yet, surprisingly, the political science and psychology literatures on the subject of political ideologies have not hitherto been integrated into the upper echelon perspective. In fact, despite a rich history of assessing the political contributions of *organizations* in the strategy field (under the umbrella of non-market strategies)(Hillman, Keim & Schuler, 2004), very little has been done to understand the nature of *individual* political dispositions of top executives (Burris, 2001).

However, following the logic of motivated social cognition theory described above, it could be argued that CEOs, who identify with a more conservative philosophy, are less likely to be open to embracing the changing nature of the social, ethical and environmental demands being imposed on businesses at the turn of this century (Paine, 2003). Despite calls for increased corporate social responsiveness, research has suggested that “between 1980-2000, goal ambiguity for publicly traded U.S. corporations [in fact has] greatly diminished…an emphatic culture of “shareholder value” emerged. In the past, a broad set of corporate objectives – such as increased size, stable employment, and corporate “citizenship” – had been viewed as plausible goals for firms to pursue…, but in more recent years the maximization of shareholder value became paramount” (Hambrick, Finkelstein, Cho & Jackson, 2004: p. 319). In this context, deviating from the shareholder primacy norm requires an individual openness to change, openness to new experiences and a tolerance for ambiguity and uncertainty.

I contend that this openness to change and tolerance for ambiguity is more likely found in CEOs with a liberal vs. conservative worldview. “The core ideology of conservatism stresses resistance to change and justification of inequality and is motivated by needs that vary situationally and dispositionally to manage uncertainty and threat” (Jost, 2003: 339). Fay and Frese (2000), for example, found that conservatives had more difficulty adapting to the “new requirements that evolve with tomorrow’s jobs” (p.171), including issues pertinent to CSR such as a woman’s right to work. In a meta-analysis of 88 samples, across 12 countries which included over 22,000 cases, Jost et al. (2003) confirmed that several psychological variables including intolerance of ambiguity, uncertainty avoidance, fear of threat and loss all predict politically conservative worldviews.

Furthermore, it has been suggested that these psychological variables, especially political ideology, are fixed in theories of personality, epistemic and existential needs and ideological rationalizations (Jost et al., 2003) and are thus mostly ingrained and stable over time (Burris, 2001). From an upper echelon perspective, Henderson et al. (2006) went so far as to argue that "although a CEO's paradigm may show some elasticity when faced with the need for change, it will be the rare executive who can greatly transform his or her mindset, aptitudes, and skills" (p.447). Given that an individual's worldview, in particular his/her political ideology reflects differing degrees of openness, and therefore affects the selective perception and interpretation of external stimuli, a CEOs liberal vs. conservative worldview is likely to affect the overall scope, breadth and depth of a firm's corporate social strategy. As such, I hypothesize that:

> *Hypothesis 4: Firms run by CEOs with a liberal worldview will have a higher initial level of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs with a conservative worldview.*

> *Hypothesis 5: Firms run by CEOs with a liberal worldview will have a higher rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs with a conservative worldview.*

3.3.2 Functional Background

It has been suggested that CEO's openness to change in particular can also be ascertained by understanding their functional background (Musteen et al., 2006), with most research pitting CEOs from output functions (e.g., marketing, sales) against CEOs with a dominant career background in throughput functions (e.g., accounting, finance) (Finkelstein et al., 2009). Specifically, because careers in marketing or sales emphasize growth and require an openness to new product and market opportunities, executives with a dominant background in output functions are more likely to be open to initiatives that require risk and change, such as R&D (Barker & Mueller, 2002) or international acquisitions (Matta & Beamish, 2008). In contrast, executives who have a dominant career history in throughput functions "have a more conservative stance toward change because of the emphasis that the throughput functional areas place on maintaining control, improving efficiency and adherence to planned targets" (Hambrick & Mason, 1984; Musteen et al., 2006: p. 606)

Although there have been contradicting studies on the role of functional experience in selective perception (e.g., Dearborn & Simon, 1958; Walsh, 1988), there is enough evidence to suggest that executives from specific functional backgrounds are likely to rely on cognitive heuristics or shortcuts especially in cases where the strategic stimuli is ambiguous and executives have less time to consider it (Finkelstein et al., 2009). As such, CEOs with a dominant functional background in throughput functions may specifically resort to established rules, regulations and procedures and are thus less likely to be willing to look at initiatives that broaden or deepen a firm's commitment to CSR. In fact, in the few studies that have looked at the relationship between functional background and CSP, it has been shown that firms that have scored high on CSP measures are more likely to be lead by CEOs with backgrounds in output functions such as marketing, research and product development vs. throughput functions such as engineering, accounting and finance (Slater & Dixon-Fowler, 2009; Thomas & Simerly, 1994).

A CEOs career history is also determined by the variety of functions to which he/she has been exposed, with the greater the breadth of functional experience, the greater the exposure to different modes of thinking, problem interpretation and solution generation (Rajagopalan & Datta, 1996). The willingness to work at various different functional positions can also be seen as a direct reflection of an individual's openness to experience as well. With regards to CSP in particular, research has demonstrated that the breadth of a CEO's functional background in 'stakeholder' functions (marketing, sales, operations, R&D, public relations, medical/education/government service) is, in fact, related to CSP strengths (Manner, 2010), while in the general management literature, Geletkanycz and Black (2001), found that functional diversity is negatively associated with commitment to the status quo (or positively associated with strategic change). A CEO's breadth of functional background thus supports arguments regarding the broadening effects of job rotations on the receptivity to new ideas, new ways of thinking and operating which may be pertinent to expanding notions of a corporation's role in society.

Interestingly, Beyer et al. (1997) found that functional background, while not necessarily related to an executive's selective perception, is related to selective *imperception* concluding that "functional experience does not increase managers' attention to related information but instead tends to restrict the areas of information to which they pay attention…managers' functional experience tends to narrow their cognitive processing" (p.730). Functional conditioning can therefore serve to either broaden or restrict the areas to which one pays attention and thus the subsequent strategies one chooses to pursue; executives with a more diverse functional background will have a broadened field of vision thus perceiving and acting on a broader set of stakeholder or social issues. Executives with a less diverse functional background, on the other hand, may be prone to selective imperception, not perceiving the saliency of certain stakeholder or social issues and thus disengaging from corporate social strategies. This again, suggests that a CEO's functional background may explain why some firms do, or do not, pursue stakeholder or social issues in varying degrees over time such that:

Hypothesis 6: Firms run by CEOs with dominant functional experience in output functions will have a higher initial level of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs with dominant functional experience in throughput functions.

Hypothesis 7: Firms run by CEOs with dominant functional experience in output functions will have a higher rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs with dominant functional experience in throughput functions.

Hypothesis 8: Firms run by CEOs with a greater breadth of experience in multiple functional areas will have a higher initial level of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs with a narrower breadth of experience in multiple functional areas.

Hypothesis 9: Firms run by CEOs with a greater breadth of experience in multiple functional areas will have a higher rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs with a narrower breadth of experience in multiple functional areas.

3.3.3 International Experience

A CEO that has lived or worked abroad has demonstrated, to a degree, openness to experience and research has shown that a CEO's level of international experience can have a direct or indirect affect on firm level strategies including level of diversification and financial performance (Carpenter & Fredrickson, 2001; Carpenter, Sanders & Gregersen, 2001; Daily, Certo & Dalton, 2000; Finkelstein et al., 2009). For example, Carpenter and Fredrickson (2001) demonstrated that the international experience of the TMT is positively related to a firm's global strategic posture which includes the proportion of foreign sales, foreign production and geographic diversity. Similarly, Roth

(1995) found that CEOs with international experience had a strong positive impact on firm performance in cases with high international interdependence (vs. low interdependence) and Herrmann and Datta (2002) found that CEO international experience was positively related to the strategic choice of full-control foreign market entry (greenfield investments or acquisitions) over shared-control entry (joint ventures, contractual agreements).

The logic behind these arguments is that CEO or TMT international experience brings with it increased skills and abilities to manage in different cultures and contexts that diminish the "idea of foreign" with regards to individual values and cognitive orientations (Herrmann & Datta, 2002). This reduces levels of uncertainty and broadens a CEOs perception of external stimuli (Finkelstein et al., 2009). "Executives often report that their international assignment experience has lasting impacts on their worldviews and how they manage their firms" and that "their perceptions and personality take on a more international orientation resulting in a global mindset as a result of exposure to different value systems and institutional environments" (Slater & Dixon-Fowler, 2009: p. 476). Slater and Dixon-Fowler (2009) suggest that international experiences may also lead to increased interest in world political and social issues, greater open-mindedness and an increased sense of responsibility and empathy that can lead to greater corporate social performance. Testing the relationship between CEO international experience and an aggregate score for CSP, Slater and Dixon-Fowler (2009) found support for this positive relationship.

As such, I argue that CEOs with international experience are better equipped not only to manage the financial challenges of competing in global markets, but also to address ambiguous and complex global social challenges such as human rights, the environment, peace, conflict and justice. This increased cognitive ability will thus allow CEOs with international experience to better navigate distal, ambiguous, indirect, and unpredictable social and environmental issues. Having been exposed to business in an international environment, CEOs with international experience will therefore also have a broader selective perception and issue interpretation filter than CEOs with a purely domestic resume, allowing them to enact both broader and deeper corporate social strategies over time. As such, I hypothesize that:

> *Hypothesis 10: Firms run by CEOs with international experience will have a higher initial level of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs without international experience.*
>
> *Hypothesis 11: Firms run by CEOs with international experience will have a higher rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs without international experience.*

3.3.4 Educational Background

Various studies have suggested that an executive's educational background will shape the nature of the strategies they choose to pursue and may thus also be important to strategic decisions pertaining to CSR. Educational background might refer to both the amount of formal education obtained (high school through to graduate school) as well as the nature of the degree obtained (e.g. law, business, engineering etc.). Studies often suggest that the greater the level of education obtained the greater an individual's level of cognitive ability (Hitt & Tyler, 1991). For example, various authors have found that key strategic decision makers with higher levels of education are more willing to engage in complex resource allocation decisions such as investments in innovation (Bantel &

Jackson, 1989; Kimberly & Evanisko, 1981) or diversification (Wiersema & Bantel, 1992). Datta, Rajagopalan and Zhang (2003), for example, argue specifically that CEO educational background is a key component of openness to change and found in turn this is negatively related to strategic persistence (a similar construct to commitment to the status quo). Similarly, Schwartz (2005) also found a direct negative correlation between greater levels of education and traditional conservation values which are diametrically opposed to openness to change.

However, we might expect to find a different relationship between the nature of the degree obtained and openness to change. Although cognitive ability may increase, certain specializations (e.g., MBA, JD/LLB) may in fact reinforce conservation values over openness to change values. In reviewing the effect of an MBA education on strategic choices in particular, Finkelstein et al. (2009) conclude that the behavior of MBA educated executives does in fact differ from executives without MBAs in that they are more likely to follow "financial textbook guidelines" to avoid big losses or mistakes. This seems to imply that an MBA education may influence strategic decisions such that these are more conformist to trends in the industry (Finkelstein et al., 2009: p. 110).

With regards to CSR in particular, scholars have suggested that business school agendas have contributed, in part, to the ethical and moral collapse witnessed in the early years of this century by promulgating an "ideology based gloomy vision" of the self-interested profit-maximizing homo economicus and his/her role in society (Ghoshal, 2005). The popular press mirrors this perspective in that executives with MBAs are assumed to pursue greedy or selfish wealth accumulation over a broader stakeholder or social issue participation approach to management. For example, in a recent editorial about the causes of the current financial crisis, the Economist scathed:

> "Most of the people at the heart of the crisis—from Dick Fuld at Lehman Brothers to John Thain at Merrill Lynch to Andy Hornby at HBOS—had MBAs after their name (Mr Hornby graduated top of his class at HBS). In recent years about 40% of the graduates of America's best business schools ended up on Wall Street, where they assiduously applied the techniques that they had spent a small fortune learning. You cannot both claim that your mission is "to educate leaders who make a difference in the world", as HBS does, and then wash your hands of your alumni when the difference they make is malign" (Economist, September 24, 2009)

.

In a similar vein, research has shown that both undergraduate business students (McCabe & Treviño, 1995) and graduate business students are more likely to cheat than students in other disciplines (McCabe, Butterfield & Treviño, 2006). Similarly, a series of experiments in the area have demonstrated that economics students are more likely than other students to free-ride, keep more resources to themselves, defect in a prisoner's dilemma game, donate less to charity, be more corruptible and make choices that benefit themselves rather than their companies (Ferraro et al., 2005). Economics training emphasizes the assumption of self-interest as a predictor of how people will behave and thus also acts as a strong norm that in turn influences students to behave in a self-interested manner (Daboub, Rasheed, Priem & Gray, 1995; Krishnan, 2008).

Having reviewed the extensive literature in the area, Ferraro et al. (2005) conclude that "the argument and empirical implication are straightforward: one effect of economics training is to strengthen beliefs in the pervasiveness, appropriateness, and desirability of self-interested behaviour, which, in turn, should lead to exhibiting more self-interested behaviour" (p.14). Although economics training and MBA training differ, they share many of the same underlying assumptions about the nature of human behavior (Ghoshal, 2005) such that enhancing shareholder value becomes more important for MBA students over the course of their training than does serving customers or employees (Pfeffer, 2005). Ghoshal (2005) goes so far as to argue that the management theories espoused by business schools have actively “freed business students from any sense of moral responsibility” regarding the consequences of their strategic decisions on broader stakeholder groups and society as a whole.

Other research has corroborated this claim, showing specifically that MBA students, regardless of functional background (production, sales, marketing, finance etc.), tend to pay less attention to human resource (HR) issues (Beyer et al., 1997). Similarly, MBA students were less ethically sensitive to issues affecting societal issues than agent or principal issues (Simga-Mugan, Daly, Onkal & Kavut, 2005). Perhaps most shockingly, Williams, Barrett and Brabston (2000) found that TMTs with more MBAs moderated the relationship between firm size and corporate illegal activity, such that TMT with more MBAs had more Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) violations than TMTs with fewer MBAs. Finkelstein et al. (2009) therefore suggest that executives with MBAs may have a cognitive bias against the “softer” side of business, which includes HR, employee and other stakeholder issues. This is speculated to be related to the nature of the MBA curriculum which emphasizes the financial (aka “rational”) business imperatives over the people dimensions of business relations. Bertrand and Schoar (2003) demonstrated, for example, that “CEOs with MBAs appear to be on average more aggressive, choosing to engage in a higher level of capital expenditures, hold more debt, and pay less dividends” (p. 1204) than CEOs without MBAs.

In the end, Finkelstein et al. (2009) suggest that: “left unanswered in all this is whether the shareholder maximization ethic of MBA-educated executives affects the firm’s attention to other stakeholders, such as customers, employees, and communities” (p. 110). Given the above research however, it would be logical to propose that MBA curricula do in fact emphasize shareholder maximization above all other responsibilities promoting the economic norm of self-interest as the dominant paradigm. As such, in a process of selective perception or imperception similar to that of continuous narrowing of focus related to functional background, executives with MBAs will be less likely to pay attention to stakeholder or social issues and therefore less likely to invest in broad or deep corporate social strategies. Given this research, I would expect that:

> *Hypothesis 12: Firms run by CEOs with MBAs will have a lower initial level of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs without MBAs.*

> *Hypothesis 13: Firms run by CEOs with MBAs will have a lower rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs without MBAs.*

A similar argument can then be made for other degree programs that may also induce a conservative approach to dealing with stakeholder or social issues. Like the effects of functional background, specialization in a field such as law, may also affect an executives' selective perception, interpretation and choice in the strategic decision making process (Hitt & Tyler, 1991). CEOs from these highly specialized educational backgrounds have gone through an educational process that ensures they will "view problems in a similar fashion, see the same policies, procedures and structures as normatively sanctioned and legitimated, and approach decisions in much the same way" (DiMaggio & Powell, 1983: p. 153). Although they belong to professional associations that mandate ethical behaviour, they nonetheless are subject to strong normative forces to maintain the status quo. As a result, they may be less open to change regarding social and environmental programs than CEOs from a less specialist educational background.

Although little empirical work has been done to distinguish the impact of particular specialist degrees on firm level outcomes, some research has shown that executive degree type will effect strategic choice (Hitt & Tyler, 1991) and that educational specialization heterogeneity among the TMT members is necessary for changes in corporate strategy (Wiersema & Bantel, 1992). In addition, Barker and Mueller (2002) found that CEOs with legal degrees were less likely to spend on R&D arguing in a footnote that legal programs are more likely to attract individuals that are less open to innovation in general. With regards to CSR, no research of which I am aware has looked at the impact of a law degree on the levels or rate of adoption of CSS. However, Manner (2010) found that CEOs with bachelors degrees in the humanities rather than in economics/management were more positively related to corporate social strengths, arguing that this type of educational background provides the broader perspective required to face stakeholder decisions. As such, I expect that:

> *Hypothesis 14: Firms run by CEOs with law degrees will have a lower initial level of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs without law degrees.*

> *Hypothesis 15: Firms run by CEOs with law degrees will have a lower rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy than firms run by CEOs without law degrees.*

Having examined the individual CEO characteristics reflective of an open executive orientation and their relationship to CSS, I now turn to a discussion of potential moderators.

3.4 The Moderating Role of Managerial Discretion and Industry Norms

Despite the predicted direct effects between CEO openness and CSS, there are nonetheless moderating factors that may dampen the strength of these relationships. Here, I examine two such possible moderators: managerial discretion and industry norms.

3.4.1 Managerial Discretion

There is long debate in organizational studies regarding the actual magnitude of the effect of strategic leaders on firm level outcomes, with one side arguing for the critical role of the CEO in shaping strategic decisions and the other claiming that leaders are so constrained by environmental factors that their effect on performance is almost trivial (Finkelstein et al., 2009; Wasserman et al., 2001). In seeking to bridge the gap between the strategic choice perspective and more deterministic organizational theories such as institutional theory, Hambrick and Finkelstein (1987) introduced the concept of managerial discretion which they define as the "latitude of options top managers have in making strategic choices" (Finkelstein & Boyd, 1998: p. 179). This latitude of action is then said to vary by industry, explaining differences in the effect of strategic leadership on organizational outcomes given that CEOs operating in particular environments may have to make choices in contexts that have inherently more constraints than others. For example, some industries, such as banking, insurance, diversified finance, transportation, utilities and pharmaceuticals, are de facto more highly regulated than others (Burris, 2001). A firm's actions in these industries will, by definition, be more constrained than firms in less regulated settings.

The degree of managerial discretion is derived from three sources: (1) individual level characteristics (e.g. tolerance for ambiguity, internal locus of control), (2) organizational level factors (e.g., firm size, age, capital intensity) and (3) environmental determinants such as product differentiability, market growth and demand instability (which are predicted to be positively associated with discretion) as well as industry structure, quasi-legal constraints and powerful outside forces (which are posited to be negatively associated with managerial discretion) (Finkelstein et al., 2009). By understanding these multi-level sources of constraint researchers are better poised to help explain why CEOs might “matter” more in some contexts and less so in others (Finkelstein et al., 2009).

Most research on managerial discretion, however, has focused on individual (e.g., Buchholtz, Amason & Rutherford, 1999) or firm level determinants of discretion (e.g., Finkelstein & Boyd, 1998; Geletkanycz, Boyd & Finkelstein, 2001; Shropshire & Hillman, 2007), thus largely neglecting the role of industry level constraints on managerial discretion (Dutta & Beamish, 2009; Wasserman et al., 2001). For example, Finkelstein and Boyd (1998) use multiple firm-level dimensions including sales growth, R&D intensity, advertising intensity, sales growth volatility and capital intensity to measure managerial discretion and its effects on CEO compensation finding a positive correlation. Similarly, Geletkanyz, Boyd and Finkelstein (2001) controlled for managerial discretion using only the firm level variable of capital intensity, also finding a positive relationship to CEO compensation. Within the CSR literature, research supports that firms are much more likely to experience large-scale shifts in stakeholder management strategies when afforded greater latitude in decision making by these same firm level factors (Shropshire & Hillman, 2007).

However, these studies do not adequately address how managerial discretion is shaped by the degree to which a firm’s operating environment allows for variety and change at the firm level and the degree to which the organization itself is amenable to an array of possible actions (Hambrick & Finkelstein, 1987: p.379). Yet, research has demonstrated that industry level determinants such as opportunity scarcity and resource availability can constrain the level of CEO impact on firm performance as well as other firm-level outcomes (Hambrick & Abrahamson, 1995; Wasserman et al., 2001). For example, Dutta and Beamish (2009) recently found support that the environmental determinants of managerial discretion (industry level product differentiability, market growth, demand instability and industry structure) will effect a multinational manager's choice of foreign market entry mode (joint venture or wholly owned subsidiary), while Wasserman, Nohria and Anand (2001) found that the degree of the "CEO effect" does in fact vary by industry, concluding that in some contexts, such as communications equipment manufacturing, CEOs have a lot more impact on firm performance than they do in other industries, such as electric power generation. This research suggests that industry level managerial discretion should not be treated just as a control variable, but rather as an important determinant of firm behaviour.

This has also been demonstrated in the corporate social responsibility literature, where research has found that institutional constraints will limit managerial discretion over corporate social responses (Greening & Gray, 1994). In some industries, the level of managerial discretion is high, and thus managers have greater latitude of action with regards to stakeholder and social issues. In other industries, this discretion will be low (Phillips, Berman, Elms & Johnson-Cramer, 2010). Despite the general tendencies within the industry, studies have shown that top management commitment to social and political issues allows the firm to adopt policies to address these issues even within the institutional constraints imposed by the environment (Greening & Grey, 1994). Similarly, Aragon-Correa and Sharma (2003) suggested that reactive environmental investments may be driven by regulatory pressures but that proactive approaches to environmental strategy will "involve firm initiatives based on managerial discretion" (Aragón-Correa & Sharma, 2003: p.74). Characteristics of the environment such as uncertainty, complexity and munificence will influence the "latitude of options" a CEO will have in the development of the firm's strategy vis-à-vis a particular stakeholder or social issue.

The varying degrees of managerial discretion at the industry level have some natural parallels to the literature on individual behaviours under strong vs. weak situations (Mischel, 1977). "Strong situations are those in which most actors construe the situation in the same way, most draw similar conclusions as to appropriate responses, and most are motivated and able to respond" while "weak situations…are those in which there is ambiguity about the meaning of the situation and the appropriateness of various responses, where incentives for any particular response are unclear, and where individuals' ability to respond may vary" (Mullins & Cummings, 1999: p. 464). Mullins and Cummings (1999) outline multiple industry level antecedents to situational strength that include traditional measures of managerial discretion such as environmental uncertainty and industry structure, suggesting that situational strength moderates the relationship between executive's openness to experience and proactive changes in the firm's strategy. The Mullin and Cummings (1999) model is not dissimilar to the one proposed here where managerial discretion will moderate the relationship between different measures of executive orientation and corporate social strategy.

In summary, even though the general level of managerial discretion may vary by industry, the individual CEO will still have some degree of choice of strategic response to stakeholder and social issues. If the level of managerial discretion in an industry is high, the impact of the CEO on corporate social strategies will be greater than if the level of managerial discretion in the industry is low and there are thus greater institutional constraints limiting executive action. Hambrick, Finkelstein, Cho and Jackson describe this mechanism as follows:

> "In the face of increased discretion, executives make decisions on the basis of their own personalized interpretations of the situations they face, rather than by simply conforming to industry norms and conventions. Managerial dispositions will play a larger role in determining the actions and profiles that emerge from organizations. When this occurs, executive characteristics (either psychological or demographic) become significantly stronger predictors of organizational outcomes" (Hambrick et al., 2004: p.339)

Given the above, I hypothesize that managerial discretion at the industry level will moderate the strength of the relationship between CEO openness and CSS such that:

> *Hypothesis 16: The relationship between the executive orientation and the initial status of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy will be stronger in industries characterized by higher levels of managerial discretion.*

> *Hypothesis 17: The relationship between the executive orientation and the rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy over time will be stronger in industries characterized by higher levels of managerial discretion.*

3.4.2 Industry Norms

Similar to the degree of managerial discretion, or latitude of action, at the industry level, I argue that institutional pressures will also moderate the relationship between executive orientation and corporate social strategy. Research suggests that CEOs may become attached to the status quo as dictated by industry central tendencies around industry strategic norms (Carpenter, 2000; Haynes & Hillman, 2010) such that coercive, mimetic or normative isomorphic pressures may also influence strategic decisions (DiMaggio & Powell, 1983).

Recently, Campbell (2007) put forth an institutional theory of CSR which spelled out many of the conditions under which some firms are likely to behave in more socially responsible ways than others including economic conditions such as the overall health of the economy and institutional conditions such as state regulations, industry-self regulation practices, pressure from Non Governmental Organizations (NGOs) or other social movement organizations and norms within professionalized settings. The central premise here is that "firms are embedded in a broad set of political and economic institutions that affect their behavior" (p.948) including the institutionalization of the shareholder primacy norm. Campbell (2007) goes so far as to suggest that "the imperative of maximizing profit and shareholder value is the root cause that may prevent corporations from acting in socially responsible ways" (p. 952). Normative pressures in this regard imply that "managers seek to act in ways that are deemed appropriate by other managers and significant actors in their environment" (p. 958). If the norms in the industry are thus to favor shareholder profit maximization over a stakeholder approach to management, it will be more difficult for executives to choose to participate in broader or deeper CSS.

The norms of a particular industry around stakeholder management and social issue participation may thus serve to constrain strategic choice. For example, if not a single firm in an industry has adopted a proactive environmental policy, being the first firm to do so carries with it significant risk, both in terms of legitimacy, but also with regards to a potential loss of competitive advantage. Because corporate social strategies involve financial commitment, choosing to pursue a stakeholder or social initiative has implied trade-offs and opportunity costs. Deviating from industry norms is therefore fraught with difficulty.

At the industry level, institutional theory would thus seem to suggest that the corporate social strategies of firms within that industry would be relatively similar to one another given coercive, mimetic and normative isomorphic pressures. For example, Shropshire and Hillman (2007) found that when an industry as a whole experienced a shift in stakeholder management practices, firms within that same industry where 1.5 times more likely to also enact a significant change in their own stakeholder management practices, demonstrating mimetic isomorphism. Other research supports that firm level social performance is at least, in part, influenced by the industry in which they operate (Brammer, Pavelin & Down, 2006; Garcia-Castro, Ariño & Canela, 2010).

As such, we might observe that particular industries share similar CSS profiles (disengaged, derivative, dedicated, diffuse or devoted). This aggregate similarity of CSS will then serve to constrain the behavior of individual firms and the strategic choices of individual CEOs. I argue here that a CEOs executive orientation will still affect the strategic choice of CSS. However, the industry level of CSS will serve to attenuate the relationship between executive orientation and CSS such that:

> *Hypothesis 18: The relationship between executive orientation and initial status of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy will be stronger in industries with higher mean levels of CSS.*
>
> *Hypothesis 19: The relationship between the executive orientation and the rate of adoption of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy over time will be stronger in industries with higher mean levels of CSS.*

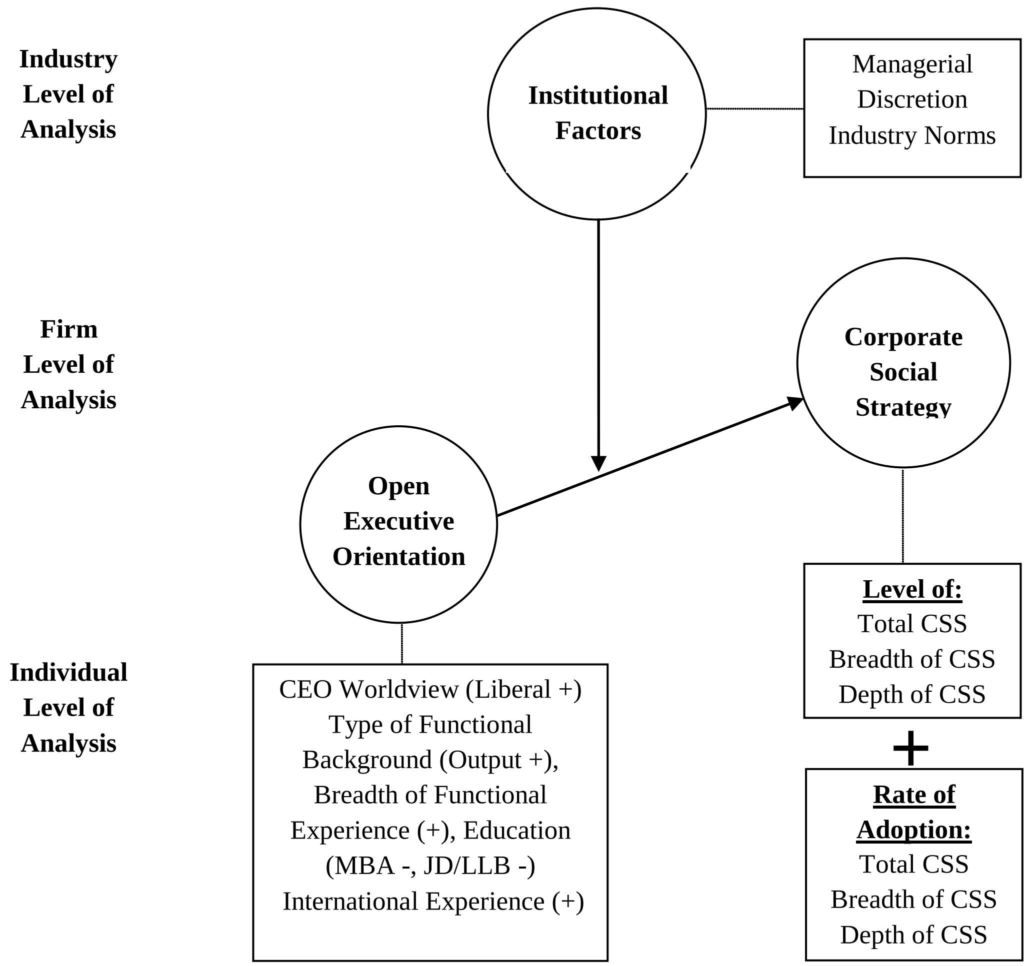
Having argued for the direct effects of CEO executive orientation on CSS, as well as the moderating effects of managerial discretion and industry norms, I now present the multi-level model before moving on to measurement and testing of the hypotheses.

CHAPTER 4: A LONGITUDINAL, MULTI-LEVEL MODEL OF EXECUTIVE ORIENTATION AND CORPORATE SOCIAL STRATEGY

In the previous sections, I reviewed the literature on CSR, upper echelons and institutional theory building hypotheses regarding the relationship between an open executive orientation and a firm's corporate social strategy. What emerges then is a longitudinal, mixed determinant, multi-level model of the relationship between executive orientation and corporate social strategy over time.

Both Wood (1991) and Clarkson (1995) argued that the work conducted under the broad umbrella of CSR has not been careful in ensuring the use of proper levels of analysis. This multi-level model starts with the individual level drivers of CSR by articulating the demographic factors inherent in the established construct of executive orientation, specifically as it relates to CEO openness to change and experience. This open executive orientation is then linked to CEO selective perception, interpretation, construed reality and ultimately strategic choice of CSS (Finkelstein et al., 2009; Hambrick & Mason, 1984). At the firm level, through the mechanism of selective perception (or imperceptions), executive orientation will affect a company's choice of breadth and depth of CSS ultimately resulting in disengaged, derivative, diffuse, dedicated or devoted CSS profiles. At the industry level, institutional norms will attenuate the relationship between the executive orientation and CSS. Given the multiple levels of analysis, a mixed determinant, cross level model is appropriate (Kozlowski & Klein, 2000). Figure 4.1 visually depicts the mixed-determinant model, specifying these multiple-level predictors of a single-level outcome.

Figure 4.1: A Longitudinal, Multi-Level Model of Executive Orientation and CSS



The organizing principle behind the model, therefore, is that executive orientation, through the process of selective perception, affects the strategic choices pursued by the firm and therefore the total aggregate, as well as the breadth and depth of corporate social strategy in which the firm engages. Importantly, this model explicitly includes change, in that executive orientation is also predicted to affect a firm's rate of adoption of CSS. To date, no other model in the CSR domain, of which I am aware, does this.

It is critical in longitudinal, multi-level models to be very clear about the *units* of analysis (Ployhart & Vandenberg, 2010). Here, despite a focus on the CEO, the unit of analysis is nonetheless the firm given that the outcome variables occur at the firm level. As such, I am interested in both the intra-unit change over time in CSS (within firms) as well as the inter-unit differences in change over time between firms and the inter-unit difference in change over time between industries. As depicted in the model, I suggest that an open executive orientation, as captured by a liberal worldview, output functional background, greater breadth of functional experience, educational specialization and international experience, can help predict both initial firm levels of CSS as well as the change in CSS over time. Further, the model differs from extant research in this domain as it is meant to highlight that CEOs of firms make choices regarding the corporate social strategy they pursue; not only is the total CSS important, but the breadth and depth of CSS pursued over time may also vary significantly.

Although multi-level theories and models are complex, there has been an increased call for their use in the study of organizations (Hitt, Beamish, Jackson & Mathieu, 2007). Theoretically, several authors have already attempted multi-level theories of CSR and like constructs (Starik & Rands, 1995). For example, Aguilera, Rupp, Williams and Ganapathi (2007) put forth a multi-level model of CSR which focuses on different motives for CSR at the individual, organizational, national and transnational (intergovernmental and NGO) levels. The role of the CEO and TMT in this model is also to direct strategic decisions with regards to CSR as upper echelons have “the most direct power to influence the firm’s engagement in CSR by developing corporate strategy and allocating resources to different firm programs and practices” (Aguilera et al., 2007: p. 845). However, Aguilera et al. (2007) do not incorporate the process of selective perception in this strategic choice. Rather, they argue that “first and foremost, managers will implement CSR initiatives when these align with their instrumental interests of enhancing shareholder value and increasing firm competitiveness and profitability so that managers can ensure firm survival and raise their compensation packages, which are generally tied to profitability" (p.847). This suggests that CEOs will only act if they see an instrumental value *to themselves* of the proposed CSS. In contrast, rather than speculate on motives, I argue that an open executive orientation will affect the selective perception and interpretation of stakeholder and social issues which will in turn affect strategic choice.

Aguilera et al.'s (2007) model does, however, account for some field level motivators such as governments and NGOs in determining a firm's propensity to engage in CSR (although it neglects the important role of industry norms). Bamberger (2008) specifically points out the need for increased multi-level theorizing that includes context theorizing, so that one can understand how firms are influenced by the phenomena in which they are nested. Context theorizing requires researchers to build situational conditions directly into theory, as I have done here. A multi-level model of strategic leadership and corporate social strategies thus answers numerous calls for increased use of multilevel theorizing in strategic management (Bamberger, 2008, Hitt et al. 2007, Kozlowski & Klein, 2000).

In the next section I turn to the methodology used for testing the model and the hypotheses.

CHAPTER 5: METHODOLOGY

This chapter outlines the choice of research method (Section 5.1), the research design and analytic method (Section 5.2), sample creation (Section 5.3) and the measurement of dependent, independent and control variables (Sections 5.4 – 5.6). Decisions with regards to data lag-structures are also discussed (Section 5.7) before moving on to the analysis of the data and findings in Chapter 6.

5.1 Choice of Research Method

Chief executives are "notoriously unwilling to submit themselves to scholarly poking and probing" (Hambrick, 2007: 337) limiting the number of appropriate research methods available for inquiry. For example, several studies that cross the upper echelon/CSR streams have used survey methodology (e.g., Agle et al., 1999; Dennis, Buchholtz & Butts, 2009; Sharfman et al., 2000) or experimental designs (e.g., Rose, 2007). However, response rates for both of these methods are usually low (Cycyota & Harrison, 2006)[3] which limits not only reliability, but also specificity as one cannot adequately test for industry effects. There are further difficulties with survey research, specifically as it relates to the study of social responsibility which is likely to illicit positive response bias, and to experimental designs using student samples which may or may not be representative of actual executive behaviours (e.g., Beyer et al., 1997). Nadkarni and Barr (2008) summarize the issue by stating that: "measuring top managers'

[3] For example, Agle et al.'s (1999) survey of CEO values and stakeholder salience had an n=80 (13.6% response rate); Sharfman et al.'s (2000) survey of CEO economic, legal, ethical and philanthropic values in the chemical industry had an n=129 (22% response rate); Dennis et al.'s (2009) survey of CEO's attitudes towards philanthropy had an n=84 (17% response rate). Similarly, Rose's (2007) experiment using board of directors was limited to an n=34.

cognition is a difficult task; cognitive structures cannot be measured directly and the very act of asking individuals to reveal their beliefs can change them" (p.1404). In light of these limitations, survey and experimental methodologies were ruled out for this study.

Given the difficulty in obtaining access to top executives as well as the difficulty in directly observing executive orientation, archival analysis is often the preferred method for upper echelon research (Hambrick, 2007). Although there has not been much research into the link between strategic leadership and CSR, those studies that are most closely related to this one have used archival analysis (e.g., Manner, 2010; Slater & Dixon-Fowler, 2009; Thomas & Simerly, 1994). Furthermore, archival analysis has been extensively used in strategy research (Finkelstein et al., 2009) and, most importantly, to measure many of the independent variables used in this study including functional background, educational background, international experience and tenure (Finkelstein et al., 2009). These constructs are therefore well established in the literature, rendering archival analysis an efficient and effective method to test the hypothesis. Lastly, archival analysis is the only method that explicitly allows for an objective study on the adoption of corporate social strategies over time.

5.2 Research Design and Analytic Method

The research design is therefore a quantitative study based on longitudinal archival data collected from various sources (detailed in the following sections). Given that the model is cross level, including a time varying dependent variable that is affected by covariates at different levels, the research design calls for statistical testing using a multilevel growth model (Bliese & Ployhart, 2002). Because of the repeated yearly observations of the dependent variable (total, breadth, depth of CSS) which are nested within firms within industries, traditional regression analyses are inappropriate as they violate certain conditions required for testing (Hoffman, Griffin & Gavin, 2000). Specifically, OLS regression requires that observations are i.i.d. (independent and identically-distributed random variables). In this study, the data violate the assumption of independence of observations in two ways: First, because a longitudinal data set was built, consisting of up to 19 years of data for each firm, one cannot assume that the firm-year observations are independent of each other. By definition, a firm's prior year social performance will be related to next year's social performance. Similarly, over the 19 year period, each firm has several CEOs which are also not independent of the firm.

Second, the hypotheses regarding industry norms clearly indicate that a firm's choice of corporate social strategy will be influenced by the overall approach to CSS in the industry and thus observations within industries are also related. This can be assessed by evaluating the Intra-class Correlation (ICC) which measures group-level variance. Clarke and Wheaton (2007) explain that "when there is little group dependency (ICC < .2), single-level (ordinary least squares [OLS]) regression can yield unbiased estimates of the fixed effects, but as the ICC increases, standard errors from OLS estimated coefficients are biased downwards…making multilevel modeling the preferred method." (p. 314). In this study, the variance related to CSS at the firm level needs to be treated separately from the variance in CSS at the industry level and hence both OLS and GEE approaches can be problematic.

As such, a random coefficient modeling (RCM) strategy was used to test the hypotheses. RCM is also commonly referred to as linear mixed modeling (LMM) or hierarchical linear modeling (HLM) (Hofmann, 1997; Hofmann, Griffin & Gavin, 2000)[4] and, when used with longitudinal data, also referred to more generally as *growth curve modeling* (Ployhart & Vandenberg, 2010; West, Welch & Galecki, 2007). As a methodology, RCM allows for the explicit modeling of the overall change in the dependent variable(s) over time as well as the modeling of predictor variables and cross-level interactions as required by this study's hypotheses (Short et al., 2006). Put differently, RCM allows for both *descriptive* and *explanatory* longitudinal research in that it can be used to illustrate how a phenomenon has changed over time as well as to model the determinants of this change process through tests of theoretical predictor variables (Ployhart & Vandenberg, 2010). Furthermore, because the relationships are modeled independently at each level, the structure of the data does not rely on the i.i.d. assumption.

The use of multi-level RCM in strategy research in general is a relatively new (e.g., Holcomb, Combs, Sirmon & Sexton, 2010; Misangyi et al., 2006; Short et al., 2006). However, RCM is being used with increasing frequency in organizational behaviour to study, amongst other relationships, the impact of leadership on individual performance (Day, Sin & Chen, 2004), the role of the big five personality traits on individual sales growth (Thoresen et al., 2004), the effect of various predictors of initial newcomer performance on group performance improvement (Chen, 2005), and to model the determinants of variations in unit-level absenteeism over time (Hausknecht, Hiller & Vance, 2008).

In the field of CSR, the use of multi-level RCM is still rare, but not without precedent. For example, Martin et al. (2007) tested managers' propensity to bribe using

[4] Many authors use HLM to describe the overall methodology when, in fact, HLM is better described as a statistical package used for RCM.

HLM methods, arguing for the need to partition the variance between firm and country level predictors of behaviour. Similarly, Kassinis and Vafeas (2006) used HLM to assess the toxic emissions of manufacturing plants suggesting that one could not assume that plants within counties and counties within states are independent. Both of these studies, however, remain cross-sectional. No research to date, of which I am aware, has used an RCM methodology to assess the role of individual, firm and industry effects on the initial levels and growth trajectories of corporate social strategy over time, although there have been calls to apply RCM methods to the study of CSR (Short et al., 2006).

Because the steps involved in an RCM analytic method are quite detailed, the specific models tested are introduced alongside the findings in Chapter 6. This is done after the data, sample and variables are explained in the next sections.

5.3 Sample Creation

Data from the Kinder, Lyndenberg, and Domini (KLD) index was used to construct the initial sample of firms for this thesis. The KLD database is acknowledged as the most commonly used (Deckop et al., 2006; Waldman et al., 2006b), most complete (Hillman & Keim, 2001) and the best source for information about firm level social performance (Sharfman, 1996; Waddock, 2003). KLD analysts evaluate corporations on more than 280 data points to arrive at a ratings system designed to provide a snapshot of the company's environmental, social and governance related performance every year providing ratings for every firm along seven different categories including: community, corporate governance, diversity, employee relations, environment, human rights and product.

Within these categories, KLD tracks a variety of CSR items that it considers either areas of strength or concern and assigns these items a binary measure of either “1” or “0” to demarcate either the presence or absence of the area of strength or concern. For example, for the Community Relations category, KLD assigns a “1” or “0” to firm level actions that demonstrate strengths in this area including charitable giving, innovative giving, non-US charitable giving, support for housing, support for education, indigenous peoples’ relations, volunteer programs and other. Areas of concern under the community relations category include investment controversies, negative economic impact, problems with indigenous peoples' relations, tax disputes and other. Technically, a firm can therefore earn up to seven “strengths” in community relations as well as five “concerns”.[5]

The KLD data used in this dissertation cover the period from 1991-2009, however, the number of firms rated each year has varied. Prior to 2001, KLD focused on firms listed in the S&P 500 or the Domini 400 Social Index. However, since 2001, KLD has added CSR ratings for all firms belonging to the Russell 1000 Index and since 2003, all companies on the Russell 2000 Index such that the most recent KLD data include social performance information for the 3,000 largest US firms by market capitalization.

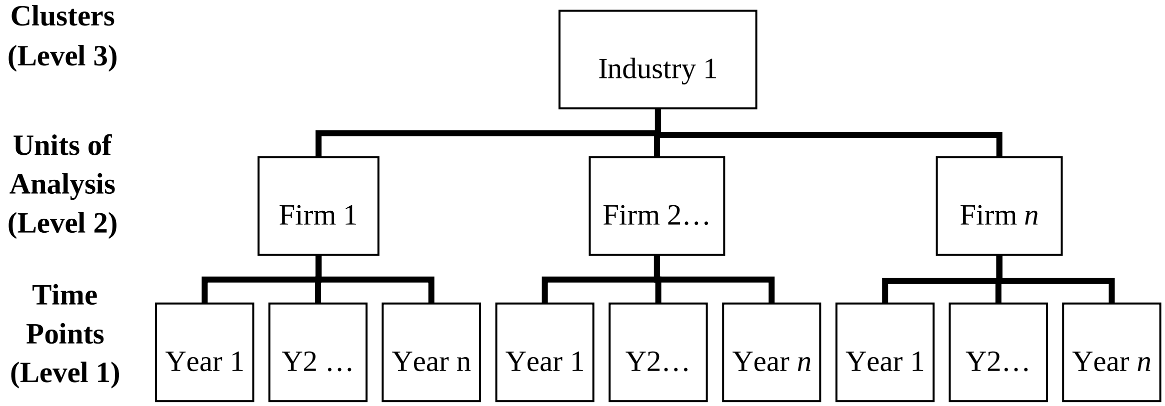
Given the longitudinal nature of the research question in this study, the sample construction proceeded in various steps. First, to construct the initial population, the corporate social performance information for all firms measured by KLD was consolidated for the entire 19 year period from 1991-2009. To ensure enough within-firm

[5] KLD also provides scores on six ‘exclusionary’ screens which are comprised of concerns related to industry-based involvement in “controversial business issues” such as alcohol, gambling, firearms, military, nuclear power and tobacco. Although some researchers have used these screens as evidence of social issue participation (Hillman & Keim, 2001), they are not categories that are representative of the CSR choices facing firms in most industries and are thus often excluded from aggregated measures of CSP (e.g., Agle et al, 1999).

time variability (to model the growth trajectories), this data was then sorted such that only firms assigned social ratings for fifteen or more years were kept in the sample. This preliminary screening for longitudinal data yielded a sample of 365 firms and 6,647 firm year observations. In the second step, the financial information for these 365 firms was obtained from COMPUSTAT and merged with the corporate social responsibility data from KLD. This dataset was then manually inspected to ensure data compatibility in terms of company name, ticker and other key identifiers that may have changed over the study period. Of the initial 30 unmatched firms, data on 15 companies were ultimately found in COMPUSTAT, thus only reducing the sample by 15 firms or from 365 to 350 companies. As a last step, the CSR and financial data was merged with CEO identification information obtained through COMPUSTAT's Execucomp database. If the CEO information was not available through Execucomp, missing data was obtained through other sources as detailed in the measures section below. At this stage, only one additional firm needed to be eliminated given incompatible data leaving a final data set of 349 firms.

The final sample is thus an unbalanced panel, where the number of firms measured in each year varies from a low of 303 in 2009 to a high of 347 in 1995, resulting in 6,334 firm year observations. Although the design was intended to capture only firms with 15 or more years of data, in the end, observations per firm range from 12 years to 19 years with the average number of years of data per company at a robust 18 years. Within each firm, on average, the number of CEOs over the 19 years is 2.9 so that the final data set includes information for 1,008 CEOs. The clustered longitudinal design for the first industry is visually depicted in Figure 5.1.

Figure 5.1: Structure of the Clustered Longitudinal Dataset



The 349 firms were then assigned an industry classification based on the 4 digit SIC code as defined by COMPUSTAT. As done in previous research in the CSR area (Surroca, Tribó & Waddock, 2010; Waddock & Graves, 1997), the industry classifications were then reduced to 12 primary sectors using their 2 digit SIC. Although alternate methodologies exist for industry classification (e.g. 5 sectors, 1-digit NAICS code), the final industry classification used herein was selected in order to best replicate the most cited study in this area (Waddock & Graves, 1997). Furthermore, this methodology continues to be used in recent studies (Surroca et al., 2010). The final breakdown of the number of firms in each industry classification is detailed in Table 5.1 below.

Table 5.1: Industry Classification

Industry	SIC	# of Firms		# of Firm Years	
		#	%	#	%
Mining/Construction	100-1999	16	4.6%	288	4.5%
Food/Textiles/Apparel	2000-2399	24	6.9%	444	7.0%
Forrest/Paper/Publishing	2400-2799	32	9.2%	580	9.2%
Chemicals/Pharma	2800-2899	38	10.9%	696	11.0%
Refining/Rubber/Plastic	2900-3199	7	2.0%	126	2.0%
Steel/Heavy Manufacturing	3200-3599	41	11.7%	759	12.0%
Computers/Auto/Aero	3600-3999	62	17.8%	1128	17.8%
Transportation	4000-4799	11	3.2%	202	3.2%
Telephone/Utilities	4800-4999	26	7.4%	474	7.5%
Wholesale/Retail	5000-5999	38	10.9%	675	10.7%
Financial	6000-6799	33	9.5%	580	9.2%
Hotel/Entertainment/Services	6800-9799	21	6.0%	382	6.0%
Totals		**349**	**100.0%**	**6334**	**100.0%**

Various archival sources were used to gather data related to the firm and CEO independent variables. These, as well as the measures for the dependent variables, are detailed in the following section.

5.4 Dependent Variables

Corporate social strategy was measured in three ways: Aggregate CSS (ACSS), Breadth of CSS (BCSS) and Depth of CSS (DCSS) using KLD strength measures. As introduced in Section 5.2, the KLD database has been used extensively as a measure of CSR, however, no consensus has emerged to date with regards to the appropriate operationalization of the construct (Margolis & Walsh, 2003). To illustrate, Appendix A provides a snapshot of over thirty different studies that have taken advantage of the KLD database; although early studies converged on a simple sum of strengths and weaknesses, the heterogeneity of subsequent operationalizations is evident.

Recent studies, however, have demonstrated that CSR and CSiR (Corporate Social Irresponsibility) are in fact two separate and distinct constructs (Strike et al., 2006) and that summing KLD strengths and weaknesses therefore masks important information about a firm's CSR posture (for example, a firm can score a +2 in diversity, and a -2 on the environment and thus end up with a CSR score of zero). As such, there have been recent calls for all new CSR analysis to treat the two constructs separately (Mattingly et al., 2006). This approach has face validity given that the strengths measures capture specific firm-level decisions to engage in different types of CSS which are therefore a more direct measure of strategic choice than a combined strengths/weaknesses score, where weaknesses are often measured as fines or penalties. The use of KLD strengths separately has therefore become the preferable methodological treatment of KLD data (Godfrey et al., 2009; Kacperczyk, 2009) and is the approach taken in this study.

Aggregate CSS (ACSS). In order to assess the overall trends in CSS over time, I begin with an aggregate score of CSS which includes the KLD strengths in six dimensions: diversity practices, employee relations, community relations, the environment, human rights and the product quality categories (a proxy for consumer-focused initiatives). As is common in prior research, the corporate governance dimension is not included as the items measured are not deemed to reflect strategic choices regarding CSS initiatives. A list of the individual items measured in each dimension can be found in Appendix B.

An important consideration in longitudinal studies is to ensure that the underlying construct being measured is operationalized in a consistent manner over time (Ployhart &

Vandenberg, 2010). Within the KLD database, the total number of CSS initiatives in each category has varied over the years as social and stakeholder issues have become more or less salient to the underlying notion of corporate social responsibility. For example, the total number of CSS initiatives measured by KLD in 1991 in the six areas was 27 and included items such as no lay-off policies in the employee category (dropped in 1994) and positive operations in South Africa in the Human Rights category (dropped in 1995). On the other hand, as other issues grew in importance (e.g., progressive gay/lesbian policies which were added to the diversity score in 1995) these were incorporated into the KLD measures such that the total number of initiatives in the six areas recorded had grown to 34 by 2009. As such, a simple count of the total number of CSS initiatives over time might artificially capture changes in measurement rather than actual changes in growth in CSS participation. As such, a firm's *ACSS is measured* as a percentage of CSS initiatives the firm participated in out of the total possible CSS score for that year. In this manner, ACSS is able to capture the relative strength of engagement in CSS as well as model the growth of a firm's engagement in ACSS over time.

Note that while some studies apply a weighting scheme to the different dimensions of CSR (e.g., Waddock & Graves, 1997), a more common approach is to give each dimension equal importance (e.g., Bouquet & Deutsch, 2008; Garcia-Castro, Arino & Canela, 2008; Hillman & Keim, 2001). Given the focus on assessing the overall growth of CSS over time, there is no a-priori rationale to suggest prioritizing particular sub-categories over others. Furthermore, research has demonstrated that there are no statistical differences in results obtained with weighted or un-weighted measures (Hull & Rothenberg, 2008).

Breadth of CSS (BCSS). As with ACSS, simple count data could mask underlying changes in measurement rather than actual changes in the breadth of a firm's CSS. As such, I created a measure of CSS dispersion based on Palepu's (1985) entropy measure of diversification. The entropy measure for BCSS was constructed as follows. Consider a firm has decided to participate in N CSS areas. Let P_i be the share of the ith area in the total number of areas in which the firm participates. Then:

$$\text{Breadth of CSS} = \sum_{i=1}^{N} [P_i \ \ln(1/P_i)]$$

where P_i is the share of total strengths in area $_i$ and $ln(1/P_i)$ is the weight of each area $_i$ (the logarithm of the inverse of its share). This measure, therefore, takes into consideration two elements of CSS: (i) the number of stakeholder and/or social issue areas in which a firm participates, and (ii) the relative importance of each area in terms of total number of strengths. The entropy measure can therefore range from 0 to 2 where the closer the score to 0, the narrower the breadth of CSS (with 0 indicating perfect concentration in one area, or no dispersion). While novel to the area of CSR, the entropy measure has been extensively used and validated in the corporate diversification literature in a manner conceptually similar to the one used herein (Hoskisson, Hitt, Johnson & Moesel, 1993; Palepu, 1985).

Depth of CSS (DCSS). To assess a firm's depth of CSS, the concept of a 'specialization ratio' was also borrowed from the diversification literature, where the ratio is the score for the industry sector with the greatest amount of sales divided by a firm's total sales (Hoskisson et al., 1993). Here, the specialization ratio for DCSS is calculated as the area with the greatest amount of strengths divided by the total possible number of strengths in that area. Shallow CSS and Deep CSS are then defined on a continuum ranging from 0 to 1 where the closer the score to '1' the greater the depth of CSS.[6]

The following table illustrates how this decomposition will be used to map the overall aggregate level of CSS (ACSS), the breadth of CSS (BCSS) and the depth of CSS (DCSS).

Table 5.2: Hypothetical Measurement of Corporate Social Strategy

Firm	Employee Relations	Diversity	Community Relations	Environment	Human Rights	Special Products	Total Number of Strengths	Total Number of Possible Strengths	**ACSS** (Total Strengths/Total Possible Strengths)	**BCSS** (Entropy Measure)	**DCSS** (Special-ization Ratio)
1	6	0	0	0	0	0	**6.00**	36	16.7%	0.00	1.00
2	1	5	0	0	0	0	**6.00**	36	16.7%	0.45	0.83
3	0	3	3	0	0	0	**6.00**	36	16.7%	0.69	0.50
4	0	0	2	2	2	0	**6.00**	36	16.7%	1.10	0.33
5	1	1	1	2	1	0	**6.00**	36	16.7%	1.56	0.33
6	1	1	1	1	1	1	**6.00**	36	16.7%	1.79	0.17

As can be seen, each of the hypothetical firms in this "study" has earned a total of six 'strengths'. Under traditional methods of assessing CSP that rely solely on a count of the total number of strengths (e.g. Strike et al., 2006), the CSP of each of these firms would be equal. This is conceptually similar to the method used to measure ACSS, however, ACSS has been adjusted by the total number of possible strengths which varies by year. By adding BCSS and DCSS, this study highlights the nuances in breadth and

[6] Note: I did not use the formula: strengths in the CSS area with the greatest amount of strengths divided by a firm's total strengths as this was not deemed to accurately capture the depth construct. If a firm only has one strength in one area, this formula would grant the firm a specialization score of 100%. Dividing the greatest amount of strengths by the total number of possible strengths in an area was therefore considered a more representative measure of depth of CSS.

depth within the different corporate social strategies. Firm 1, for example, has focused all of its attention in one category - employee relations issues, while Firm 6 has taken a broader approach and invested in all six areas. Similarly, one can see that Firm 1 has also engaged in a deeper CSS having earned six strengths in employee relations while Firm 6 has only earned one, thus engaging in a shallow CSS with regards to this particular area. With regards to the typology presented in Chapter 2, therefore, Firm 1 is likely to fall into the quadrant of dedicated CSS, while Firm 6 would fall under the quadrant of diffuse CSS. Although not formally hypothesized, the overall nature of the CSS of each firm can therefore be assigned to a particular quadrant every year, a topic that will be revisited in the discussion section.

5.5 Independent Predictor and Moderator Variables

Data for all of the demographic variables were sourced first from COMPUSTAT's Execucomp database (name, age, tenure), with functional, educational and international experience coded primarily from biographies published in the *Who's Who in America* database available through *Lexis/Nexis Academic Online* people search. This search also yielded information from Dun and Bradstreet's *Reference Book of Corporate Management* as well as Standard and Poor's *Register of Corporations, Directors and Executives*. When biographies were not available in any of these databases, the demographic coding was supplemented with searches on *Thompson One Banker* and *Mergent Online*'s directory of corporate executives, as well as biographies available in the public domain including *BusinessWeek, Fortune, Forbes* and the obituaries of various online trade publications and newspapers. In this manner, each of the CEO demographic variables was cross-checked in numerous datasets thus increasing the reliability of the data.

5.5.1 Independent Predictor Variables

CEO liberal worldview. I construct a new proxy for CEO worldview based on the extensive research in both political science and psychology discussed in Section 3.3.1 that has confirmed the existence of a liberal vs. conservative continuum (Tetlock, 2000; Thorisdottir et al., 2007). Although Tetlock (2000) used a battery of items in a scenario based survey of middle managers to measure ideological worldview, I will use a simplified measure specifically related to his findings about the shareholder/stakeholder divide that attempts to capture these "abstract political sympathies" by evaluating the political orientation of individual CEOs.

In one of the only studies of which I am aware, Burris (2001) found that individual CEO political contributions are different from their own firm PAC contributions and follow a different logic; corporate PACs are concerned with non-market strategies while individual donations are concerned with supporting particular candidates that follow the true political preferences of the executive. Further, firm PACs are almost entirely motivated by economic issues, while individual capitalists are unable to disregard a candidate's position with regards to social issues such as abortion, school prayer or civil liberties (p.378). Ansolabehere, de Figuieiredo and Snyder (2003) also argue that "individuals give because they are ideologically motivated, because they are excited by the politics of particular elections, because they are asked by their friends or colleagues and because they have the resources necessary to engage in this particular form of participation" not because "they receive direct private benefits" from political giving (p.188). Burris (2001) concludes:

> "Like other citizens, capitalists tend to develop not just political preferences but political *identities* as either Democrats or Republicans. This is reflected in the fact that three-fourths of individual capitalists contributed 90 percent or more of their campaign contributions to a single party, compared with less than one-seventh of corporations. Party identifications of this type tend to be formed early in life, often through transmission from parent to children, they are relatively stable over the life course, and they are not reducible to a simple matter of agreement or disagreement with specific policy positions of the parties in a given elections." (p.378, *emphasis in original*)

Although the individual contributions of CEOs are not usually large in terms of absolute numbers (under $5,000 in Burris' sample) due to legislated maximums under the Federal Election Campaign Act (Ansolabehere, De Figueiredo & Snyder Jr, 2003), they nonetheless reflect a personal commitment to an established political ideology that is pertinent to the measurement of executive orientation and a possible relationship to CSS. As such, I sourced individual CEO political contributions from the non-partisan research institute, Center for Responsive Politics (www.opensecrets.org), which consolidates the information from the Federal Election Commission (FEC). The FEC provides complete data on the campaign contributions of all American citizens, including CEOs. The contribution record for each CEO was first identified by using their given name, then cross-checked with the CEO's middle name, address and employer information to ensure that the record clearly belonged to the CEO under investigation.

In order to construct the worldview variables, I first recorded the total amount of donations made by each CEO to every senatorial, congressional, or presidential candidate or party for every year each CEO was in the database. These numbers were then translated into the relative percentage of contributions going to either Democratic or

Republican candidates (contributions to independents and corporate/industry PACS were also captured, but not used in this analysis unless explicitly affiliated with Democratic or Republican candidates). Because of the longitudinal nature of the dataset, it was possible to assess the stability of a CEO's contributions over time as the data was being gathered. Contrary to Burris (2001), I found that many CEOs gave inconsistently to both parties, suggesting that not all donations may be purely ideologically driven. For example, CEO Fred Smith of FedEx donated heavily to the Democratic Party while they were in power, but then switched the majority of his contributions to the Republicans when they took office. A worldview variable based on majority contributions alone was therefore deemed to be not entirely reliable.

As such, to measure CEO liberal vs. conservative worldview, I created a 7 point scale based on research in psychology on individual political identity (Graham, Haidt & Nosek, 2009). Here, political identity is often measured across a continuum anchored on each end by strongly conservative and strongly liberal with moderate at the midpoint. In coding the CEO political contributions, I employed a -3 to +3 scale as follows:

(-3) strongly conservative	CEO donated more than $10K to the Republican Party or self-identified as Republican
(-2) moderately conservative	CEO donated consistently to Republican Party over the years in the dataset
(-1) slightly conservative	CEO donated minimal amounts intermittently to the Republican Party over the years in the dataset
(0) neutral	CEO either donated to the Republican and Democratic parties equally, donated only to company or industry PACs or did not donate to any political party ever
(+1) slightly liberal	CEO donated minimal amounts intermittently to the Democratic Party over the years in the dataset
(+2) moderately liberal	CEO donated consistently to Democratic Party over the years in the dataset
(+3) strongly liberal	CEO donated more than $10K to the Democratic Party or self-identified as a Democrat

CEO functional background. Following previous research, I capture both the primary functional areas in which a CEO has served as well as the breadth of this functional experience (Beyer et al., 1997; Chattopadhyay et al., 1999; Geletkanycz & Black, 2001). As is common practice (Herrmann & Datta, 2002; Michel & Hambrick, 1992; Thomas & Simerly, 1994), I code CEOs with backgrounds in marketing/sales, research and product development or entrepreneurship as having served in ***output functions*** and CEOs with backgrounds in accounting/finance, law, administration/HR, production/operations, engineering or data processing/information systems as having served primarily in ***throughput functions***. With regards to ***breadth of functional experience***, I follow previous research (Bigley & Wiersema, 2002; Geletkanycz & Black, 2001) and measure the number of functional positions held by the CEO across his/her entire career. This is a continuous variable where the higher the score, the greater the breadth of functional experience; at the lowest end, 1 thus represents an entire career spent in just one functional area.[7]

CEO international experience. Following previous research in this area, CEO international experience was captured by a dichotomous variable as either ‘0’ or ‘1’, for either the absence or presence of international experience, where ‘1’ represents experience in an international function or in a function with international responsibilities (Roth, 1995; Slater & Dixon-Fowler, 2009) and/or that the CEO was born outside the United States (Matta & Beamish, 2008).

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[7] Although some studies of CEO characteristics that have employed a survey design (e.g., Musteen, Barker & Baeten, 2006) have used Blau’s index of heterogeneity to measure CEO functional diversity, the data sources used for this project did not allow for coding of the length of time spent in each functional position.

CEO educational background. As is common in the upper echelon literature, when measuring CEO educational background, I looked at both the overall level of education obtained as well as the CEO's area of specialization. Similar to Wiersema and Bantel (1992), Carpenter and Fredrickson (2001) and Herrmann and Datta (2002), I first coded the highest educational degree obtained by the CEO using a seven point Likert-type scale (0-some high school, 1-high school, 2-attended college, 3-undergraduate degree, 4-attended graduate school, 5-master's degree, 6-attended doctoral program, 7-doctorate). However, given that my hypotheses revolve around the "MBA mindset" and "Law mindset" in particular, I then coded educational background for ***CEOs who hold an MBA*** degree with a '1' on this attribute (Geletkanycz & Black, 2001; Slater & Dixon-Fowler, 2010) and ***CEOs who hold a JD or LLB*** degree as '1' on this attribute (else '0').

Reliability of Measures. Appendix C contains a table with a representative sample of studies that have used the above measures to capture the independent variables of interest, thus speaking to the reliability of these measures. Further, because multiple sources were used in the gathering of the demographic information, reliability was iteratively cross-referenced during data collection. Lastly, Roth (1995) compared his survey results for functional and international experience with archival data available from the *Reference Book of Corporate Management* and *Who's Who* volumes and found that the data was consistent with the self-reported information. As such, these archival measures are deemed reliable to assess executive orientation.

5.5.2 Moderating Variables

Industry norms. To capture the affect of industry norms on CSS, I used the means of the CSS measures for each industry (Finkelstein and Hambrick, 1990). Specifically, I measured the average aggregate CSS, average breadth of CSS and average depth of CSS for each industry in my database, aggregated at the 2 digit SIC code level.

Managerial discretion. In line with institutional arguments that the characteristics of a firm's operating environment will affect the level of executive discretion, Hambrick and Finkelstein (1987) introduced the construct of managerial discretion to account for the affect of environmental factors such as product differentiability, market growth, industry structure, demand instability, quasi-legal constraints and powerful outside forces on a CEO's latitude of action. Although often measured as a firm level construct (e.g., Shropshire & Hillman, 2007), the appropriate level of analysis here is the industry level (Boyd & Gove, 2006; Hambrick & Abrahamson, 1995; McClelland et al., 2010).

Although there is a lack of consensus regarding the appropriate operationalization of managerial discretion at the industry level (Keegan & Kabanoff, 2008), common measures include some combination of industry level capital intensity, sales growth, R&D intensity, advertising intensity or other similar measures such as industry munificence and dynamism (see Boyd & Gove, 2006, for a review). Several studies have relied directly on Hambrick and Abrahamson's (1995) ratings of managerial discretion (e.g., Abrahamson & Hambrick, 1997; Adams, Almeida & Ferreira, 2005) which were based on an expert panel and correlated with many of the above observable industry characteristics. Others have used these ratings more indirectly to sample industries in high or low discretion environments. For example, McClelland et al. (2010) chose firms in the textile, furniture and primary metals industries to exemplify low-discretion environments, while computer equipment and electrical components were selected as examples for high discretion industries.

To classify firms into low vs. high discretion industries, I followed the process outlined in Adams, Almeida and Ferreira (2005) who take Finkelstein et al.'s (2009) expanded list of the managerial discretion ratings of seventy different industries and average these measures by two digit SIC code. Those industries that fell at the top 50% of the distribution were rated as a high discretion industry (coded '1') and those at the bottom 50% as low discretion industries (coded '0').[8] For those industries where managerial discretion ratings were not available, the high/low categorization was based on the industry average capital intensity score, with lower scores indicating greater levels of managerial discretion.[9]

5.6 Control Variables: Firm and CEO Level Determinants of CSS

5.6.1 Firm Level Control Variables

Data for all firm-level control variables was sourced from the COMPUSTAT database for each firm in the sample for the years 1990-2009 (An additional year of data was necessary for the past performance measure).

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[8] Note that Adams et al. (2005) used the top and bottom 40%, excluding industries in the middle 20% as these were deemed more difficult to classify as either high or low discretion industries. Although this may be a legitimate concern, not wanting to lose data for entire industries, I split the sample above and below the median discretion score of the averaged ratings, which was 5.05.

[9] To assess if this was an appropriate process, I compared the means of the capital intensity scores for the high vs. low discretion industries already established. The mean capital intensity for high discretion industries was 67.2, while the mean capital intensity for low discretion industries was 276.6, which was statistically significant in a t-test comparison of means (p<0.000). After categorizing the remaining industries as either high/low, these numbers remained virtually unchanged (63.2 and 278.2).

Firm size. Prior research has shown that firm size will affect a firm's CSR ratings (McWilliams & Siegel, 2000). Specifically, studies have shown that larger firms are more likely to engage in the 'people' dimension of CSR, which includes community donations, the hiring of women and minorities and the treatment of employees, but are less likely to perform well in the 'product' dimension of CSR which includes product/service quality and a firm's stance toward the natural environment (Johnson & Greening, 1999). Strike et al. (2006) also found that larger firms will show higher levels of both CSR and CSiR (Corporate Social Irresponsibility) and Shropshire and Hillman (2007) found explicitly that larger firms are more likely to experience significant shifts in stakeholder management programs than smaller firms. I therefore control for firm size, measured as the natural log of total assets. Note that although Waddock and Graves (1997) also include both total sales and total number of employees as proxies for firm size in their model of CSP-CFP, these variables were found to have extremely high variance inflation factors (VIF >29) which indicate high degrees of multicollinearity. As such, only the log of total assets was retained as a proxy for firm size in this analysis.

Past performance. Waddock and Graves (1997) also found that a firm's previous financial performance positively affects the firm's subsequent social performance and this finding has been substantiated in a recent meta-analysis (Orlitzky et al., 2003). As such, following previous studies, I control for past performance by accounting for the return on assets (ROA) lagged by one year. ROA is considered an appropriate measure of firm performance here given that it captures the profitability of the firm based on the strategic use of the resources, or assets, under its control (Hull & Rothenberg, 2008).

Firm risk. Because investing in CSR issues may be associated with either potential savings (e.g., waste reduction) or possible incremental costs (e.g., pollution control equipment), a firm's risk profile may influence the adoption of CSS. In line with previous studies (McWilliams & Siegel, 2000; Waddock & Graves, 1997) therefore, I control for firm risk by including the ratio of long term debt to total assets.

R&D intensity. McWilliams and Siegel (2000) argue that R&D intensity should be included as a control variable in all future CSR studies. Although this argument rests on R&D expenditures as an explanatory variable in firm *financial* performance (not *social* performance), recent studies have nonetheless demonstrated a strong relationship between R&D intensity and CSP (Hull & Rothenberg, 2008; Padgett & Galán, 2010). Consistent with these findings, I therefore include R&D intensity as a control variable.

Because this variable is notoriously plagued with missing data issues[10], I follow previous research by creating three separate measures to capture R&D Intensity: (1) total R&D expenditures divided by total sales, (2) total R&D expenditures divided by total sales where all missing values for R&D expenditures are treated as zero and (3) an R&D missing dummy variable where missing values are coded 1, otherwise 0 (Henderson et al., 2006). Because measure (1) greatly reduces the number of observations, models using measures (2) and (3) in combination, allow the total number of observations to be preserved, yet remove any bias that may be associated with the assigning of zero values to missing data (Henderson et al., 2006).

[10] If a company spends an insignificant amount on R&D (e.g. financial companies), they are not required to report this amount in financial statements captured by COMPUSTAT and are thus recorded as missing.

5.6.2 CEO Level Control Variables

Data for all CEO-level control variables was sourced from the COMPUSTAT Execucomp database for each firm in the sample for the years 1991-2009. In those cases were data was missing, the information was sourced as detailed in Section 5.5.

CEO tenure. Research has shown that CEOs who have served within a firm or an industry for an extended period of time are more likely to conform to the norms of the industry and less likely to deviate from industry conventions (Finkelstein & Hambrick, 1990; Hambrick, Geletkanycz & Fredrickson, 1993). For example, several studies have shown that longer tenured CEOs are more likely to engage in defender strategies characterized by stability and efficiency than shorter tenured CEOs who were more likely to undertake prospector strategies related to increased levels of innovation (Finkelstein et al., 2009). Similarly, tenure has also been found to be negatively related to organizational change, with shorter-tenured CEOs willing to take more strategic risks, yet longer tenured CEOs demonstrating a greater commitment to the status quo (Miller, 1991). Geletkanycz and Black (2001) found that the longer an executive has spent in a particular functional track, the greater his/her commitment to the status quo, suggesting that CEO perspectives and views become increasingly narrow and fixed rendering the ability to conceive of new alternatives or solutions difficult.

However, despite the fact that the impact of CEO tenure on different aspects of firm performance has been extensively studied (Finkelstein & D'Aveni, 1994), few studies have looked at the relationship between CEO tenure and any measure of CSR. Only Thomas et al. (1994) found that CEOs who have a longer tenure in the role and CEOs who have spent more years in the organization prior to the attainment of their current position were more likely to score higher on measures of corporate social performance (CSP) than CEOs with shorter organizational tenures (Thomas & Simerly, 1994).

Taking these diverse perspectives into account, CEO tenure may have a complex relationship to CSS. On the one hand, longer organizational tenures should be associated with higher measures of social performance (Thomas et al., 1994). On the other, CEOs with long tenures are less equipped to adjust to ambiguous and complex changes in the operating environment, thus rendering them "stale in the saddle" (Miller, 1991) or "obsolete" (Henderson et al., 2006). The relationship between CEO tenure and CSS thus appears to be contingent on organizational experience such that CEO tenure in the firm may be negatively related to CSS in that the longer a CEO has served in his/her position the more committed they are to the status quo, yet tenure in the role may be related to organizational change such that the shorter the time as CEO, the more likely they are to instigate change. As such, I control for CEO tenure both as tenure in the role (Henderson et al., 2006; Herrmann & Datta, 2002) as well as tenure in the organization (Thomas & Simerly, 1994).

CEO age. Hambrick and Mason (1984) argue that a CEO's age can influence his/her attitude toward risk, with older managers being more risk-averse than younger ones. Similarly, Bertrand and Schoar (2003) found that executives from earlier birth cohorts were, on average, more conservative, than executives from later birth cohorts. If the adoption of CSS policies is considered risky or requires a more liberal worldview (i.e., especially programs in contested areas such as the adoption of formal policies to promote gay/lesbian employees), age could affect CSS. Thus, I controlled for *CEO age* (measured in years) as is the norm in upper-echelon research (Musteen, Barker III & Baeten, 2010),

CEO gender. Lastly, there is some limited research that suggests that gender may play a role in determining a firm's propensity to engage in CSS. Williams (2003), for example, found that women on corporate boards are strongly linked to both the total amount of firm philanthropic contributions, as well as the type of charity supported (community services and the arts). Barnett and Karson (1989) found that women are significantly more likely than men to chose the ethical over the economic option in a presentation of various work-related ethical dilemma scenarios. More recently, Simga-Mugan et al. (2005) also found support that women are more ethical than men in scenarios in which respondents had responsibility towards agents such as employees (e.g. demotion after maternity leave) concluding that the difference may be in the cognitive rules (knowledge structures) accessed by the different genders: "Females are argued to typically utilize ethics of care, which emphasizes social virtues and caring for others. On the other hand, males are found to utilize ethics of justice, emphasizing equal treatment and playing by the rules" (p. 150). Building on the large body of work that suggests women are more ethically sensitive than men, I control for CEO gender by coding female CEO's as 1 and males as 0.

5.7 Other Data Considerations: Data Lag Structure

An important consideration for the analysis of longitudinal information regards assumptions about the underlying lag structure of the data (Ployhart & Vandenberg, 2010). While the common assumption in upper echelon models is that it takes time for the CEO effect to be reflected in firm performance measures (Hambrick & Mason, 1984), there is no theoretical reason to believe that this is the case for social performance measures. For example, it is logical to argue that any changes that a CEO makes to typical strategy investments (capital intensity, R&D, …) in year *t*, will likely only show material effects on firm performance (e.g., ROA) in year *t+1*. However, the CSS measures employed here do not automatically imply that a lag structure is required. Rather, the CSS of each firm in a given year is scored by KLD analysts at the end of every year, reflecting the social performance choices of that year (e.g., generous giving, pollution prevention programs, progressive policies towards gay and lesbian employees). There is no theoretical rationale for assuming that the CEO effect on CSS is not contemporaneous.

Yet, treatment of data lags in this area has varied widely. For example, Agle et al. (1999) treat CEO values and CSP contemporaneously as do Manner (2010) and Slater and Dixon-Fowler (2010). However, still others have implemented a one year lag between CEO characteristics and CSR measures (e.g., Fong, 2010). Deckop et al. (2006), for example, found that CEO compensation (short vs. long term) in year *t* is related to CSP in year *t+1* and Waldman et al. (2006) found that CEO intellectual stimulation in year *t* can positively predict the propensity of firms to engage in CSR activities (product quality and environmental measures) in a subsequent time period. Similarly, Shropshire and Hillman (2007) found that owner manager controlled firms in year *t* are less likely to engage in broad shifts in stakeholder management programs in year *t +1*.

The difficulty in estimating the appropriate lag structure is further complicated in that all of the aforementioned studies employ variations of cross-sectional designs. In longitudinal data analysis, however, the building of growth curve models already incorporates the role of time into the models themselves and as such, issues of endogeneity and causation are not pertinent (Schonfeld & Rindskopf, 2007). Furthermore, a recent meta-analysis demonstrated that the relationship between CSR and CFP is just as likely to be concurrent as it is to be lagging or leading (Orlitzky et al., 2003) and simultaneous estimation methods have therefore been used in several subsequent studies (Mattingly & Berman, 2006). I therefore build the latent growth curve models without a lag structure and remit a further discussion about lagged explanatory variables to the post-hoc robustness analysis reported in section 6.5.

In addition to decisions regarding the data lag structure for *independent* variables, there is also some debate with regards to including a lagged *dependent* variable (LDV) in longitudinal models of change. LDVs are often incorporated in cross-sectional designs in order to ensure the effect of time is adequately captured as well as to reduce questions of endogeneity. Furthermore, LDVs are often used as a control when autocorrelation is suspected in the dependent variable (Strike et al., 2006). However, the random coefficient modeling technique employed herein explicitly accounts for the variance components among time periods, shedding light on how individual units change over time (Holcomb et al., 2010). Because data pertaining to the dependent variable in growth curve modeling is already explicitly modeled every year, adding a LDV thus risks over-parameterizing the models. Achen (2000) also cautions that while including an LDV may help improve overall model fit, it can also collapse the coefficients of theoretical interest to “implausibly small and insignificant values”.

The practice of including a LDV in CSR research is relatively scarce. Only Waldman et al. (2006) included such a measure (albeit a lagged 5 year average DV) and their regression tables suggest that indeed there is a high correlation between past social performance and current social performance (Pearson correlations between 0.68 and 0.76

and highly significant). Yet, none of the relationships of interest (e.g., CEO charisma and CSR) in the Waldman et al. study were found to be significant; it is possible then, that including LDV measures may have actually suppressed the importance of these and other predictors as suggested by Achen (2000).

Given that the primary purpose of this research is to tease out the CEO effect on CSS, and the RCM analytic method used explicitly models the role of time (Schonfeld & Rindskopf, 2007), the use of lagged ACSS, BCSS or DCSS as autoregressive control variables is deemed inappropriate. While I return to the discussion of LDVs in the robustness analysis (Section 6.5), there is no a priori rationale for including these in the hypotheses testing.

Having introduced the choice of research methodology, the research design, the data and sample creation as well as defined the operationalization of all variables of interest, I now turn to an assessment of the findings. The presentation of results proceeds in two parts. First, I provide a general overview of the data through a descriptive analysis of the relationships of interest. I then move on to the RCM analysis introduced in this chapter.

CHAPTER 6: FINDINGS

The findings are presented as follows: I begin with general descriptive statistics (Section 6.1) as well as some preliminary testing of the patterns of change (Section 6.2) as recommended by Singer and Willett (2003). This is then followed by formal tests of the hypotheses using a random coefficient model (RCM) building technique (Sections 6.3), post-hoc tests (Section 6.4) and robustness tests of the data (Section 6.5). I conclude with a summary of the results of the hypotheses tests (Section 6.6) before engaging in a discussion of the findings in Chapter 7.

6.1 Descriptive Statistics

A summary of the variables used in this study, including the operationalization, means, standard deviations, skewness and kurtosis as well as any transformations necessary to ensure normality can be found in Table 6.1. Of note, the mean score for the overall level of corporate social strategy (ACSS) across all years, all firms and all industries is 8.9%, suggesting that out of all of the possible strengths firms could earn, the mean ACSS of corporations is still relatively low. However, the standard deviation is high (8.5), indicating a wide variability in the adoption of corporate social strategies over time, across firms and industries. Although some firms continue to “do nothing” (13 firms maintained an ACSS score of 0 throughout the 19 years measured), the maximum ACSS in the sample belongs to IBM, that had adopted 61.8% of all possible corporate social strengths in 2009.

The average breadth of corporate social strategy (BCSS) across all years, all firms and all industries is also a modest 0.49 (st. dev 0.50), with a minimum of 0 and a maximum of 1.63. As BCSS is an entropy measure of breadth, this suggests that most firms in this study are engaging in approximately one CSS category (community, diversity, environment, employee relations, product quality or human rights); only Motorola, scoring the maximum BCSS score of 1.63, has adopted CSS practices across all six categories. In comparison, the average depth of corporate social strategy (DCSS) is 0.25 (st. dev 0.18), with a minimum of 0 and a maximum of 1, suggesting that for the category in which a firm is most deeply engaged, firms adopt on average 25% of all of the CSS policies/programs in this category. For example, while the high score of 1 (100%) can be attributed to several firms that scored 1/1 in the human rights category in 1996, the depth of commitment to particular areas can still be seen in many firms such as Hewlett-Packard, that adopted 88% of all CSS in the diversity category in 2004 under CEO Carly Fiorina or Honeywell that adopted 83% of all CSS in the employee category in 2005 under CEO David Cote.

The descriptive statistics in Table 6.1 also provide some preliminary information about the 1,008 CEO’s in the dataset. The CEOs in this sample are on average 57 years old (minimum 30, maximum 90), male (98%), moderately conservative (-0.77) and have spent an average of 8 years as CEO, largely in throughput functions (64%) across approximately 2.7 functional areas. Of these CEOs, 39% hold an MBA degree, 11% hold a legal degree and 25% have international experience. These figures are similar to descriptive statistics of age, tenure, functional and educational background as well as international experience reported in previous studies suggesting the sample is both representative and generalizable.

The average firm size as measured by total assets was $26,798.80 (st. dev. $96,722.53), with the smallest firm being Time Warner in 1991 (total assets of only $8.0) and the largest firm, Bank of America, holding total assets of $2,223,299.0 in 2009.[11] This firm size measure was skewed and highly kurtotic and thus transformed using its natural log. The average past financial performance measured by ROA was 0.06 (st. dev 0.08). Although kurtotic, skewness was acceptable. As such, the ROA measure is left untransformed as recommended by Tabachnic and Fidell (2007).[12] The average for firm risk was 0.19 (st. dev 0.14) which was normally distributed. The R&D Intensity measure (with zeros) indicated an average R&D expenditure/sales ratio of 0.03 (st. dev. 0.05) which was transformed using its square root.

[11] Note: Total assets are reported in millions of USD. The 1991 Time Warner total asset figure seemed small, so the Compustat figure was cross-referenced with the financial statements available on Mergent Online and was found to be accurate.

[12] A robustness test using a Windsorized past performance variable is discussed in Section 6.5.

Table 6.1: Descriptive Statistics

Variable	Operationalization	N	Missing Data	Min	Max	Mean	St.Dev	Skewness	Kurtosis
Dependent Variables:									
Aggregate CSS	Total KLD strengths/Total possible KLD strengths (x100)	6334	0.0%	0	61.76	8.89	8.48	1.39	2.47
Breadth of CSS	Entropy measure of breadth	6334	0.0%	0	1.63	0.49	0.50	0.39	-1.28
Depth of CSS	Specialization ratio (Highest total proportional score in one area)	6334	0.0%	0	1	0.25	0.18	0.65	0.48
Independent Variables:									
CEO liberal worldview	3 strongly liberal 2 moderately liberal 1 slightly liberal 0 neutral -1 slightly conservative -2 moderately conservative -3 strongly conservative	6334	0.0%	-3	3	-0.77	1.70	0.40	-0.53
CEO functional background	Output (1): sales, marketing, product R&D, entrepreneurship; Throughput (0): production, operations, accounting, finance, law, process R&D	6334	0.0%	0	1	0.36	0.48		
	Count of the number of different functional areas	6334	0.0%	0	6	2.70	0.90	0.25	0.47
CEO educational background	CEO holds an MBA degree	5982	5.6%	0	1	0.39	0.49		
	CEO holds a law degree	5982	5.6%	0	1	0.11	0.31		
CEO international experience	Experience in an international function or in a function with international responsibilities, studied abroad, born abroad	6334	0.0%	0	1	0.25	0.43		
Moderating Variables									
Industry norms	Average ACSS/Industry	349	0.0%	0.89	20.50	8.89	2.44	0.28	2.86
	Average BCSS/Industry	349	0.0%	0.00	1.12	0.49	0.18	-1.30	0.94
	Average DCSS/Industry	349	0.0%	0.00	0.46	0.25	0.06	-0.15	2.24
Managerial discretion	Industry ratings: Low/High(0/1)	349	0.0%	0.00	1.00	0.50	0.50		
Control Variables									
CEO age	Age in years	6334	0.0%	33	90	57.16	6.84	0.31	1.44
CEO gender	Male (0)/Female (1)	6334	0.0%	0	1	0.02	0.14		
CEO tenure	Years as CEO	6334	0.0%	0.3	48.0	8.06	7.95	1.96	4.08
	Years employed at firm	6334	0.0%	0.3	60.6	21.65	12.78	0.08	-0.97
Firm size	Total Assets (Log Transformed)	6315 (6315)	0.3% (0.3%)	8 (.90)	2223299 (6.35)	26798.80 (3.75)	96722.53 (.722)	9.70 (.253)	128.96 (.138)
Past Performance	ROA 1 year lag	6321	0.2%	-1.09	0.95	0.0579	0.08	-0.91	27.09
Firm risk	Ratio of long term debt/total assets	6298	0.6%	0	1.07	0.19	0.14	0.92	1.87
R&D Intensity	R&D Expenditures/Sales (Log Transformed)	3600 (3136)	43.2% (50.2%)	0 (-3.25)	0.7439 (-0.13)	0.05 (-1.53)	0.06 (0.49)	2.96 (-0.25)	16.61 (-0.11)
	R&D Expenditures/Sales (all n/a=0) (SQRT Transformed)	6334 (6334)	0.0% (0.0%)	0 (0.0)	0.7439 (0.86)	0.03 (0.099)	0.05 (0.13)	3.69 (1.27)	23.96 (1.21)

Table 6.2 presents the correlations between the variables included in the study based on pooled observations. Of note, Table 6.2 provides some preliminary evidence in support of several hypotheses. First, with regards to the aggregate level of CSS, the correlation matrix suggests that CEO's with a liberal worldview (Hypothesis 4), with a dominant functional background in output functions (Hypothesis 6), with a greater breadth of functional experience (Hypothesis 8) and with international experience (Hypothesis 10) are significantly and positively related to ACSS. Interestingly, the correlations between the educational background variables are also significant, yet while the legal mindset hypothesis (Hypothesis 14) is in the predicted direction ($r=-.049$, $p<0.000$), the hypothesis around the MBA mindset (Hypothesis 12) is significant, but in the direction opposite of that predicted ($r=.039$, $p<0.01$).

Several control variables are also significantly correlated to a firm's ACSS. At the individual level, CEO age ($r=-0.058$, $p<0.000$) and tenure as CEO ($r=-0.095$, $p<0.000$) are negatively related to ACSS while CEO gender ($r=0.086$, $p<0.000$) and CEO tenure at the firm ($r=0.049$, $p<0.000$) are positively and significantly related to ACSS. At the firm level, size ($r=0.461$, $p<0.000$) and R&D Intensity ($r=0.225$, $p<0.000$) are both positively and significantly related to ACSS, while firm risk, and past financial performance do not appear to be related to ACSS.

The correlation patterns are much the same for BCSS and DCSS with the following notable exceptions. A CEO's liberal worldview appears to be positively related to depth of commitment, yet not to the breadth of corporate social strategies pursued. In contrast, CEOs with an MBA are positively related to breadth of corporate social strategies, yet not with depth. The positive, significant correlations for CEOs with output functions, greater functional breadth and international experience hold for BCSS and

DCSS, as does the negative association with a legal mindset. The control variables also show similar patterns, although past financial performance becomes significantly related to depth of CSS and firm risk is positively associated with the breadth of CSS suggesting some interesting nuances in the data.

Given that no inter-factor correlations are above the recommended level of .70 (Tabachnick & Fidell, 2007), multicollinearity is not likely to bias the data. However, I nonetheless formally tested for multicollinearity by running a pooled OLS regression with ACSS as the dependent variable and found no variance inflation factor (VIF) higher than 1.6, well below the accepted maximum of 10 (Paetzold, 1992).[13] Hence, multicollinearity is not considered an issue in this study.

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[13] The pooled OLS regression also revealed some interesting positive relationships between the predictor variables and the dependent variables, with the CEO executive orientation factors adding approximately 4% to the ACSS baseline control variable model with an R^2 of 31.1% (n=5,942). Further, many of the hypothesized relationships between CEO executive orientation and CSS were supported. For ACSS, CEOs with a liberal worldview (β=0.203, p<0.000), functional background in output roles (β=1.617, p<0.000), with a breadth of functional experience (β=0.238, p<0.05) and international experience (β =1.149, p<0.000) were positively and significantly related to ACSS as predicted. This omnibus test, however, failed to provide support for the hypothesized negative relationship between a CEO's MBA mindset and ACSS, although a legal mindset is negatively and significantly related to ACSS (β =-0.953, p<0.000). The pooled OLS regressions were also run for BCSS and DCSS as dependent variables; while the hypothesized relationships held for DCSS, there were in general, less significant relationships between the executive orientation variables and the breadth of CSS than there were for depth, suggesting there may be variations in the determinants of these two dimensions of CSS.

Table 6.2: Correlations

Correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	ACSS	1.000																
2	BCSS	.820**	1.000															
3	DCSS	.866**	.629**	1.000														
4	Political	.029*	0.009	.046**	1.000													
5	Output Function	.098**	.061**	.100**	-.025*	1.000												
6	Functional	.127**	.105**	.126**	-.039**	-0.020	1.000											
7	MBA	.039**	.038**	0.022	-.093**	-0.006	-.034**	1.000										
8	JD/ LLB	-.049**	-.037**	-.040**	.094**	-.182**	.103**	-.195**	1.000									
9	Int. Experience	.190**	.127**	.177**	0.020	.111**	.110**	.101**	-.079**	1.000								
10	Tenure as CEO	-.095**	-.077**	-.087**	-0.015	.106**	-.151**	-.102**	.026*	-.138**	1.000							
11	Tenure at firm	.049**	.056**	.031*	-.054**	.062**	-.073**	-.075**	-.038**	-.068**	.462**	1.000						
12	Age	-.058**	-.041**	-.063**	-.037**	0.000	-.084**	-.111**	.107**	-.093**	.517**	.425**	1.000					
13	Gender	.086**	0.010	.100**	.099**	.090**	.028*	-.067**	-0.020	.044**	-.028*	-.097**	-.049**	1.000				
14	Size	.461**	.360**	.374**	-.053**	-.118**	.181**	.032*	.036**	.112**	-.138**	.031*	-0.003	-.079**	1.000			
15	Past Performance	0.023	0.018	.030*	-.040**	.083**	-.044**	0.019	-.038**	.025*	.091**	.074**	0.007	.029*	-.159**	1.000		
16	Risk	0.022	.032**	0.014	.088**	-.028*	.085**	0.006	.059**	.050**	-.097**	-.056**	-0.013	-0.024	.147**	-.264**	1.000	
17	R&DIntensity	.225**	.230**	.160**	-0.022	.132**	.037**	.077**	-.050**	.222**	-.083**	-.099**	-.094**	0.004	-.027*	.147**	-.184**	1.000

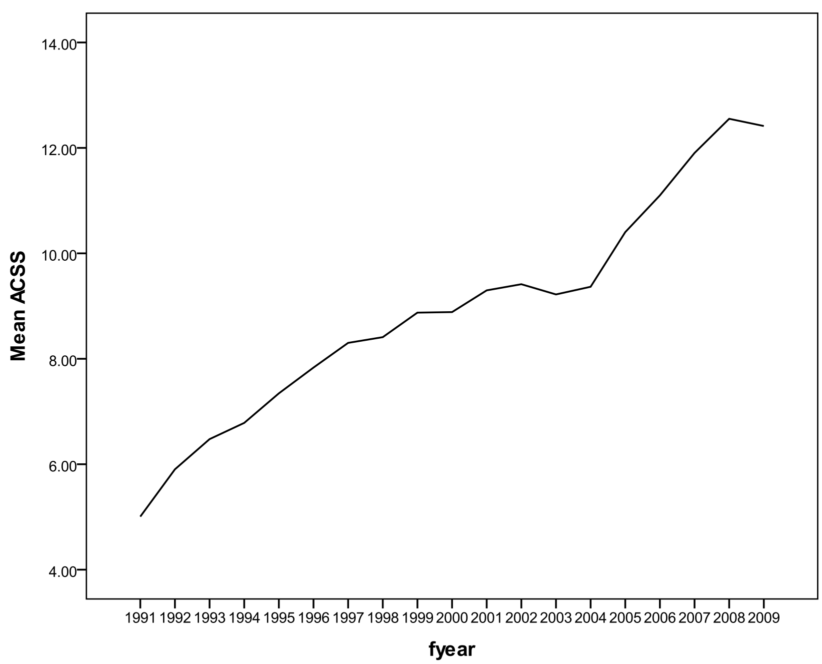
**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

6.2 Preliminary Testing: Patterns of Change

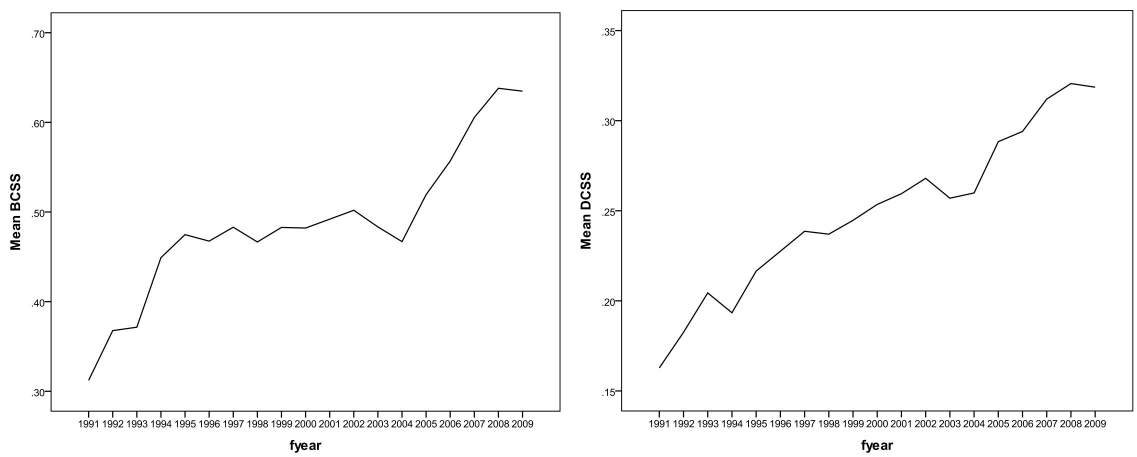
As suggested by Singer and Willett (2003), before beginning the formal model testing, I first explored the patterns of change present in the longitudinal dataset visually. Figure 6.1 depicts the mean ACSS of all companies in the dataset over time, without regard for the nesting of the firms within industries. One can see from figure 6.1 that the mean aggregate CSS rate appears to start at around 5% in 1991 and grow to just over 12% by 2009, more than doubling over the 19 year time span. Further, there appears to be a slight deceleration in the rate of growth in the early 2000's, followed by a steeper trajectory post 2004.

Figure 6.1: Mean ACSS from 1991-2009



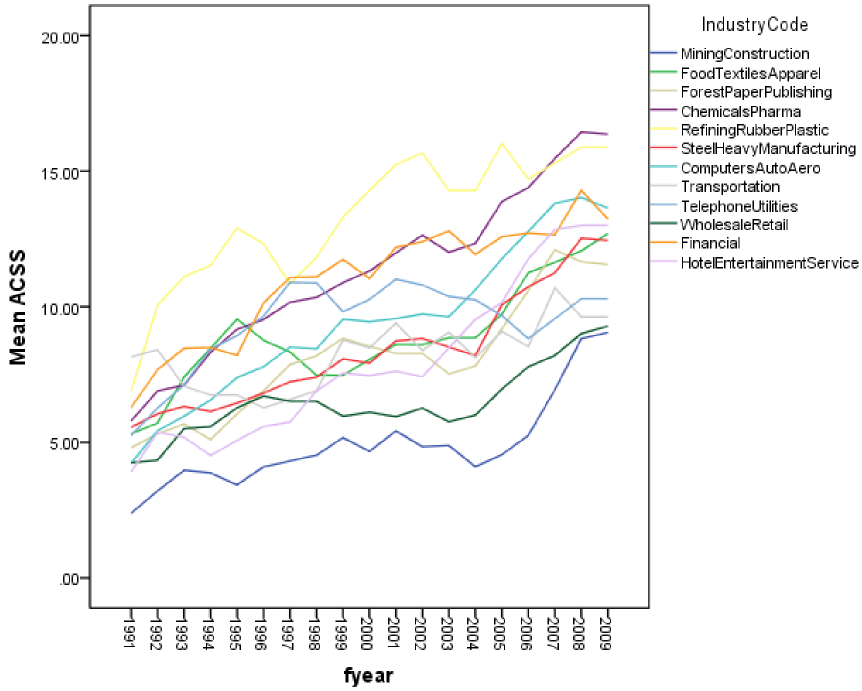
The patterns of change for BCSS and DCSS also appear linear and increasing over time, with a similar acceleration in the rate of change after 2004 more apparent for BCSS than DCSS as shown in Figure 6.2.

Figure 6.2: Mean BCSS and DCSS from 1991-2009



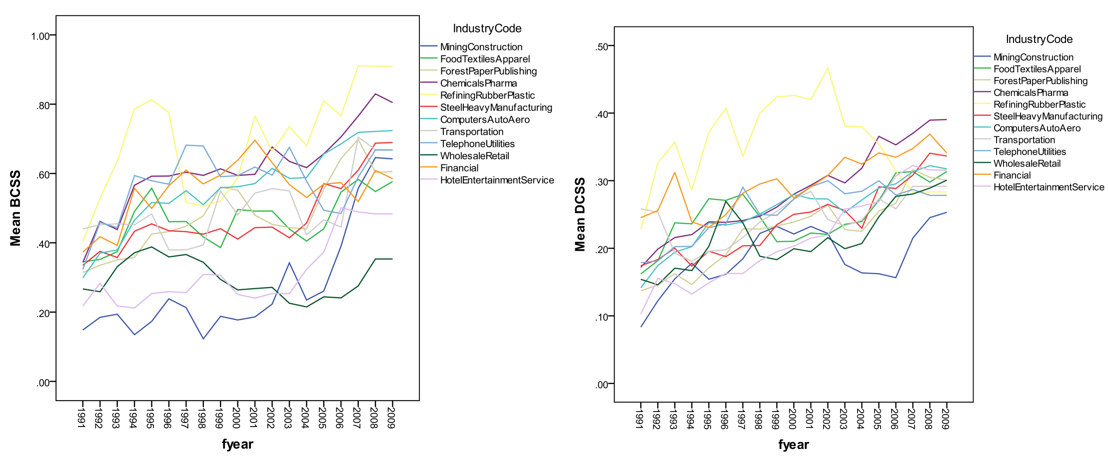
In order to visualize if the increases in mean ACSS vary by industry, the mean ACSS was plotted against year by industry grouping. There appears to be some variance in the initial status and growth slopes by industry as illustrated by Figure 6.3. For example, it appears that the Refining/Rubber/Plastic industry has consistently outperformed other industries, while the chemical/pharmaceutical industry has shown the steepest adoption curve. While some industries have much flatter growth curves (e.g. wholesale/retail), consistent with Figure 6.1 above, on the whole it appears as though aggregate CSS has been growing over time.

Figure 6.3: Mean ACSS from 1991-2009 by Industry



Depth and breadth appear to follow a similar pattern, although there seems to be a greater degree of heterogeneity in the pattern of mean BCSS by industry over time as illustrated in Figures 6.4 below.

Figure 6.4: Mean BCSS and DCSS from 1991-2009 by Industry



These visual tests, however, still do not tell us if the overall patterns of change over time are linear or significant as predicted in Hypothesis 1. To explore the overall role of time very generally, I first ran a series of simple models where corporate social strategy was regressed on time as recommended by Bliese and Ployhart (2002). As can be seen in Table 6.3, the results show that time has a small, yet positive and significant relationship with the aggregate level, breadth and depth of CSS. When looking at the aggregate level of CSS, the mean ACSS score at the initial point of data collection (time=0) was 5.62%, growing approximately 0.37%/year; the initial breadth was .368, growing approximately .013 units/year and the initial depth was 0.179 increasing at only 0.008/year.

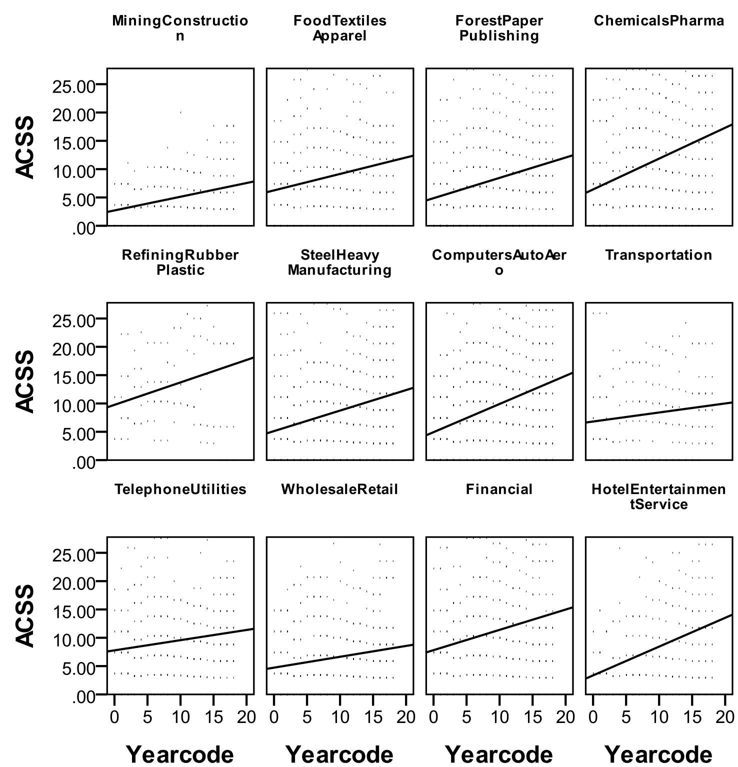
Table 6.3: Ordinary Least Squares Model Regressing CSS on Time

DV	Intercept (S.E.)	Beta (S.E.)	R^2
ACSS	5.622*** (0.200)	0.366*** (0.019)	.054***
BCSS	0.368*** (0.012)	0.013*** (0.001)	.020***
DCSS	0.179*** (0.004)	0.008*** (0.000)	.052***

These very simple, illustrative models however, do not provide any information with regards to the variance in growth trajectories between industries or between firms, nor do they tell us anything about within-firm changes in initial status or growth of CSS over time. The most significant limitation with these regression models, therefore, are that they assume that all firms start at the same initial level of CSS and grow at the same rate (that is, they are fixed-effects models).

To illustrate, Figure 6.5 depicts the relationship between time and the total aggregate level of firm CSS, paneled by industry for ease of visualization. As can be seen, the intercepts (the initial level of CSS) as well as the growth trajectories (the slope of CSS) appear to vary by industry. For example, the mean ACSS at the initial point of data collection (time=0) for the mining/construction industry is close to 2.5%, while the initial status for the refining/rubber/plastic industry appears to be closer to 10% – both of which differ significantly from the total sample mean which was 5.6%, as established above. Similarly, the rate of change in ACSS also appears to vary by industry with the adoption of ACSS occurring most rapidly in the chemical/pharmaceutical industry (steeper OLS curve), in contrast to very little change in transportation or wholesale retail industries (flatter OLS curves).

Figure 6.5: Relationship Between Time and ACSS by Industry



It appears, therefore, that the industry level CSS intercepts and growth trajectories follow a similar overall linear pattern, yet the differences would justify a random industry-specific time slope as well as a random industry-specific intercept (West et al., 2007). I found these trends to be similar for both the breadth of CSS and the depth of CSS measures over time as well as seen in Figures 6.6 and 6.7, although BCSS growth curves on the whole appear to be flatter than DCSS, and even negative in one case - the wholesale/retail industry. Although preliminary, these growth charts demonstrate that BCSS and DCSS could explain differences in strategic approaches to CSS, with some industries focusing on growing through breadth and others through depth, a nuance not discernable through a focus on ACSS only.

Figure 6.6: Relationship Between Time and BCSS by Industry

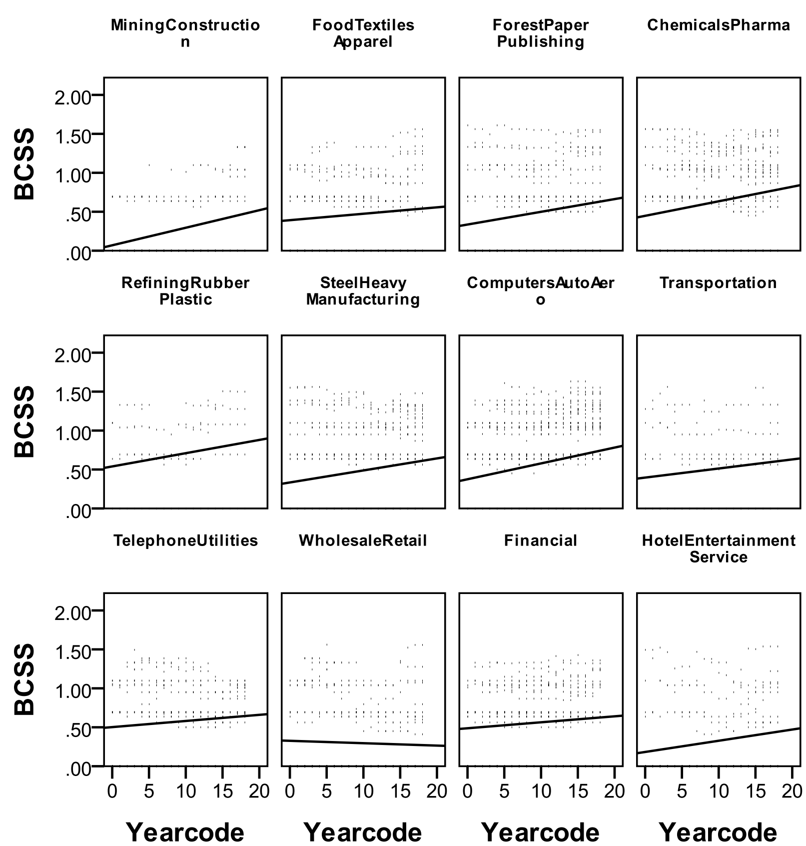
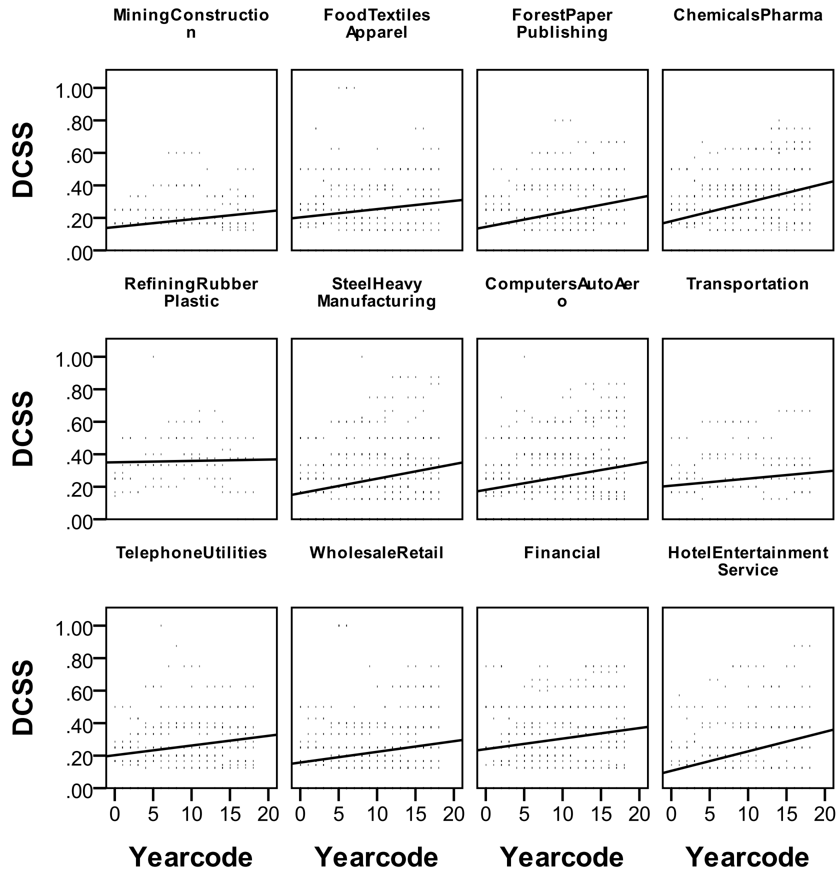
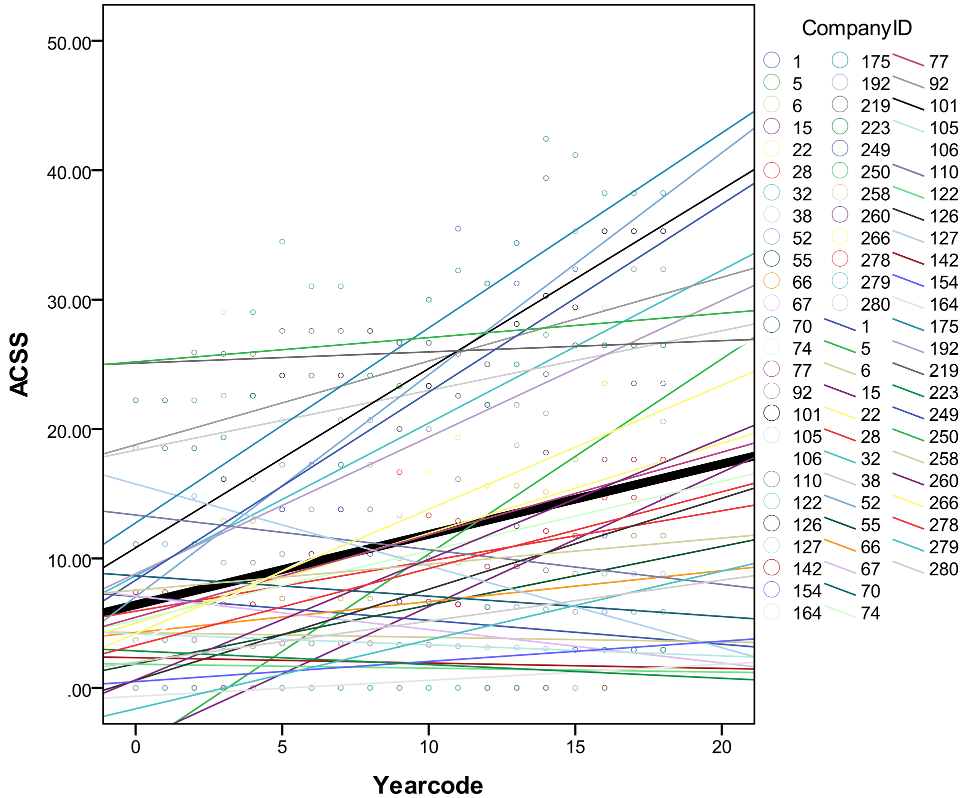


Figure 6.7: Relationship Between Time and DCSS by Industry



These illustrations, however, also do not shed any light with regards to the variances in growth rates between firms within each industry. Taking the chemical/pharmaceutical industry as an example, Figure 6.8 below illustrates that although the ACSS growth trajectory appears to be increasing over time (as indicated by the thick black line), there are nonetheless significant variances in both the initial level of ACSS as well as the growth of ACSS for each firm within this industry over time, with some firms starting high, yet adding very few ACSS initiatives over time, while other firms have started with a lower level of ACSS, but made greater progress in adopting ACSS practices over time.

Figure 6.8: Relationship Between Time and ACSS for firms in the Chemical/Pharmaceutical Industry



Interesting patterns also emerge for BCSS and DCSS. The BCSS of the chemical/pharmaceutical industry as illustrated in Figure 6.9, for example, while still showing an overall positive, linear growth trajectory over time, demonstrates significant variance in the intercept and slope of individual firm growth trajectories over time, with some notable and significant negative trajectories such as for Company ID 127 (H.B. Fuller, that went from an entropy measure of 1.1 to 0.0 between 1991 and 2009) and Company ID 67 (Calgon Carbon Corporation, that went from 0.69 to 0.00 over the 19 years). The ACSS, BCSS and DCSS growth trajectories by industry are included in Appendix A.

Figure 6.9: Relationship Between Time and BCSS for firms in the Chemical/Pharmaceutical Industry

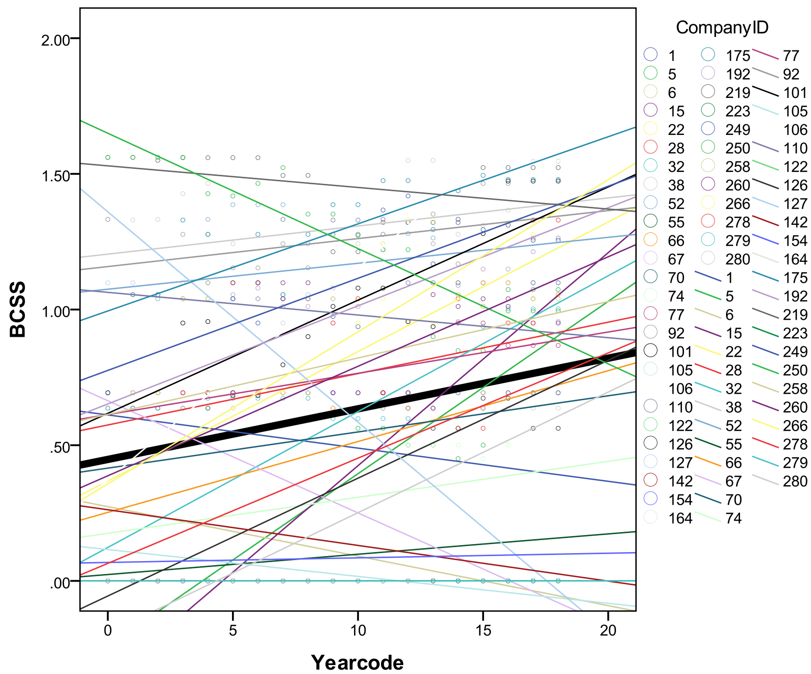
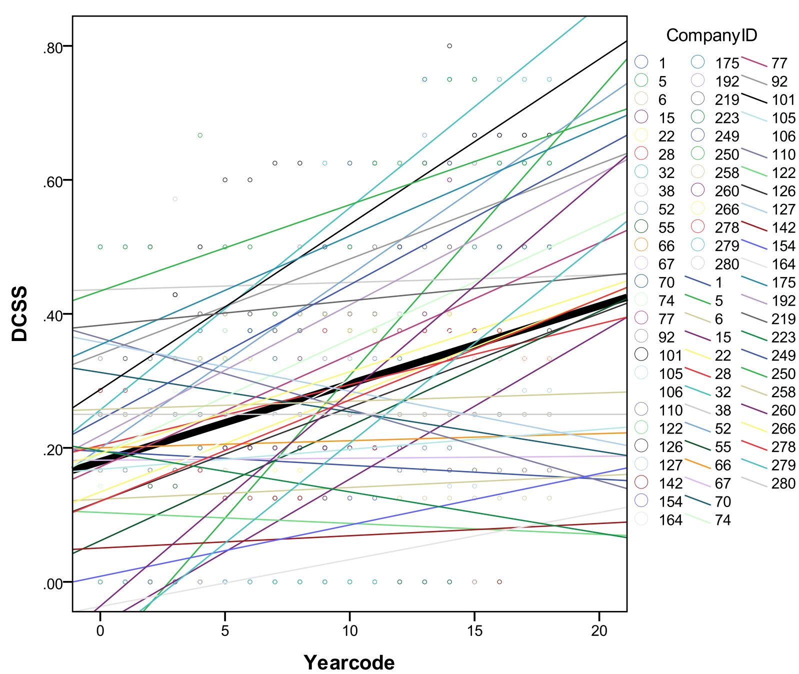


Figure 6.10: Relationship Between Time and DCSS for firms in the Chemical/Pharmaceutical Industry



These preliminary tests of relationships and growth patterns suggest that there is some initial support to Hypothesis 1-3 that predicted that there will be an overall linear growth rate of (a) aggregate corporate social strategy, (b) breadth of corporate social strategy and (c) depth of corporate social strategy over time and that firms will differ significantly in both their initial levels and rates of adoption of CSS over time. These tests, however, do not formally test the significance of these relationships. As such, I now turn to formal model building and hypotheses testing using a random coefficient modeling (RCM) approach as introduced in Section 5.8 and detailed in the following sections.

6.3 Hypotheses Testing

In order to test the hypotheses, a longitudinal, multi-level growth model was built using the sequential "step-up" or "model comparison" strategy as recommended for RCM - Random Coefficient Modeling (Bliese & Ployhart, 2002; Hox, 2010; Ployhart, Holtz & Bliese, 2002; Raudenbush & Bryk, 2002; Singer & Willett, 2003; Tabachnick & Fidell, 2007). With this method, one begins with a simple regression framework that partitions the variance in the dependent variable between hierarchical levels and then builds progressively towards more complex models, testing for increased model fit using deviance statistics or likelihood ratios. The five main steps in this sequential procedure are outlined in Table 6.4 below.[14]

[14] Note that existing applications of the model comparison approach in RCM vary somewhat with regards to the steps, sequence and emphasis placed on each component of this procedure. For example, Thoresen et al. (2004) bypass Step 1b, while Holcomb et al. (2010) and Mysangi et al. (2006) emphasize this step, yet omit Step 2. Table 6.4 thus presents a composite of existing procedures that is aimed at completeness.

Table 6.4: Sequence of Steps in Building Longitudinal, Multi-Level Growth Models

Model Building Steps	Interpretation
1. Define the Null Models:	
a) Estimate an unconditional means (random intercept) model	Estimate ICC - how much variability in CSS can be attributed to within vs. between firms and between industries; Decide whether a multi-level model is warranted
b) Estimate an unconditional linear growth model with fixed effects	Estimate how much variability in CSS can be attributed to year effects specifically
c) Estimate an unconditional linear growth model with random effects	Significance test of parameters to determine if variances in intercept, slope and intercept/slope covariance are statistically significant over time Differences in likelihood ratio for overall fit compared to unconditional means models
2. Determine the function of time: Estimate the shape of CSS over time (is it linear, quadratic, cubic or another higher order polynomial model)	Significance test of parameters Differences in likelihood ratio for overall fit compared to unconditional linear growth models.
3. **Estimate the error structure** (homogeneous, auto-correlated etc.)	Differences in likelihood ratios
4. **Add time-variant predictors** of variability in initial-status and growth of CSS to the final Level 1 model	Significance test of parameters & Differences in likelihood ratios
5. **Add time in-variant predictors** of variability to the Level 2 model and/or Level 3 models	Significance test of parameters & Differences in likelihood ratios

Adapted from: Bliese & Ployhart (2002), Singer & Willet (2003) and Holcomb et al. (2010)

6.3.1 Step 1: Defining the Null Models

The first step in the model comparison approach is to build a series of null models beginning with a basic unconditional *means* model and basic unconditional *growth* models to partition the outcome variance first across firms without regard to time (the unconditional *means* model) and second, across both firms and time (the unconditional *growth* models)(Singer & Willett, 2003). These simple models are also commonly referred to as null models (Peugh & Enders, 2005), empty longitudinal models (Hoffman & Stawski, 2009), random intercept and random slope models (Bliese & Ployhart, 2002) or variance components models (West et al., 2007), and serve not only as baselines against which subsequent models can be compared, but also to establish if there is sufficient systemic variation in the outcome measures (ACSS, BCSS, DCSS) to warrant further multi-level analysis.

I follow the notation for three-level longitudinal model-building using RCM from Raudenbush and Bryk (2002), Peugh and Enders (2005), Bliese and Ployhart (2002) and Luke (2004), which are most similar to the notations commonly used in three-level studies of organizational change such as Chen (2005), Holcomb et al. (2010) and Mysangi et al. (2006).[15] The subscripts t, i, and j denote time, firm and industry respectively where there are:

t= 1, 2, ….. T_{ij} time periods within firm i in industry j;

i = 1, 2, …….I_j firms within industry j; and

j = 1,2,……..J industries.

6.3.1.1 The Unconditional Means Model

The unconditional means model for a three-level analysis partitions the variation in the dependent variable (ACSS, BCSS, DCSS) among three levels: (1) within-firms across

[15] Note: Notations used by various researchers/disciplines differ only in the symbols used to represent the variances and error terms at each level and are substantively equivalent. For example, Singer & Willet (2003) use ζ to denote the Level 2 random effect rather than r.

time, (2) between-firms (nested within industries) and (3) between-industries, such that the equations read as follows:

Level 1 (within-firms):	$Y_{tij} = \pi_{0ij} + e_{tij}$	(1)
Level 2 (between-firm):	$\pi_{0ij} = \beta_{00j} + r_{0ij}$	(2)
Level 3 (between-industries):	$\beta_{00j} = \gamma_{000} + u_{00j}$	(3)

At Level 1 (within-firms across time), the null model predicts CSS at each time period as a function of an intercept (firm mean CSS) plus a random error. Y_{tij} is the dependent variable (ACSS, BCSS, DCSS) for time period *t* of firm *i* in industry *j*; π_{0ij} is the mean of Y for firm *i* in industry *j* (across time) and e_{tij} is a random "time effect", that is the deviation of Y for time period *t* of firm *i* in industry *j*. It is assumed that e_{tij} is normally distributed with a mean of zero and a variance of σ^2 (Holcomb et al., 2010; Misangyi et al., 2006).

At level 2 (between firms nested within industries), the mean CSS of each firm over time (π_{0ij}) is assumed to vary randomly around each industry's mean CSS. β_{00j} is the mean of Y for industry *j* in time period *t* and r_{0ij} is the random "firm effect" or the deviation of Y for firm *i* in industry *j* over time. It is assumed that r_{0ij} is normally distributed with a mean of zero and a variance of τ_{π}.

At level 3 (between-industries), the intercept β_{00j} is modeled as a dependent variable that varies randomly around the grand mean of CSS (γ_{000}) and u_{00j} is the random "industry effect", or the deviation of Y for industry *j* over time. Here, it is assumed that u_{00j} is normally distributed with a mean of zero and a variance of τ_{β}.

The unconditional means model is therefore able to partition the variance in CSS into three components: σ^2, within firms (across time periods), τ_π, between firms within industries and and τ_β, between industries. Based on the estimates of these variance components it is therefore possible to calculate the proportion of variance that resides at each level – also known as the Intraclass Correlation Coefficient (ICC)(Singer & Willett, 2003). If this measure is significant, the ICC demonstrates that the dependent variable differs within firms across time, between firms within industries and between industries and thus confirms that a multi-level model is warranted. High values of the ICC also suggest that there is a nontrivial degree of non-independence of observations, thus justifies the use of RCM or another multi-level analytic method that does not rest on the i.i.d. assumption necessary in traditional OLS regression (Tabachnick & Fidell, 2007).

The three level ICC is calculated as follows:

Level 1 (proportion of variance within firms across time): $\sigma^2 / (\sigma^2 + \tau_\pi + \tau_\beta)$

Level 2 (proportion of variance between firms within industries): $\tau_\pi / (\sigma^2 + \tau_\pi + \tau_\beta)$

Level 3 (proportion of variance between industries): $\tau_\beta / (\sigma^2 + \tau_\pi + \tau_\beta)$

The results for Step 1, the unconditional means (or random intercept) models for ACSS, BCSS and DCSS are shown in Table 6.5.[16] As can be seen, the unconditional means model for ACSS (Model 1a) indicates that 68.2 % of the variance in ACSS is between firms within industries, while 30.1 % of the variance in ACSS is within firms (both significant at the $p<0.000$ level). In contrast, only 1.7% of the variance in ACSS is

[16] In all cases and throughout this thesis, robust standard errors are reported as these automatically correct for any departures from the assumptions of the variance-covariance matrix (Raudenbush et al., 2004).

between industries. As can be seen in Models 1b and 1c, these patterns were also similar for the unconditional means models for BCSS and DCSS (with the industry level variance insignificant in the DCSS model).

Because the between industry variation is very small in all models, and the reliability estimates for the Level 2 random coefficients, β_{00j}, are also very low across all three models (ACSS: 0.384, BCSS: 0.558, DCSS: 0.201), a two-level model may be advisable.[17] The reliability estimates capture the systemic portion of variance available to be explained by industry level factors in a 3 level model and hence are an early indication that accurately estimating the predictors for the majority of the variance between industries will be difficult (Russell, 2001). At this stage, however, the model building continues at three levels for exploratory purposes.

[17] Note: In order to ensure that the small industry variance was not due to the chosen method of coding for industry, Models 1a-c were also run with firms nested in their original 4 digit SIC codes as well as their 2 digit SIC codes. Although the 4 digit SIC is often used in organizational research (e.g. Misangy et al., 2006), this operationalization likely violates power requirements for multi-level modeling as some 4 digit SIC's may only contain one firm (as is the case in my sample). As such, this model failed to run. Nesting the firms within their 2 digit SIC, rather than the 1 digit SIC, yielded near identical results with regards to the variance components estimated in Step 1. Furthermore, the industry variance in this specification was insignificant across all dependent variables. As such, the original operationalization for industry was retained at this point for theoretical and methodological comparisons to Waddock & Grave's (1997) seminal work in the field.

Table 6.5: Results for Unconditional Means Models for ACSS, BCSS and DCSS

Unconditional Means Models	Para-meter	Model 1a: ACSS		Model 1b: BCSS		Model 1c: DCSS	
Fixed Effect		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
Grand Mean (Intercept)	γ_{000}	8.753***	(0.503)	0.476***	(0.034)	0.247***	(0.009)
Random Effects		**Variance**	**(SD)**	**Variance**	**(SD)**	**Variance**	**(SD)**
Level 1 Temporal variation (within-firm variation of CSS over time)	e_{tij}	21.285***	(4.614)	0.098***	(0.312)	0.014***	(0.117)
Level 2 Between firm variation in intercept (variation in initial CSS between firms within industries)	r_{ij}	48.280***	(4.948)	0.144***	(0.379)	0.020***	(0.142)
Level 3 Between industry variation in intercept (variation in mean CSS between industries)	u_j	1.175*	(1.084)	0.008*	(0.098)	0.000	(0.014)
Variance Decomposition by Level		**% by Level**		**% by Level**		**% by Level**	
Level 1 (within-firm over time)		30.1%		39.4%		41.2%	
Level 2 (between-firms within industries)		68.2%		57.8%		58.8%	
Level 3 (between industries)		1.7%		2.8%		0.0%	
Goodness of Fit			**pm**		**pm**		**pm**
Deviance		38655	4	4399	4	-8049	4
Reliabilities							
Reliability Estimate of Random Level 1 Coefficient	π_{0ij}	0.976		0.964		0.963	
Reliability Estimate of Random Level 2 Coefficient	β_{00j}	0.384		0.558		0.201	

n= 6,334 observations, nested within 349 firms, nested within 12 industries

*** p< .001

** p< .01

* p< .05

Note that the unconditional models report a deviance statistic based on -2 Log Likelihood (-2LL) which are estimated using Full Maximum Likelihood (FML) rather than Restricted Maximum Likelihood (REML). FML and REML will usually produce the same results for the level-1 residuals in large sample data sets, however, FML is the appropriate method for overall model fit testing as it accounts for different sets of fixed-effect parameters (West et al., 2007). The deviance statistics of the null models reported in Table 6.5 have no meaning on their own, yet the deviance statistics of subsequent models can be directly compared to these reference models by subtracting the -2LL of the nested model from the reference model and using an overall chi-square test to gauge improvements in model fit. Under REML estimation, on the other hand, only the differences in the random part of the models can be compared using the chi-square tests (Hox, 2010) rendering REML estimation inappropriate in the context of testing hypotheses about fixed effect parameters (West et al., 2007).[18]

6.3.1.2 The Unconditional Linear Growth Models

The second null model to be estimated is the unconditional linear growth model which is also a direct test of Hypotheses 1-3 in that the unconditional growth model can test if CSS follows a linear increasing trajectory, on average, over time (H1a-c) and whether there are significant differences in firms' initial levels (H2a-c) and rates of adoption of CSS over time (H3a-c). Holcomb et al. (2010) suggest that one fit two types

[18] FML is also a methodological constraint imposed by the HLM6 software for 3 level models (Raudenbush, S., Bryk, A., Cheong, Y. F., Congdon, R., & Du Toit, M. 2004. *HLM 6: Hierarchical Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International, Inc.).

of unconditional linear growth models – one with fixed effects at all levels, followed by an unconditional linear growth model with random effects at all levels.

The benefit of first estimating the unconditional growth model with the fixed effects at all levels, is that it allows you to isolate the effect of the year variable on reducing the total variance explained (Misangyi et al., 2006). As such, in contrast to the unconditional means model, rather than examining the amount of variance attributable to each level, the unconditional growth model estimates the variance explained by year effects specifically to determine if the patterns of change vary significantly between firms over time (Holcomb et al., 2010).[19] This is done by extending the unconditional means model to include a $YEAR_{tij}$ covariate and its slope coefficient π_{1ij} to the Level 1 equation in order to model the change in CSS for firm *i* in industry *j* for each period. In a three level format, this model is as follows:

$$\text{Level 1: } Y_{tij} = \pi_{0ij} + \pi_{1ij}(YEAR_{tij}) + e_{tij} \quad (4)$$

$$\text{Level 2: } \pi_{0ij} = \beta_{00j} + r_{0ij} \quad (5a)$$

$$\pi_{1ij} = \beta_{10j} \quad (5b)$$

$$\text{Level 3: } \beta_{00j} = \gamma_{000} + u_{00j} \quad (6a)$$

$$\beta_{10j} = \gamma_{100} \quad (6b)$$

The Level 1 unconditional linear growth model in Equation (4) describes the linear growth trajectory for CSS (aggregate, breadth or depth) at time *t* for firm *i* in industry *j*. Specifically, firm *i* in industry *j's* CSS score at time *t* is modeled as a function of the intercept (the initial status of firm *ij*, π_{0ij}), the slope or the growth rate of CSS for

[19] Note: This is conceptually very different than modeling year effects with dummy variables, which control for environmental jolts that are assumed to affect all firms similarly. Including a time vector in RCM models allows for the examination of the individual firm growth trajectories of CSS over time – first as fixed and then as varying between firms and industries over time (See Short et al., 2006 for a discussion).

firm *ij* during the study (π_{1ij}), and a time-specific residual term (e_{tij}) that captures the deviation between a firm's observed score and its estimated linear trajectory (Peugh & Enders, 2005). Because the dependent variable is measured every year and is equally spaced, the time variable ($YEAR_{tij}$), which is a Level 1 covariate, uses integer values between 0 (at the initial observation in 1991) and 18 (for the final year in the database, 2009). Centering time in this way "allows the intercept to be interpreted as the estimated initial status (i.e., the expected value of the outcome variable when time=0)" (Peugh & Enders, 2005: 731) and is a commonly used centering method for time in organizational studies (e.g., Holcomb et al., 2010).

The Level 2 models describe the individual firm intercepts and slopes as a function of their mean intercepts and slopes. Equation (5a), for example, defines the mean initial status of CSS for firm *i* in industry *j* (intercept) as a function of the mean initial status within industry *j* (β_{00j}), plus a firm deviation (r_{0ij}) from this mean initial status. Equation (5b), on the other hand, defines firm *ij*'s growth rate in CSS as a function of the mean growth rate within the industry (β_{10j}), which here is assumed to be fixed.

At Level 3, the mean initial status of CSS within industry *j*, β_{00j}, is modeled as function of the overall initial mean status of CSS of all firms (γ_{000}) and a random variance (u_{00j}). β_{10j} is the mean growth within industry *j*, while γ_{100}, is the overall mean growth rate of CSS, which again, at this step, is assumed to be fixed.

The results for the unconditional linear change model with fixed effects are presented in Table 6.6. As can be seen in Model 2a, the grand mean of ACSS is now 5.6% vs. 8.7% in the unconditional means model. In the unconditional means model, the grand mean of 8.7% represented the grand mean in the sample regardless of time. In the unconditional linear change model with a fixed time effect, the overall initial mean status of CSS of all firms (γ_{000}) is 5.6% (p <0.000), and can now be interpreted as the average initial status of ACSS for all firms at time zero (1991).[20] Further, the average rate of change for ACSS (γ_{100}) across all firms over the 18 years is 0.353 which is also highly significant (p <0.000) supporting a linear growth trajectory as predicted in Hypothesis 1a. Models 2b and 2c show similar patterns for both BCSS and DCSS. The average breadth of CSS for all firms in 1991 was 0.367 and the average depth of CSS was 0.181, both significant (p<0.000); slope coefficients for BCSS and DCSS were also positive and significant, supporting a linear growth trend over time as predicted in Hypothesis 1b and Hypothesis 1c.

The unconditional growth models with fixed effects can also be used to assess the reduction in the variance component in the temporal variation (e_{tij}) at Level 1 to estimate the total variance explained specifically by year effects (Singer & Willett, 2003). Here, the Level 1 variance component for ACSS was reduced from 21.285 in the unconditional means model (Model 1a) to 17.512 (Model 2a). The total variance explained by year effects then is 3.773/ (total variance in the unconditional means model) = 3.773/70.74=0.0536 or 5.3%. Similarly, BCSS and DCSS also saw a reduction in the temporal variation estimate such that the total variance in BCSS explained by the year effect is thus 2.0% (0.098-0.093)=0.005/0.249=0.02) and the total variance in DCSS explained by the year effect is 5.9% (0.014-0.012=0.002/0.034=0.0588).[21] Industry effects continue to be marginally significant in the DCSS model (Model 2c).

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[20] Note: This is similar to the OLS estimate for time obtained in preliminary tests summarized in Table 6.3.
[21] Note: This is similar to the R^2 estimates for the role of time also summarized in Table 6.3.

Table 6.6: Results for Unconditional Linear Means Models with Fixed Effects

Unconditional Linear Growth Models	Para-Meter	Model 2a: ACSS		Model 2b: BCSS		Model 2c: DCSS	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**SE**
Average initial status (intercept)	γ_{000}	5.609***	(0.414)	0.367***	(0.029)	0.180***	(0.009)
Average linear rate of change (slope)	γ_{100}	0.353***	(0.041)	0.012***	(0.002)	0.008***	(0.000)
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**
Level 1 Temporal variation (within-firm variation of CSS over time)	e_{tij}	17.512***	(4.185)	0.093***	(0.305)	0.012***	(0.109)
Level 2 Between firm variation in initial status (intercept)	r_{0ij}	48.118***	(6.937)	0.143***	(0.379)	0.020***	(0.141)
Level 3 Between industry variation in initial status (intercept)	u_{00j}	1.167*	(1.080)	0.008**	(0.087)	0.000†	(0.014)
Goodness of Fit			**pm**		**pm**		**pm**
Deviance		37484	5	4110	5	-8853	5
Reliabilities							
Reliability of Random Level 1 Coefficient	π_{0ij}	0.980		0.965		0.968	
Reliability of Random Level 2 Coefficient	β_{00j}	0.385		0.560		0.198	

n= 6,334 observations, nested within 349 firms, nested within 12 industries

*** p< .001

** p<.01

* p<.05

† p<0.10

At this point, the deviance statistics from the reference model and the deviance statistics from the linear fixed models are compared using a chi-square test of significance to assess whether or not the unconditional linear change models with fixed effects are a better fit to the data than the unconditional means models. In all cases, the unconditional linear change models with fixed effects present a significant improvement in model fit over the unconditional means models. For example, the change in deviance statistics between the unconditional means model of ACSS (Model 1a) and the unconditional linear change model with fixed effects (Model 2a) using a χ^2 statistic (38655 at 4 parameters vs. 37484 at 5 parameters; 1 df) is clearly significant at the $p < 0.000$ level. Both of the unconditional linear means models with fixed year effects for BCSS and DCSS also have significantly better model fits than their corresponding unconditional means models (BCSS: deviance reduction from 4399 – 4110, 1 df; DCSS: deviance reduction from -8049 to -8853, 1 df – $p<0.000$).

Although the unconditional linear change models with fixed effects are informative, in reality, as could be seen in the exploratory descriptive statistics presented in section 6.2, it is unlikely that the linear growth slopes for ACSS, BCSS and DCSS are actually fixed (or parallel) over time. As such, in order to test if the variance in slopes between firms is significant, I next fit an unconditional linear growth model with random effects. The equations are similar to those presented in 4-6, however, the YEAR effect is now allowed to vary randomly at Level 2 and Level 3 by adding a residual, r_{1ij}, to equation 5b so that the linear trend for the slope coefficient can vary randomly between firms within industries. Similarly, I add a residual, u_{10j}, to equation 6b to allow the slope coefficient to also vary between industries, so that:

$$\text{Level 1: } Y_{tij} = \pi_{0ij} + \pi_{1ij}(YEAR_{tij}) + e_{tij} \tag{7}$$

$$\text{Level 2: } \pi_{0ij} = \beta_{00j} + r_{0ij} \tag{8a}$$

$$\pi_{1ij} = \beta_{10j} + r_{1ij} \tag{8b}$$

$$\text{Level 3: } \beta_{00j} = \gamma_{000} + u_{00j} \tag{9a}$$

$$\beta_{10j} = \gamma_{100} + u_{10j} \tag{9b}$$

The results of the unconditional linear change models with random intercepts and random slopes are presented in Table 6.7. Similar to the unconditional linear growth model with fixed effects, the average initial status across all firms in ACSS at time zero (1991) was 5.7%. In other words, out of all of the possible strengths a firm could have earned for ACSS, the average firm in 1991 was only engaging in approximately 5.7% of these activities. Over the study period, the average rate of change or growth in ACSS was 0.33%, which was also significant ($p<0.000$). The results in both Table 6.8 and Table 6.9 thus confirm a significant linear growth trend for ACSS, supporting Hypothesis 1a which predicted that the ACSS pursued by firms, on average, will increase linearly over time.

Furthermore, Model 3a also confirms that there is a significant variation ($p<0.000$) in the average initial status of ACSS between firms, r_{0ij}, and a significant variation ($p<0.000$) in the linear change rates of ACSS between firms, r_{1ij}, thus also supporting Hypotheses 1b and 1c which predicted that firms would differ significantly in their initial levels and rates of adoption of ACSS over time. Interestingly, although not part of the models, the correlation between a firm's initial level of ACSS and their rate of adoption of ACSS over time is negative (-0.183) suggesting that firms with a higher average initial status of ACSS grow at a slower rate of change than firms with a lower initial status of ACSS.

Table 6.7: Results of Unconditional Linear Growth Models with Random Effects

Unconditional Linear Growth Models	Para-Meter	Model 3a: ACSS		Model 3b: BCSS		Model 3c: DCSS	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
Average initial status (intercept)	γ_{000}	5.725***	(0.400)	0.373***	(0.027)	0.181***	(0.010)
Average linear rate of change (slope)	γ_{100}	0.333***	(0.036)	0.011***	(0.002)	0.007***	(0.001)
Random Effects		**Variance**	**(SD)**	**Variance**	**(SD)**	**Variance**	**(SD)**
Level 1							
Temporal variation (within-firm variation of CSS over time)	e_{tij}	9.306***	(3.051)	0.063***	(0.251)	0.009***	(0.093)
Level 2							
Between firm variation in initial status (intercept)	r_{0ij}	38.025***	(6.166)	0.213***	(0.462)	0.021***	(0.146)
Between firm linear change rate (slope)	r_{1ij}	0.264***	(0.514)	0.001***	(0.032)	0.000***	(0.010)
Level 3							
Between industry variation in initial status (intercept)	u_{00j}	0.499†	(0.707)	0.002	(0.044)	0.001**	(0.021)
Between industry linear change rate (slope)	u_{10j}	0.005	(0.068)	0.000	(0.004)	0.000	(0.000)
Goodness of Fit			**Parameters**		**Parameters**		**Parameters**
Deviance		34570	9	2538	9	-10069	9
Reliabilities							
Reliability of Random Level 1 Coefficients	π_{0ij}	0.950		0.941		0.919	
	π_{1ij}	0.934		0.888		0.860	
Reliability of Random Level 2 Coefficient	β_{00j}	0.254		0.192		0.329	
	β_{10j}	0.302		0.305		0.046	

n= 6,334 observations, within 349 firms, within 12 industries

*** p< .001; ** p<.01; * p<.05; † p<0.10

As in previous models, the industry components continue to be very small and in these models, largely insignificant with very low reliabilities; specifically, the between industry variance in initial status, u_{00j}, for ACSS is only marginally significant ($p<0.100$) and the reliability of estimating the random coefficient at this level, β_{00j}, is only 0.254. Similarly, the between industry variance in the linear rate of change, u_{10j}, was not significant and the reliability of the β_{10j} estimate was also very low (0.302). As such, despite the descriptive exploratory graphs that appeared to suggest that industries do differ in their initial status and their rates of change in ACSS over time, these variances are not, on the whole, statistically significant.

This suggests that the observed patterns in firm ACSS growth trajectories are not all clustered around an industry mean in a manner that demonstrates that significant patterns in the growth trajectories are due to industry effects. Rather, we can find high initial status and high growth parameters in all industries just as we can find low initial status and low growth across all industries (it is not that these effects are industry specific). This is not to say that industry characteristics may not moderate the relationship between firm characteristics and CSS, but rather that there is little systematic variation attributable to nesting firms within industry effects specifically and that it will be difficult to model this variation with between-industry measures (Raudenbush & Bryk, 2002).[22]

Table 6.7 also shows the results for the unconditional linear growth models with random effects for the breadth (Model 3b) and depth (Model 3c) of corporate social strategy over time. Again, we can see that the average linear change in growth of BCSS

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[22] For example, the variance estimate for the between industry linear change rate is 0.005 with a standard deviation of 0.068 (non-significant). This indicates that firms within industries that have growth rates that are one standard deviation above average are expected to increase their ACSS at the rate of 0.333+0.068 or 0.401. Clearly, there is not sufficient variability in the between industry slopes to reliably estimate their effects on firm-level adoption of ACSS.

was positive and significant (γ_{100} = 0.011, p<0.000), as was the average linear change in growth of DCSS (γ_{100} = 0.007, p<0.000), thus supporting Hypotheses 1b and 1c as well. Similarly, Models 3b & 3c also show that there is significant variation in both the intercepts and slopes between firms for both BCSS and DCSS, thus supporting Hypotheses 2b and 2c as well as Hypotheses 3b and 3c. The same negative correlation between intercepts and slopes was also observed, as was the insignificance and low reliabilities of the industry effects. A summary of all of the Hypotheses tests results are also presented in Table 6.20 at the end of this chapter.

Once again, the model fit statistics of the unconditional linear change models with random effects are compared to the unconditional linear change models with fixed effects to ensure that model fit is improving. Across all outcome measures, ACSS, BCSS and DCSS, the deviance chi-square tests are significant (p<0.000), suggesting that the models with random slopes are indeed more representative of the data than the model with fixed slopes across time. Hypotheses 1-3 are thus fully supported.

6.3.2 Step 2: Determine the Function of Time

The next step in the model comparison approach is to determine if the significant linear trend found in Steps 1 is indeed the correct estimate for the function of time on CSS, as compared to a quadratic, cubic or other higher order polynomial curve. At this stage, given that a) the overall variance attributable to industry effects was found to be very small, b) the reliabilities of the random estimates for industry effects are also very small and c) that the variance components attributable to industry effects in the unconditional linear growth models with random effects were either marginally significant or not significant, the three level model is reduced to two levels, with years nested in firms, but not firms nested in industries (the subscript *j* has been removed from the models). Because the linear trend was found to vary significantly between firms, the models retain parameters that allow the slopes to vary. The models to be estimated then become:

$$\text{Level 1: } Y_{ti} = \pi_{0i} + \pi_{1i}(YEAR_{ti}) + \pi_{2i}(YEAR_{ti})^2 + \pi_{3i}(YEAR_{ti})^3 + e_{ti} \qquad (10)$$

$$\text{Level 2: } \pi_{0i} = \beta_{00} + r_{0i} \qquad (11a)$$

$$\pi_{1i} = \beta_{10} + r_{1i} \qquad (11b)$$

$$\pi_{2i} = \beta_{20} + r_{2i} \qquad (11c)$$

$$\pi_{3i} = \beta_{30} + r_{3i} \qquad (11b)$$

These equations were tested hierarchically, adding the quadratic and the cubic trends in a step-wise fashion and assessing improvements in model fit as well as trade-offs regarding model parsimony vs. complexity.[23] Here, π_{0i} is once again the initial level of CSS of firm *i* at time *t*, however, π_{1i} now captures the instantaneous growth rate for firm *i* at time *t*, while π_{2i} captures the curvature or acceleration/deceleration in each growth trajectory. In the cubic model, π_{3i} captures the change in the rate of change and helps distinguish if, in the case that a quadratic model is significant, the acceleration/deceleration in the growth trajectories persists or if there may in fact be a another inflection point where the trend reverses (Singer & Willett, 2003).

Table 6.8 presents the results of the step-wise tests of higher order polynomial growth curves for ACSS. Note that Model 4a is slightly different from the final linear growth model with random effects from Step1 given the change to a two level model (the

[23] Note that the statistical program used to create the .mdm files was now HLM2 (vs. HLM3 for the 3-level models); FML is retained given hypothesis testing around the model fixed-effects components.

1.7% variance attributable to industry effects is now partitioned within and between firms). In addition, while Model 4a and 4b include the random effects of linear and quadratic terms, a model with random cubic effect, $r_{3i,}$ failed to run. Hence, a fixed cubic effect model is presented.

Table 6.8: Comparison of Fitting Alternative Polynomial Change Trajectories to ACSS over Time

Higher Order Change Trajectories: ACSS	Para-meter	Model 4a: Linear Growth		Model 4b: Quadratic Growth		Model 4c: Cubic Growth (Fixed)	
Fixed Effects		**Coefficient**	**(SE)**	**Coefficient**	**(SE)**	**Coefficient**	**(SE)**
Average initial status (intercept)	β_{00}	5.719***	(0.341)	5.590***	(0.318)	4.941***	(0.325)
Average rate of change (linear)	β_{10}	0.340***	(0.029)	0.383***	(0.059)	0.854***	(0.109)
Average rate of change (quadratic)	β_{20}			-0.003	(0.003)	-0.069***	(0.013)
Average rate of change (cubic)	β_{30}					0.003***	(0.000)
Random Effects		**Variance**	**(SD)**	**Variance**	**(SD)**	**Variance**	**(SD)**
Level 1							
Temporal variation (within firm over time)	e_{ti}	9.305***	(3.050)	7.036***	(2.653)	6.927***	(2.632)
Level 2							
Between firm variation in initial status (intercept)	r_{0i}	38.482***	(6.203)	32.053***	(5.662)	32.186***	(5.673)
Between firm linear change rate (linear slope)	r_{1i}	0.269***	(0.519)	0.985***	(0.992)	0.996***	(0.998)
Between firm (quadratic rate of change)	r_{2i}			0.003***	(0.055)	0.003***	(0.055)
Between firm (cubic rate of change)	r_{3i}					-	-
Goodness of Fit			**Parameters**		**Parameters**		**Parameters**
Deviance		34573	6	33551	10	33467	11
Reliabilities							
Reliability of intercept coefficient	π_{0i}	0.951		0.912		0.914	
Reliability of slope coefficient	π_{1i}	0.935		0.824		0.827	
Reliability of quadratic slope coefficient	π_{2i}			0.827		0.829	

n= 6,334 observations, within 349 firms

*** p< .001; ** p<.01; * p<.05; † p<0.10

As can be seen in Table 6.8, the linear rate of change in ACSS over time remains significant in all models. Model 4a is simply the baseline model established in Step 1 (the unconditional linear growth model with random slopes yet without the industry level nesting). Model 4b introduces both fixed and random quadratic growth parameters. The fixed effect is not significant (β_{20}= -0.003, p >0.05), suggesting that the average value of the quadratic growth rates between firms is indistinguishable from zero. However, the variance components associated with the quadratic growth curve model were significant (r_{2i}=0.003, p<.000) suggesting that there are statistically significant variations in the quadratic rates of change across firms in the sample (Singer & Willett, 2003). Furthermore, the difference in deviance statistics from Model 4a to Model 4b suggest a significant improvement in fit (1,022 at 4 df, p<0.000). As such, further models may retain the quadratic fixed effect as it may be possible to predict some of this variation with the addition of explanatory covariates (Singer & Willett, 2003).

Model 4c estimates a cubic growth model which adds one more fixed effect (as noted above, the model with random effects failed to run). In this model, all the fixed effects are significant. Coupled with a significant reduction in the goodness of fit test (84 at 1 df), this suggests that firm change in ACSS over time should be treated as though it follows a cubic trajectory – first increasing linearly (β_{10}=0.825, p<0.000), then continuing to increase, albeit at a decelerated rate (β_{20}= -0.069, p<0.000) and finally the change in the rate of change accelerating again (β_{30} =0.002, p<0.000). This mirrors the preliminary descriptive plot found in Figures 6 and implies that there was indeed a greater rate of adoption of social and environmental initiatives earlier on in the panel, tempering off in the middle and then accelerating again in the last few years.

Tables 6.9 and 6.10 demonstrate similar results for BCSS and DCSS. The models with cubic growth functions with random effects here did not run as well. As such, the cubic fixed models are presented. In both cases, the cubic growth models with fixed effects for the cubic function had the best model fits, although the absolute value of the parameter estimates for the quadratic and cubic functions were very small.

Table 6.9: Comparison of Fitting Alternative Polynomial Change Trajectories to BCSS

Higher Order Change Trajectories: BCSS	Para-meter	Model 5a: Linear Growth		Model 5b: Quadratic Growth		Model 5c: Cubic Growth (Fixed)	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
Average initial status (intercept)	β_{00}	0.376***	(0.256)	0.370***	(0.025)	0.312***	(0.026)
Average rate of change (linear)	β_{10}	0.012***	(0.002)	0.014**	(0.005)	0.056***	(0.009)
Average rate of change (quadratic)	β_{20}			-0.000	(0.000)	-0.006***	(0.001)
Average rate of change (cubic)	β_{30}					0.000***	(0.000)
Random Effects		**Variance**	**(SD)**	**Variance**	**(SD)**	**Variance**	**(SD)**
Level 1							
Temporal variation (within firm over time)	e_{ti}	0.063***	(0.251)	0.049***	(0.221)	0.043***	(0.219)
Level 2							
Between firm variation in initial status (intercept)	r_{0i}	0.215***	(0.464)	0.197***	(0.444)	0.197***	(0.444)
Between firm linear change rate (linear slope)	r_{1i}	0.001***	(0.032)	0.006***	(0.078)	0.006***	(0.079)
Between firm (quadratic rate of change)	r_{2i}			0.000***	(0.004)	0.000***	(0.004)
Between firm (cubic rate of change)	r_{3i}					-	-
Goodness of Fit			**pm**		**Pm**		**pm**
Deviance		2548	6	1681	10	1586	11
Reliabilities							
Reliability of intercept coefficient	π_{0i}	0.941		0.902		0.904	
Reliability of slope coefficient	π_{1i}	0.890		0.807		0.812	
Reliability of quadratic slope coefficient	π_{2i}			0.815		0.817	

n= 6,334 observations, within 349 firms
*** p< .001; ** p<.01; * p<.05; † p<0.10

Table 6.10: Comparison of Fitting Alternative Polynomial Change Trajectories to DCSS

Higher Order Change Trajectories: DCSS	Parameter	Model 6a: Linear Growth		Model 6b: Quadratic Growth		Model 6c: Cubic Growth (Fixed)	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
Average initial status (intercept)	β_{00}	0.181***	(0.008)	0.174***	(0.008)	0.162***	(0.008)
Average rate of change (linear)	β_{10}	0.007***	(0.001)	0.009**	(0.002)	0.018***	(0.003)
Average rate of change (quadratic)	β_{20}			-0.000	(0.000)	-0.001**	(0.000)
Average rate of change (cubic)	β_{30}					0.000**	(0.000)
Random Effects		**Variance**	**(SD)**	**Variance**	**(SD)**	**Variance**	**(SD)**
Level 1							
Temporal variation (within firm over time)	e_{ti}	0.009***	(0.093)	0.007***	(0.084)	0.007***	(0.084)
Level 2							
Between firm variation in initial status (intercept)	r_{0i}	0.022***	(0.147)	0.019***	(0.140)	0.022***	(0.140)
Between firm linear change rate (linear slope)	r_{1i}	0.000***	(0.010)	0.001***	(0.026)	0.001***	(0.027)
Between firm (quadratic rate of change)	r_{2i}			0.000***	(0.001)	0.000***	(0.001)
Between firm (cubic rate of change)	r_{3i}						
Goodness of Fit			**pm**		**Pm**		**pm**
Deviance		-10068	6	-10730	10	-10758	11
Reliabilities							
Reliability of intercept coefficient	π_{0i}	0.920		0.863		0.864	
Reliability of slope coefficient	π_{1i}	0.861		0.768		0.770	
Reliability of quadratic slope coefficient	π_{2i}			0.769		0.771	

n= 6,334 observations, within 349 firms
*** p< .001; ** p<.01; * p<.05; † p<0.10

6.3.3 Step 3: Estimating the Error Structure

Up until this point, the equations estimated have assumed that the Level 1 residuals (e_{ti}) are independent, have a mean of zero and a constant variance for all occasions (Heck, Thomas & Tabata, 2010). However, in longitudinal datasets this type of simple error structure is unlikely given repeated measures within each firm that are likely highly correlated to each other (Hox, 2010; Singer & Willett, 2003). Although "incorrectly adopting the default error structure does not appear to bias fixed effects estimates in many cases" (Peugh & Enders, 2005: p. 736), it may impact the significance of random effects, especially in longitudinal research. As such, it is strongly recommended to test different Level 1 covariate structures which may theoretically better fit the data (Bliese & Ployhart, 2002; Singer & Willett, 2003).

Singer and Willett (2003) recommend testing a total of six different error covariance structures: unstructured, compound symmetric, heterogeneous compound symmetric, first order autoregressive (AR1), heterogeneous autoregressive and Toeplitz. These models are then compared to those established in Step 2, with smaller deviance statistics indicating a better fit and thus included in the final model to be retained prior to adding explanatory covariates in Steps 4 and 5.

However, each error structure imposes a distinct set of assumptions on the residual covariance matrices which may or may not be of theoretical interest. In this case, the first order autoregressive error structure (AR1) is theoretically the most likely error structure to occur in longitudinal studies (e.g., Hausknecht et al., 2008). The AR1 error structure allows residuals within firms to be correlated from occasion to occasion (ρ), but with diminishing correlations over time (ρ at time 1, ρ^2 at time 2, ρ^3 at time 3 etc.).

Theoretically and statistically, this type of error structure for the Level 1 residuals is most likely representative of the data used in this study, as the Level 1 variance is assumed to be independent across firms, σ^2, but correlated within firms (Heck et al., 2010). Using just the first five occasions for ease of presentation, a first order autocorrelation matrix is estimated as follows:

$$\sigma^2 \begin{bmatrix} 1 & \rho & \rho^2 & \rho^3 & \rho^4 \\ \rho & 1 & \rho & \rho^2 & \rho^3 \\ \rho^2 & \rho & 1 & \rho & \rho^2 \\ \rho^3 & \rho^2 & \rho & 1 & \rho \\ \rho^4 & \rho^3 & \rho^2 & \rho & 1 \end{bmatrix}$$

In order to test if an AR1 error structure improved the fit of the final cubic growth models established in Step 2, the models were rerun using a hierarchical multivariate level model (HMLM) vs. the HLM2 procedure used in Step 3, as HMLM allows for the hypothesis tests for different level 1 variances (HLM2 does not).[24] The primary disadvantage with HMLM (vs. HLM2), however, is that this method does not provide covariance estimates required for hypotheses testing in Steps 4 and 5. As such, the error structure is assessed at this time for exploratory purposes only and the implications revisited after the effects of the covariates have been tested in HLM2.

The cubic growth models with AR1 error structures for ACSS (7a), BCSS (7b) and DCSS (7c) are presented in Table 6.11. As can be seen from this table, the magnitudes of the fixed effects are relatively similar to the unconditional cubic growth

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[24] HLM2 imposes a homogeneous error structure on all models, and allows for comparison tests using a heterogeneous sigma squared model for the level-1 variances only. In this case, the heterogeneous error structures for ACSS, BCSS and DCSS were not statistically superior to the more parsimonious homogeneous variances used in the reference models ($p>0.05$). The remaining error structures suggested by Singer & Willett (2003) were instead tested by repeating steps 1 & 2 (Models 1-6c) in SPSS 18 Linear Mixed program which allows for the specification of different error structures. Of the six error structures, only the linear change models with the AR1 error structures for ACSS, BCSS and DCSS converged and in all cases, the model fits using an AR1 error structure were significantly better than the linear change models with homogenous error structures.

models with random effects for the linear and quadratic parameters and fixed effects for the cubic parameter established in Step 2, however, the standard errors are generally smaller in the ARI models. Importantly, there is a significant improvement in the overall model fit (for ACSS, the deviance reduction is from 33467 in the homogenous sigma squared model to 31612 in the AR1 model at 1df, $p<0.000$), suggesting that the AR1 structure is, in fact, the better model for this longitudinal data set.

As noted above, HMLM does not provide variance components comparable to those assessed in Models 6a-c. However, it does partition the within firm variance component into a constant variance component, σ^2, and the correlation between any two adjacent occasions, ρ which is informative. The ρ estimate which ranges from 0.62 for the DCSS model (7c) and 0.73 in the ACSS model (7a) indicates a very high degree of covariance between measurement occasions (the second lag correlation for ACSS would be 0.73^2 or 0.53, the third lag correlation would be 0.73^3 or 0.39 etc.) suggesting that the methods that do not account for this violation of the i.i.d. assumption are in danger of making Type I errors (failure to account for autocorrelation can lead to underestimated standard errors and thus inflated t-values)(Bliese & Ployhart, 2002).

Given the magnitude of the covariation in measurement occasions, the AR1 error structure is preferred over the baseline models to test for overall model fit. However, no substantive differences in the intercept and growth parameters were detected (e.g. growth parameters that were no longer significant in the AR1 models). As such, I can proceed to modeling the predictor variables using the homogenous error structure assumed by HLM2 (Short et al., 2006) so that differences in variance components can be directly compared and pseudo R^2 statistics computed. Similar to Misangyi et al. (2006), the issue of AR1 error structures will be revisited as the last step in the model building process.

Table 6.11: Unconditional Cubic Growth Models with AR1 Level 1 Error Structure

Final Unconditional Cubic Growth Models	Para-meter	Model 7a: ACSS		Model 7b: BCSS		Model 7c: DCSS	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
Average initial status (intercept)	β_{00}	5.033***	(0.308)	0.318***	(0.025)	0.164***	(0.008)
Average rate of change (linear)	β_{10}	0.764***	(0.095)	0.050***	(0.007)	0.017***	(0.003)
Average rate of change (quadratic)	β_{20}	-0.054***	(0.012)	-0.005***	(0.001)	-0.001**	(0.000)
Average rate of change (cubic)	β_{30}	0.002***	(0.000)	0.000***	(0.000)	0.000**	(0.000)
Random Effects		**VC**	**(SE)**	**VC**	**(SE)**	**VC**	**(SE)**
Level 1 Temporal variation (within firm over time), e_{ti} : AR1 diagonal	σ^2	14.547	(1.200)	0.088	(0.006)	0.011	(0.019)
AR1 rho	ρ	0.729	(0.021)	0.672	(0.020)	0.616	(0.019)
Goodness of Fit			**Parameters**		**Parameters**		**Parameters**
Deviance		31612	12	12	12	-12150	12

n= 6,334 observations, within 349 firms

*** p< .001; ** p<.01; * p<.05; † p<0.10

6.3.4 Step 4 and Step 5: Adding Time-Variant Variables to the Level 1 Models and Adding Time-Invariant Variables to the Level 2 Models

Broadly speaking, the steps taken thus far essentially determine the relationship between CSS and time, concluding that (a) there is a small but significant linear increase in CSS (all forms) over time, (b) firms differ in terms of their initial level of CSS and (c) that the linear growth patterns vary significantly between firms but (d) not substantially between industries. Furthermore, we know that (e) while the quadratic growth function is non-significant, (f) there may be a possible cubic function to the role of time on CSS adoption, but that (g) the absolute value of these parameters are very small. Lastly, we know that (h) when an auto-correlated error structure is included in the Level 1 cubic growth models, overall model fit improves significantly.

These findings are clearly an advance over traditional cross-sectional designs, yet the significant variance component parameters suggest that a non-trivial amount of variance is still to be explained in all models (Bliese & Ployhart, 2002). Steps 4 and 5 in the RCM procedure therefore allow for hypothesis testing regarding why firms vary in terms of their intercept values (initial levels of CSS) as well as why firms have different slopes (rates of adoption of CSS over time) by adding predictor variables to the baseline equations established in Steps 1-3.

To begin, I first add all of the firm level control variables to the models in HLM2. Although the control variables have been measured at each time point across all 19 years of the study and are thus technically time-variant (e.g. the measure of firm size is recorded in every year for every firm), theoretically, it could be argued that the firm size, past performance, risk and R&D intensity are more likely to explain differences between firms, than differences within firms over time and could therefore also be modeled as time-invariant predictors at Level 2. In order to determine at which level of the equations to enter the control variables, Misangy et al. (2006) and Holcomb et al., (2010) suggest running an ICC analysis on each independent variable in order to determine if the amount of variance in each measure can be attributed primarily to within firm effects (across time, or transient effects) and thus should be modeled as time-variant at Level 1, or whether the variance in each measure resides primarily between firms (or a cross-sectional/stable effect), and thus modeled through aggregating observations over time and entering these as time-invariant predictors at Level 2. Simultaneously, HLM2 also provides the reliability of estimating the random Level 1 coefficient, π_{0i}, (also referred to as ICC(2)) which is, in effect, an estimate of the reliability of the aggregate measure (Misangyi et al., 2006). The results of these analyses are presented in Table 6.12 below.

Table 6.12: Results of ICC Analysis of Control Variables

Control Variable	Variance across time (within-firms)	Variance between firms	Total Variance	% of variance within firms	% variance between firms	Reliability ICC(2)
Size	0.071***	0.458***	0.529	13.1%	86.9%	0.991
Past Performance	0.004***	0.002***	0.006	68.6%	31.4%	0.892
Risk	0.007***	0.011***	0.019	38.6%	61.4%	0.966
R&D Intensity	0.001***	0.015***	0.016	6.1%	93.9%	0.996

N=6334

As illustrated in Table 6.12, for three out of the four control variables (Size, Risk and R&D Intensity), the majority of the variance resides between firms, rather than within firms over time (from 61%-94%). In contrast, the bulk of the variance in past financial performance resides within the firm over time (69%). This suggests that past performance should be entered as a time-variant variable at Level 1 and the remaining control variables can be entered into the equations as time-invariant variables at Level 2 (they have a stable effect on ACSS over time). The high reliabilities of π_{0i} also suggest that aggregation of these control variables is justifiable (Misangyi et al., 2006). As such, firm size, risk and R&D intensity are aggregated for each firm over the time span of the study and their firm level averages modeled at Level 2. The control models then become:

Level 1: $Y_{ti} = \pi_{0i} + \pi_{1i}(YEAR_{ti}) + \pi_{2i}(YEAR_{ti})^2 + \pi_{3i}(YEAR_{ti})^3 +$

$$\pi_{4i}\ (PAST\ PERFORMANCE_{ti}) + e_{ti} \tag{12}$$

Level 2: $$\pi_{0i} = \beta_{0i} + \beta_{01}(SIZE_{ti}) + \beta_{02}(RISK_{ti}) + \beta_{03}(RDINT_{ti}) + r_{0i} \tag{13a}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}(SIZE_{ti}) + \beta_{12}(RISK_{ti}) + \beta_{13}(RDINT_{ti}) + r_{1i} \tag{13b}$$

$$\pi_{2i} = \beta_{20} + r_{2i} \tag{13c}$$

$$\pi_{3i} = \beta_{30} \tag{13d}$$

$$\pi_{4i} = \beta_{40} \tag{13e}$$

Note that the effects of cubic growth, π_{3i}, and past performance, π_{4i}, on CSS are set as fixed as no random errors are included in equations (13d and e). In this manner, all of the control variables (except past performance) are modeled as predictors of the initial levels and linear growth rates of CSS between firms and these effects are allowed to vary between firms. Only past performance is modeled as a predictor of CSS within firms.

Prior to this analysis, all of the control variables were centered around their grand mean before being entered in equations 12-13e. The centering of variables in multi-level models is a critical step in that it effects the meaning and interpretation of coefficients (Raudenbush & Bryk, 2002). By grand-mean centering all of the control variables, the intercept in equation 12, π_{0i}, can be interpreted as the expected outcome for an "average" firm at the mean of all control variables (Raudenbush & Bryk, 2002). In other words, the intercept, π_{0i}, represents the mean CSS across time for firm *i*, adjusted for the effect of past-performance which is simultaneously modeled as the outcome in equation 13a adjusted for the stable effects of size, risk, and R&D intensity expected to explain between-firm variance (Misangyi et al., 2006).

Having theoretically and statistically determined at which level to enter the control variables, a similar procedure was followed in order to determine the appropriate level at which to enter the predictor variables around executive orientation. Given that the unit of analysis is the firm (as discussed in Chapter 4), it is critical to the models whether the effect of executive orientation on the initial status and rate of change in CSS over time is predicted to occur primarily within the firm over time, or between firms over time (Ployhart et al., 2002). Entering the executive orientation variables as time-variant at Level 1 would examine the within-firm change process as a reflection of CEO characteristics, while entering the predictor variables as time invariant at Level 2 answers questions regarding inter-firm differences in CSS change patterns that are attributable to executive orientation. Given that the latter best reflects the hypotheses set forth in this thesis, the executive orientation variables are first modeled at Level 2, as predictors of between-firm differences in initial levels and rates of adoption of CSS over time. Alternate model specifications are considered in the discussion section as post-hoc analyses.

To confirm if aggregation of the executive orientation variables is statistically reliable, similar to the analysis of variance decomposition of the control variables, ICC(1) and ICC(2) analyses were also performed on the CEO characteristics variables. As shown in Table 6.13 below, although the within-firm and the between-firm variances are relatively equal, the reliability of aggregating the executive orientation variables are very high. As such, there is statistical support for the theoretical rationale of modeling executive orientation as a between firm predictor of level and rates of adoption of CSS.

Table 6.13: Results of ICC Analysis of Predictor Variables

Predictor Variable	Variance across time (within-firms)	Variance between firms	Total Variance	% of variance within firms	% variance between firms	Reliability
Political Liberalism	1.128	1.768***	3.048	42.0%	58.0%	0.966
Output Function	0.097	0.133***	0.230	42.2%	57.8%	0.961
Functional Breadth	0.404	0.400***	0.804	50.3%	49.7%	0.947
International Exp.	0.092	0.097***	0.188	48.9%	51.1%	0.950
MBA	0.114	0.125***	0.239	47.7%	52.3%	0.948
JD/LLB	0.049	0.046***	0.095	51.6%	48.4%	0.941
Age	28.203	18.579***	46.793	60.3%	39.7%	0.922
Gender	0.009	0.009***	0.018	50.0%	50.0%	0.945
Tenure as CEO	35.613	27.854***	63.467	56.1%	43.9%	0.934
Tenure at firm	87.745	75.905***	163.650	53.6%	46.4%	0.940

N=6334

The full models for the hypothesis testing then become:

Level 1: $Y_{ti} = \pi_{0i} + \pi_{1i}(\text{YEAR}_{ti}) + \pi_{2i}(\text{YEAR}_{ti})^2 + \pi_{3i}(\text{YEAR}_{ti})^3 +$

$$\pi_{4i}\ (\text{PAST PERFORMANCE}_{ti}) + e_{ti} \qquad (14)$$

Level 2: $\pi_{0i} = \beta_{0i} + \beta_{01}(\text{SIZE}_{ti}) + \beta_{02}(\text{RISK}_{ti}) + \beta_{03}(\text{RDINT}_{ti}) + \beta_{04}(\text{POLITICAL LIBERALISM}_{ti}) + \beta_{05}(\text{OUTPUTFUNCTION}_{ti}) + \beta_{06}(\text{FUNCTIONALBREADTH}_{ti}) +$

$\beta_{07}(INTERNATIONALEXP_{ti}) + \beta_{08}(MBA_{ti}) + \beta_{09}(JDLLB_{ti}) + \beta_{010}(AGE_{ti}) +$

$\beta_{011}(GENDER_{ti}) + \beta_{012}(TENUREINROLE_{ti}) + \beta_{013}(TENUREATFIRM_{ti}) + r_{0i}$ (15a)

$\pi_{1i} = \beta_{10} + \beta_{11}(SIZE_{ti}) + \beta_{12}(RISK_{ti}) + \beta_{13}(RDINT_{ti}) + \beta_{14}(POLITICAL$

$LIBERALISM_{ti}) + \beta_{15}(OUTPUTFUNCTION_{ti}) + \beta_{16}(FUNCTIONALBREADTH_{ti}) +$

$\beta_{17}(INTERNATIONALEXP_{ti}) + \beta_{18}(MBA_{ti}) + \beta_{19}(JDLLB_{ti}) + \beta_{110}(AGE_{ti}) +$

$\beta_{111}(GENDER_{ti}) + \beta_{112}(TENUREINROLE_{ti}) + \beta_{113}(TENUREATFIRM_{ti}) + r_{1i}$ (15b)

$\pi_{2i} = \beta_{20} + r_{2i}$ (15c)

$\pi_{3i} = \beta_{30}$ (15d)

$\pi_{4i} = \beta_{40}$ (15e)

Again, the effects of quadratic growth are allowed to vary randomly, however, the cubic growth parameter, π_{3i}, and the past performance estimate, π_{4i}, on CSS are set as fixed and no random errors are included in equations (15d and e). Similarly, all of the predictor variables were centered around their grand mean before being entered in equations.[25] The intercept in equation 14, π_{0i}, can now be interpreted as the expected CSS outcome for an "average" firm at the mean of all control and predictor variables (Raudenbush & Bryk, 2002). In other words, the intercept, π_{0i}, represents the mean CSS across time for firm *i*, adjusted for the effect of past-performance over time which is simultaneously modeled as the outcome in equation 15a adjusted for the stable effects of firm and executive orientation expected to explain between-firm variance (Misangyi et al., 2006). The linear slope is also simultaneously modeled as the outcome in equation 15b as predicted by firm and executive characteristics.

[25] Although dichotomous variables are usually not centered, because the executive orientation variables were aggregated at the level of the firm, these variables were no longer dichotomous, but rather represented the 'average' for a particular CEO attribute over the 19 year period for a particular firm. As such, grand mean centering is the appropriate method to facilitate interpretation of the results.

Because the hypotheses testing proceeds in a step wise fashion, including the predictors to the base line equations and testing for changes in variance components using pseudo R^2 statistics and changes in overall model fit using chi-square tests of the deviance statistics, rather than continue to report ACSS, BCSS and DCSS together, the effects of the predictors are modeled against the base line in a separate table for each dependent variable. Table 6.14, therefore, reports the results for the ACSS models, while Table 6.15 and 6.16 present the results for BCSS and DCSS models respectively.

Note that because HLM2 does not allow for any missing data at Level 2, two sets of CEO models were estimated in all subsequent analyses. First, "full" models with all of the 6,334 observations nested in 349 firms were run to test Hypotheses 4-11. These models omit the education variables (MBA and legal degrees) which had 5.6% missing data as described in Table 6.1. Rather than lose the data on the principle covariates of interest in testing executive orientation, a second set of "reduced" models (with 6,232 observations in 343 firms) that include the education variables were run to test Hypotheses 12-15.[26] The full and reduced models are labeled CEO Model 1 and CEO Model 2 on the following pages and the effect on sample size noted at the bottom of the Tables.

[26] Note that the variance components and the deviance statistics for the CEO Model 2 are compared to a reduced baseline cubic growth and control model not reported here for space considerations.

Table 6.14: Growth Model Parameter Estimates of Predictors of ACSS

Firm Level Models of ACSS	Parameter	Model 8a: Baseline Cubic Growth Model		Model 8b: Control Model		Model 8c: CEO Model 1		Model 8d: CEO Model 2	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):									
Average initial status (intercept)	β_{00}	4.941***	(0.325)	4.953***	(0.317)	4.957***	(0.312)	4.922***	(0.315)
Size	β_{01}			2.062***	(0.530)	2.213***	(0.571)	2.395***	(0.580)
Risk	β_{02}			-1.103	(2.780)	-2.040	(2.867)	-1.826	(2.891)
R&D Intensity	β_{03}			2.176	(2.569)	0.450	(2.749)	0.584	(2.774)
Political liberalism	β_{04}					0.451*	(0.212)	0.441*	(0.219)
Output function	β_{05}					1.747*	(0.886)	1.784*	(0.902)
Functional breadth	β_{06}					0.109	(0.519)	0.043	(0.526)
International experience	β_{07}					0.850	(1.026)	1.053	(1.036)
MBA	β_{08}							-0.445	(0.598)
JD/LLB	β_{09}							0.842	(1.528)
Tenure as CEO	β_{010}					-0.017	(0.068)	-0.011	(0.068)
Tenure at the firm	β_{011}					0.073*	(0.035)	0.072*	(0.037)
Age	β_{012}					-0.141†	(0.078)	-0.145†	(0.083)
Gender	β_{013}					3.720	(2.859)	3.859	(2.951)
For average linear rate of change (π_{1i})									
Average rate of change (linear)	β_{10}	0.855***	(0.109)	0.849***	(0.109)	0.848***	(0.108)	0.865***	(0.110)
Size	β_{11}			0.380***	(0.038)	0.374***	(0.039)	0.374***	(0.039)
Risk	β_{12}			-0.129	(0.217)	-0.152	(0.218)	-0.119	(0.218)
R&D Intensity	β_{13}			1.458***	(0.197)	1.356***	(0.205)	1.355***	(0.205)
Political liberalism	β_{14}					-0.010	(0.017)	-0.007	(0.017)
Output function	β_{15}					0.156*	(0.070)	0.139*	(0.071)
Functional breadth	β_{16}					0.067*	(0.033)	0.072*	(0.033)
International experience	β_{17}					0.024	(0.075)	0.005	(0.075)
MBA	β_{18}							0.107†	(0.058)
JD/LLB	β_{19}							-0.151	(0.105)
Tenure as CEO	β_{110}					-0.008†	(0.005)	-0.008†	(0.005)
Tenure at the firm	β_{111}					0.007*	(0.003)	0.006*	(0.003)
Age	β_{112}					0.001	(0.005)	0.002	(0.005)
Gender	β_{113}					0.734***	(0.169)	0.733***	(0.169)

Table 6.14: Growth Model Parameter Estimates of Predictors of ACSS (continued)

Firm Level Models of ACSS	Parameter	Model 8a: Baseline Cubic Growth Model		Model 8b: Control Model		Model 8c: CEO Model 1		Model 8d: CEO Model 2	
Fixed Effects (cont'd)		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):									
For average quadratic rate of change (π_{2i})	β_{20}	-0.069***	(0.013)	-0.069***	(0.013)	-0.069***	(0.013)	-0.069***	(0.013)
For average cubic rate of change (π_{3i})	β_{30}	0.003***	(0.000)	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
For slope of past performance (π_{4i})	B_{40}			1.719**	(0.665)	1.672**	(0.666)	1.646**	(0.672)
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**
Level 1									
Temporal variation (within firms)	e_{ti}	6.928***	(2.630)	6.916***	(2.630)	6.915***	(2.630)	7.000***	(2.645)
Level 2									
Between firm variation in initial status	r_{0i}	32.186***	(5.673)	30.440***	(5.517)	28.988***	(5.384)	29.042 ***	(5.389)
Between firm linear change rate	r_{1i}	0.996***	(0.998)	0.897***	(0.947)	0.876***	(0.936)	0.893***	(0.945)
Between firm quadratic change rate	r_{2i}	0.003***	(0.055)	0.003***	(0.055)	0.003***	(0.055)	0.003***	(0.055)
Total Variance		40.113		38.259		36.782		36.938	
Variance Explained (R^2)				4.6%		8.3%		9.0%	
Change in variance explained (ΔR^2)						3.9%		3.8%	
Goodness of Fit			**pm**		**pm**		**pm**		**pm**
Deviance		33467	11	33183	18	33117	34	32647	38
Reliabilities									
Reliability of intercept coefficient	π_{0i}	0.914		0.909		0.904		0.905	
Reliability of slope coefficient	π_{1i}	0.827		0.812		0.808		0.811	
Reliability of quadratic slope coefficient	π_{2i}	0.829		0.830		0.829		0.831	

Models 8a-8c: n= 6,334 observations within 349 firms; Model 8d: n=6,232 observations within 343 firms

*** p< .001; ** p<.01; * p<.05; † p<0.10

Table 6.14 presents the results for the hypotheses testing regarding the predictors of initial levels and growth of ACSS over time. Model 8a, the baseline cubic growth model, is identical to Model 4c which was established in Step 2 as the reference model. Model 8b adds the control variables, Model 8c adds the executive orientation variables (not including education) and Model 8d adds the education variables using the reduced sample.

The control model (Model 8b) provides a statistically better fit than the unconditional cubic growth model (χ^2= 284 at 7df, p<0.000) and explains approximately 4.6% of the variance in ACSS, largely between firms. The overall average initial status for ACSS is largely unchanged at 4.953 % (from 4.941% in the baseline model) which can be interpreted as the initial level of ACSS for firms at the average level of past performance, size, risk and R&D intensity.

With regards to the initial status of ACSS in 1991, only size and past financial performance are statistically significant predictors (both p<0.05). Specifically, the initial status for larger firms was 2.06% higher than the average firm, or 7% in 1991 (vs. 5% on average). Similarly, firms with above average past financial performance have an estimated starting ACSS level of about 6.672% (4.953%+1.719%), confirming prior studies that have shown a modest positive relationship between past CFP and CSP (e.g., Waddock & Graves, 1997). However, the effects of risk and R&D intensity on initial levels of ACSS were not significant. The latter result in particular is contrary to prior studies that have shown a positive relationship between R&D intensity and CSP specifically (e.g., McWilliams & Siegel, 2000).

More interesting, perhaps, is the relationship between the control variables and the rate of change in ACSS over time. Here, the average instantaneous growth in ACSS (which varies randomly across firms) is 0.849% and is statistically significant ($p<0.000$). Firm size appears to be a significant predictor in the rate of change in ACSS ($\beta_{11}=0.380$, $p<0.000$) such that larger firms grew in ACSS at a higher rate of change than firms at the mean level of firm size (1.2% rather than 0.85 %). As opposed to its effect on initial status, the effect of R&D intensity on the linear rate of change was significant, such that the ACSS of firms with R&D intensity above the mean grew at a rate of 2.3 % (vs. 0.85%). This is an important nuance in the debate surrounding the relationship between R&D intensity and CSP (Padgett & Galán, 2010). While the two do not appear to be related cross-sectionally at time 0 (1991), it appears as though R&D intensity is a strong predictor of the rate of adoption of ACSS over time.

Despite the addition of the control variables, the significant variance components suggest that there is still significant residual variance in the initial intercept and the slope (both, $p<0.000$) to be explained and that analysis can proceed to Model 8c and 8d for direct tests of the hypotheses. Several of the CEO level control variables showed significant relationships with the initial level of ACSS. In particular, firms with CEOs that have longer tenures at the firm, showed higher initial levels of ACSS ($\beta_{011}=0.073$, $p<0.05$), while firms with older CEOs had lower initial levels of ACSS ($\beta_{012}=0.141$, $p<0.10$). As can be seen in the first CEO model (full sample), firms that are run by CEOs with a liberal worldview do have a higher initial level of aggregate corporate social strategy ($\beta_{04}=0.451$, $p<0.05$) thus supporting Hypothesis 4a. Furthermore, firms led by CEOs with functional backgrounds predominantly in output functions (e.g. marketing, sales) also have significantly higher initial levels of ACSS ($\beta_{05}=1.747$, $p<0.05$) supporting Hypothesis 6a. Functional breadth and international experience, however, do not appear to affect initial levels of ACSS so that Hypotheses 8a and 10a are not supported in these models.

The models for the linear slope of ACSS, on the other hand, had different results. While tenure at the firm continued to be positive and significant (β_{111}=0.007, $p<0.05$), tenure in the role of CEO was negatively and marginally significantly related to the rate of adoption of ACSS at the firm level (β_{110}=-0.008, $p<0.10$). Here, gender becomes a highly statistically significant predictor of the rate of adoption such that firms with above average levels of female CEOs grew at a rate 0.734% higher than the average firm (or at a linear rate of 1.582% vs. 0.848%). Model 8c, however, fails to provide support for Hypothesis 5a, that firms run by CEOs with a liberal worldview have a higher rate of adoption of ACSS over time. Rather, firms led by CEOs from output functions (β_{15}=0.156, $p<0.05$) and with greater functional breadth (β_{16}=0.067, $p<0.05$) appear to predict steeper adoption of ACSS over time (Hypotheses 7a and 9a are supported). On the whole, however, the CEO executive orientation model demonstrates a significant improvement over both the baseline model (χ^2= 350 at 23df, $p<0.000$) and the control model (χ^2= 66 at 16df, $p<0.000$) explaining an additional 3.9% of the variance for a total of pseudo R^2 of 8.3%.

In order to test the effects of CEO educational background, all executive orientation variables were entered in CEO Model 2 with the slightly smaller sample size (Model 8d). All of the main effects established in Model 8c hold. However, the effects of an MBA education or law education were not significant predictors of a firm’s initial status of ACSS, although firms run by CEOs with MBA did marginally predict the linear rate of adoption of ACSS over time (β_{85}=0.107, $p<0.10$), albeit in the opposite direction of that hypothesized. As such, I find no support for Hypotheses 12a, 13a, 14a and 15a which predicted that CEOs with MBAs and law degrees would have lower initial levels of ACSS and slower rates of adoption of ACSS over time. Similar to Model 8c, however, the full CEO executive orientation model demonstrated a significant improvement over both the baseline model (χ^2= 351 at 27df, p<0.000) and the control model (χ^2= 70 at 20df, p<0.000) explaining an additional 3.8% of the variance over the control model[27] for a total of pseudo R^2 of 9.0% over the baseline.

The hypotheses tests for BCSS and DCSS are reported in Tables 6.15 & 6.16 below.

[27] Note: This is similar to the 4% OLS pooled estimate of CEO effects reported in Section 6.1.

Table 6.15: Growth Model Parameter Estimates of Predictors of BCSS

Firm Level Models of BCSS	Parameter	Model 9a: Baseline Cubic Growth Model		Model 9b: Control Model		Model 9c: CEO Model 1		Model 9d: CEO Model 2	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):									
Average initial status (intercept)	β_{00}	0.312***	(0.026)	0.326***	(0.026)	0.316***	(0.025)	0.317***	(0.026)
Size	β_{01}			0.149***	(0.038)	0.164***	(0.039)	0.170***	(0.040)
Risk	β_{02}			0.175	(0.222)	0.111	(0.227)	0.106	(0.228)
R&D Intensity	β_{03}			0.378†	(0.202)	0.233	(0.219)	0.225	(0.221)
Political liberalism	β_{04}					0.027	(0.017)	0.024	(0.018)
Output function	β_{05}					0.135*	(0.068)	0.134†	(0.069)
Functional breadth	β_{06}					-0.004	(0.038)	-0.006	(0.034)
International experience	β_{07}					0.074	(0.083)	0.086	(0.084)
MBA	β_{08}							-0.024	(0.064)
JD/LLB	β_{09}							0.115	(0.121)
Tenure as CEO	β_{010}					-0.001	(0.005)	-0.001	(0.005)
Tenure at the firm	β_{011}					0.004	(0.003)	0.004	(0.003)
Age	β_{012}					-0.010	(0.006)	-0.012†	(0.006)
Gender	β_{013}					0.271	(0.233)	0.279	(0.237)
For average linear rate of change (π_{1i})									
Average rate of change (linear)	β_{10}	0.056***	(0.009)	0.054***	(0.009)	0.054***	(0.009)	0.054***	(0.009)
Size	β_{11}			0.012***	(0.002)	0.011***	(0.002)	0.011***	(0.003)
Risk	β_{12}			-0.007	(0.016)	-0.007	(0.016)	-0.004	(0.016)
R&D Intensity	β_{13}			0.064***	(0.013)	0.067***	(0.015)	0.067***	(0.015)
Political liberalism	β_{14}					-0.001	(0.001)	-0.001	(0.001)
Output function	β_{15}					0.000	(0.005)	0.000	(0.005)
Functional breadth	β_{16}					0.005*	(0.002)	0.006*	(0.003)
International experience	β_{17}					-0.004	(0.006)	-0.005	(0.006)
MBA	β_{18}							0.007	(0.005)
JD/LLB	β_{19}							-0.015*	(0.007)
Tenure as CEO	β_{110}					-0.000	(0.000)	-0.000	(0.000)
Tenure at the firm	β_{111}					0.000	(0.000)	0.000	(0.000)
Age	β_{112}					0.000	(0.000)	0.001	(0.000)
Gender	β_{113}					0.004	(0.021)	0.004	(0.020)

Table 6.15: Growth Model Parameter Estimates of Predictors of BCSS (continued)

Firm Level Models of BCSS	Parameter	Model 9a: Baseline Cubic Growth Model		Model 9b: Control Model		Model 9c: CEO Model 1		Model 9d: CEO Model 2	
Fixed Effects (cont'd)		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):									
For average quadratic rate of change (π_{2i})	β_{20}	-0.006***	(0.001)	-0.006***	(0.001)	-0.006***	(0.001)	-0.006***	(0.001)
For average cubic rate of change (π_{3i})	β_{30}	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
For slope of past performance (π_{4i})	B_{40}			0.135*	(0.065)	0.131*	(0.065)	0.133*	(0.065)
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**
Level 1									
Temporal variation (within firms)	e_{ti}	0.048***	(0.219)	0.048***	(0.218)	0.048***	(0.218)	0.048***	(0.219)
Level 2									
Between firm variation in initial status	r_{0i}	0.197***	(0.444)	0.186***	(0.432)	0.178***	(0.422)	0.179***	(0.424)
Between firm linear change rate	r_{1i}	0.006***	(0.079)	0.006***	(0.078)	0.006***	(0.078)	0.006***	(0.078)
Between firm quadratic change rate	r_{2i}	0.000***	(0.004)	0.000***	(0.004)	0.000***	(0.004)	0.000***	(0.004)
Total Variance		0.251		0.241		0.232		0.234	
Variance Explained (R^2)				4.4%		7.6%		7.5%	
Change in variance explained (ΔR^2)						3.3%		2.9%	
Goodness of Fit			**pm**		**pm**		**pm**		**pm**
Deviance		1586	11	1396	18	1362	34	1372	38
Reliabilities									
Reliability of intercept coefficient	π_{0i}	0.904		0.898		0.894		0.895	
Reliability of slope coefficient	π_{1i}	0.812		0.809		0.807		0.809	
Reliability of quadratic slope coefficient	π_{2i}	0.817		0.818		0.818		0.818	

Models 8a-8c: n= 6,334 observations within 349 firms; Model 8d: n=6,232 observations within 343 firms
*** p< .001; ** p<.01; * p<.05; † p<0.10

Table 6.16: Growth Model Parameter Estimates of Predictors of DCSS

Firm Level Models of DCSS	Parameter	Model 10a: Baseline Cubic Growth Model		Model 10b: Control Model		Model 10c: CEO Model 1		Model 10d: CEO Model 2	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):									
Average initial status (intercept)	β_{00}	0.162***	(0.008)	0.162***	(0.008)	0.162***	(0.008)	0.160***	(0.008)
Size	β_{01}			0.048***	(0.012)	0.046**	(0.013)	0.053**	(0.013)
Risk	β_{02}			-0.092	(0.072)	-0.127†	(0.073)	-0.116	(0.074)
R&D Intensity	β_{03}			0.032	(0.060)	0.006	(0.065)	0.001	(0.066)
Political liberalism	β_{04}					0.014*	(0.005)	0.015*	(0.006)
Output function	β_{05}					0.031	(0.022)	0.035	(0.022)
Functional breadth	β_{06}					0.013	(0.013)	0.011	(0.013)
International experience	β_{07}					0.023	(0.024)	0.030	(0.024)
MBA	β_{08}							-0.014	(0.021)
JD/LLB	β_{09}							0.025	(0.034)
Tenure as CEO	β_{010}					-0.001	(0.001)	-0.001	(0.001)
Tenure at the firm	β_{011}					0.003**	(0.001)	0.003*	(0.001)
Age	β_{012}					-0.004*	(0.001)	-0.004*	(0.001)
Gender	β_{013}					0.055	(0.061)	0.059	(0.063)
For average linear rate of change (π_{1i})									
Average rate of change (linear)	β_{10}	0.018***	(0.003)	0.018***	(0.003)	0.018***	(0.003)	0.018***	(0.003)
Size	β_{11}			0.005***	(0.000)	0.006***	(0.001)	0.006***	(0.001)
Risk	β_{12}			0.001	(0.005)	0.002	(0.005)	0.002	(0.005)
R&D Intensity	β_{13}			0.020***	(0.004)	0.019***	(0.005)	0.019***	(0.005)
Political liberalism	β_{14}					-0.000	(0.000)	-0.000	(0.000)
Output function	β_{15}					0.003†	(0.002)	0.002	(0.002)
Functional breadth	β_{16}					0.001	(0.001)	0.001	(0.001)
International experience	β_{17}					-0.000	(0.002)	-0.001	(0.002)
MBA	β_{18}							0.002	(0.001)
JD/LLB	β_{19}							-0.003	(0.002)
Tenure as CEO	β_{110}					-0.000	(0.000)	-0.000	(0.000)
Tenure at the firm	β_{111}					0.000	(0.000)	0.000	(0.000)
Age	β_{112}					0.000	(0.000)	0.000	(0.000)
Gender	β_{113}					0.018**	(0.006)	0.018**	(0.006)

Table 6.16: Growth Model Parameter Estimates of Predictors of DCSS (continued)

Firm Level Models of DCSS	Para-meter	Model 10a: Baseline Cubic Growth Model		Model 10b: Control Model		Model 10c: CEO Model 1		Model 10d: CEO Model 2	
Fixed Effects (cont'd)		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):									
For average quadratic rate of change (π_{2i})	β_{20}	-0.001**	(0.000)	-0.001**	(0.000)	-0.001**	(0.000)	-0.001**	(0.000)
For average cubic rate of change (π_{3i})	β_{30}	0.000**	(0.000)	0.000**	(0.000)	0.000**	(0.000)	0.000**	(0.000)
For slope of past performance (π_{4i})	B_{40}			0.055*	(0.021)	0.053*	(0.021)	0.053*	(0.022)
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**	**VC**	**(SD)**
Level 1									
Temporal variation (within firms)	e_{ti}	0.007***	(0.084)	0.007***	(0.084)	0.007***	(0.084)	0.007***	(0.084)
Level 2									
Between firm variation in initial status	r_{0i}	0.019***	(0.140)	0.019***	(0.135)	0.017***	(0.131)	0.017***	(0.130)
Between firm linear change rate	r_{1i}	0.002***	(0.027)	0.001***	(0.026)	0.001***	(0.026)	0.001***	(0.026)
Between firm quadratic change rate	r_{2i}	0.000***	(0.001)	0.000***	(0.001)	0.000***	(0.001)	0.000***	(0.001)
Total Variance		0.027		0.026		0.025		0.025	
Variance Explained (R^2)				4.5%		8.9%		8.9%	
Change in variance explained (ΔR^2)						4.6%		3.6%	
Goodness of Fit			**pm**		**pm**		**pm**		**pm**
Deviance		-10759	11	-10886	18	-10948	34	-10733	38
Reliabilities									
Reliability of intercept coefficient	π_{0i}	0.864		0.855		0.847		0.845	
Reliability of slope coefficient	π_{1i}	0.770		0.766		0.765		0.764	
Reliability of quadratic slope coefficient	π_{2i}	0.771		0.771		0.771		0.771	

Models 8a-8c: n= 6,334 observations within 349 firms; Model 8d: n=6,232 observations within 343 firms
*** p< .001; ** p<.01; * p<.05; † p<0.10

Lastly, to test for the moderating effects of industry norms and managerial discretion predicted in Hypotheses 16-18, I created 36 interaction terms as predictors moderating both the initial levels and the rates of adoption of CSS over time as well as moderating the effects of the executive orientation variables on the initial rates and adoption of CSS over time. However, given the small and largely insignificant industry effects found in Step 1, at this stage it is unlikely that significant moderating effects will be detected. Regardless, I proceed with the formal testing of Hypotheses 16-18 by modeling the following equations (using high discretion environments (HD) as an example):

Level 1: $Y_{ti} = \pi_{0i} + \pi_{1i}(\text{YEAR}_{ti}) + \pi_{2i}(\text{YEAR}_{ti})^2 + \pi_{3i}(\text{YEAR}_{ti})^3 +$

π_{4i} (PAST PERFORMANCE$_{ti}$) + e_{ti} (16)

Level 2: $\pi_{0i} = \beta_{0i} + \beta_{01}(\text{SIZE}_{ti}) + \beta_{02}(\text{RISK}_{ti}) + \beta_{03}(\text{RDINT}_{ti}) + \beta_{04}$(POLITICAL LIBERALISM$_{ti}$) + β_{05}(OUTPUTFUNCTION$_{ti}$) + β_{06}(FUNCTIONALBREADTH$_{ti}$) + β_{07}(INTERNATIONALEXP$_{ti}$) + β_{08}(MBA$_{ti}$) + β_{09}(JDLLB$_{ti}$) + β_{010}(TENUREINROLE$_{ti}$) + β_{011}(TENUREATFIRM$_{ti}$) + β_{012}(AGE$_{ti}$) + β_{013}(GENDER$_{ti}$) + β_{014}(HIGH DISCRETION$_{ti}$) + β_{015}(HD$_{ti}$ X POLITICAL LIBERALISM$_{ti}$) + β_{016}(HD$_{ti}$ X OUTPUTFUNCTION$_{ti}$) + β_{017}(HD$_{ti}$ X FUNCTIONALBREADTH$_{ti}$) + β_{018}(HD$_{ti}$ X INTERNATIONALEXP$_{ti}$) + β_{019}(HD$_{ti}$ X MBA$_{ti}$) + β_{020}(HD$_{ti}$ X JDLLB$_{ti}$) +r_{0i} (17a)

$\pi_{1i} = \beta_{10} + \beta_{11}(\text{SIZE}_{ti}) + \beta_{12}(\text{RISK}_{ti}) + \beta_{13}(\text{RDINT}_{ti}) + \beta_{14}$(POLITICAL LIBERALISM$_{ti}$) + β_{15}(OUTPUTFUNCTION$_{ti}$) + β_{16}(FUNCTIONALBREADTH$_{ti}$) + β_{17}(INTERNATIONALEXP$_{ti}$) + β_{18}(MBA$_{ti}$) + β_{19}(JDLLB$_{ti}$) + β_{110}(AGE$_{ti}$) + β_{111}(GENDER$_{ti}$) + β_{112}(TENUREINROLE$_{ti}$) + β_{113}(TENUREATFIRM$_{ti}$) + β_{114}(HIGH DISCRETION$_{ti}$) + β_{115}(HD$_{ti}$ X POLITICAL LIBERALISM$_{ti}$) + β_{116}(HD$_{ti}$ X

$$\text{OUTPUTFUNCTION}_{ti}) + \beta_{117}(\text{HD}_{ti} \text{ X FUNCTIONALBREADTH}_{ti}) + \beta_{118}(\text{HD}_{ti} \text{ X}$$

$$\text{INTERNATIONALEXP}_{ti}) + \beta_{119}(\text{HD}_{ti} \text{ X MBA}_{ti}) + \beta_{120}(\text{HD}_{ti} \text{ X JDLLB}_{ti}) + r_{1i} \qquad (17b)$$

$$\pi_{2i} = \beta_{20} + r_{2i} \qquad (17c)$$

$$\pi_{3i} = \beta_{30} \qquad (17d)$$

$$\pi_{4i} = \beta_{40} \qquad (17e)$$

All variables where standardized prior to being entered into Equations 16 -17e. Table 6.17 presents the results of the moderation tests for ACSS. Model 11a is a replication of Model 8d (albeit, with standardized coefficients) and serves as the baseline model. Model 11b adds the direct effect of high discretion industry as well as the six interaction effects for each executive orientation variable under study, while Model 11c presents the results for the moderation effects of industry mean ACSS on the relationship between executive orientation and ACSS.[28]

As predicted, the results for the moderation tests were either small or insignificant given the minimal variance found attributable to industry effects in Step 1. However, although the impact on initial levels and the rate of adoption of ACSS does not appear to be greater in high discretion industries (χ^2= 13 at 14 df, p>0.05), there is a small, but significant improvement in the model that accounts for the moderating role of industry norms (χ^2= 29 at 14 df, p<0.05). Given the insignificant results for the effect of managerial discretion (Model 11b), Hypotheses 16a and 17a are not supported and I focus instead on the results of Model 11c for industry norms.[29]

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[28] For ease of presentation only the full model with all executive orientation variables is presented (n=6232 observations nested in 343 firms)

[29] Note: I also tested for the moderating effect using an alternate 3-level model specification in HLM3, which re-introduces separate equations at Level 3 (rather than standardizing and creating interaction variables). The non-significance of the results hold.

Table 6.17: Growth Model Parameter Estimates of Predictors of ACSS with Moderating Effects

Firm Level Models of ACSS	Parameter	Model 11a: CEO Model		Model 11b: Managerial Discretion		Model 11c: Industry Mean ACSS	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):							
Average initial status (intercept)	β_{00}	4.922***	(0.315)	4.632***	(0.425)	4.921***	(0.308)
Size	β_{01}	1.627***	(0.394)	1.792***	(0.429)	1.189***	(0.405)
Risk	β_{02}	-0.199	(0.315)	-0.265	(0.315)	-0.102	(0.329)
R&D Intensity	β_{03}	0.072	(0.341)	-0.081	(0.337)	-0.289	(0.348)
Political liberalism	β_{04}	0.597*	(0.296)	0.430	(0.462)	0.475†	(0.292)
Output function	β_{05}	0.664*	(0.336)	0.815†	(0.475)	0.547†	(0.313)
Functional breadth	β_{06}	0.028	(0.342)	0.491	(0.509)	-0.045	(0.332)
International experience	β_{07}	0.356	(0.331)	0.199	(0.464)	0.336	(0.315)
MBA	β_{08}	-0.162	(0.307)	-0.746†	(0.307)	-0.253	(0.295)
JD/LLB	β_{09}	0.187	(0.339)	0.369	(0.532)	0.147	(0.322)
Tenure as CEO	β_{010}	-0.060	(0.388)	-0.081	(0.376)	-0.151	(0.363)
Tenure at the firm	β_{011}	0.646*	(0.330)	0.724*	(0.333)	0.660*	(0.330)
Age	β_{012}	-0.652†	(0.375)	-0.693†	(0.363)	-0.721†	(0.372)
Gender	β_{013}	0.375	(0.287)	0.403	(0.277)	0.319	(0.276)
High Discretion (HD)	β_{014}			0.569	(0.646)		
HD x Political liberalism	β_{015}			0.355	(0.619)		
HD x Output function	β_{016}			-0.437	(0.671)		
HD x Functional breadth	β_{017}			-0.942	(0.647)		
HD x International experience	β_{018}			0.287	(0.608)		
HD x MBA	β_{019}			1.162†	(0.618)		
HD x JD/LLB	β_{020}			-0.375	(0.636)		
Industry Mean ACSS (IMACSS)	β_{014}					1.551***	(0.289)
IMACSS x Political liberalism	β_{015}					-0.059	(0.265)
IMACSS x Output function	β_{016}					0.569*	(0.287)
IMACSS x Functional breadth	β_{017}					0.059	(0.274)
IMACSS x International experience	β_{018}					0.014	(0.244)
IMACSS x MBA	β_{019}					-0.472†	(0.261)
IMACSS x JD/LLB	β_{020}					0.265	(0.281)

Table 6.17: Growth Model Parameter Estimates of Predictors of ACSS with Moderating Effects (cont'd)

Firm Level Models of ACSS	Parameter	Model 11a: CEO Model		Model 11b: Managerial Discretion		Model 11c: Industry Mean ACSS	
Fixed Effects (cont'd)		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For average linear rate of change (π_{1i})							
Average rate of change (linear)	β_{10}	0.865***	(0.110)	0.877***	(0.113)	0.865***	(0.110)
Size	β_{11}	0.254***	(0.027)	0.253***	(0.028)	0.263***	(0.028)
Risk	β_{12}	-0.013	(0.024)	-0.011	(0.024)	-0.018	(0.025)
R&D Intensity	β_{13}	0.166***	(0.025)	0.167***	(0.025)	0.172***	(0.026)
Political liberalism	β_{14}	-0.010	(0.024)	0.015	(0.036)	-0.011	(0.024)
Output function	β_{15}	0.051*	(0.027)	0.064	(0.043)	0.054*	(0.026)
Functional breadth	β_{16}	0.046*	(0.022)	0.049	(0.034)	0.052*	(0.022)
International experience	β_{17}	0.002	(0.024)	0.037	(0.036)	0.001	(0.024)
MBA	β_{18}	0.039†	(0.021)	0.045	(0.035)	0.043*	(0.021)
JD/LLB	β_{19}	-0.033	(0.023)	-0.051	(0.032)	-0.031	(0.023)
Tenure as CEO	β_{110}	-0.044†	(0.027)	-0.043	(0.027)	-0.041	(0.027)
Tenure at the firm	β_{111}	0.057*	(0.024)	0.059*	(0.024)	0.057*	(0.024)
Age	β_{112}	0.010	(0.024)	0.007	(0.024)	0.014	(0.024)
Gender	β_{113}	0.071***	(0.016)	0.078***	(0.017)	0.073***	(0.017)
High Discretion (HD)	β_{114}			-0.024	(0.046)		
HD x Political liberalism	β_{115}			-0.046	(0.046)		
HD x Output function	β_{116}			-0.021	(0.056)		
HD x Functional breadth	β_{117}			-0.003	(0.043)		
HD x International experience	β_{118}			-0.061	(0.046)		
HD x MBA	β_{119}			-0.010	(0.045)		
HD x JD/LLB	β_{120}			0.037	(0.043)		
Industry Mean ACSS (IMACSS)	β_{114}					-0.021	(0.023)
IMACSS x Political liberalism	β_{115}					-0.030	(0.022)
IMACSS x Output function	β_{116}					-0.014	(0.026)
IMACSS x Functional breadth	β_{117}					0.032†	(0.019)
IMACSS x International experience	β_{118}					0.008	(0.023)
IMACSS x MBA	β_{119}					0.009	(0.021)
IMACSS x JD/LLB	β_{120}					0.014	(0.023)
For average quadratic rate of change (π_{2i})	β_{20}	-0.069***	(0.013)	-0.069***	(0.013)	-0.069***	(0.013)
For average cubic rate of change (π_{3i})	β_{30}	0.003***	(0.000)	0.003***	(0.000)	0.002***	(0.000)
For slope of past performance (π_{4i})	B_{40}	0.126*	(0.052)	0.125*	(0.051)	0.127*	(0.051)

Table 6.17: Growth Model Parameter Estimates of Predictors of ACSS with Moderating Effects (cont'd)

Firm Level Models of ACSS	**Para-meter**	**Model 11a: CEO Model**		**Model 11b: Managerial Discretion**		**Model 11c: Industry Mean ACSS**	
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**		
Level 1							
Temporal variation (within firms)	e_{ti}	7.000***	(2.645)	7.000***	(2.645)	7.000***	(2.645)
Level 2							
Between firm variation in initial status	r_{0i}	29.042***	(5.673)	28.235***	(5.314)	27.287***	(5.223)
Between firm linear change rate	r_{1i}	0.893***	(0.945)	0.898***	(0.947)	0.883***	(0.939)
Between firm quadratic change rate	r_{2i}	0.003***	(0.055)	0.003***	(0.055)	0.003***	(0.055)
Total Variance		36.938		36.136		35.173	
Variance Explained (R^2)		9.0%		10.4%		12.3%	
Change in variance explained (ΔR^2)				n/s		4.8%	
Goodness of Fit			**pm**		**pm**		**pm**
Deviance		32647	38	32634	52	32618	52
Reliabilities							
Reliability of intercept coefficient	π_{0i}	0.905		0.902		0.899	
Reliability of slope coefficient	π_{1i}	0.811		0.811		0.809	
Reliability of quadratic slope coefficient	π_{2i}	0.831		0.831		0.831	

n=6,232 observations within 343 firms
*** p< .001; ** p<.01; * p<.05; † p<0.10

As can be seen in Model 11c, the higher the mean ACSS of the industry, the higher the initial firm level status of ACSS (β_{014}=1.551, $p<0.000$). Furthermore, the tests for the interaction effects of executive orientation and industry norms indicate that the mean industry ACSS does moderate the relationship between two out of the six executive orientation variables and the initial level of ACSS: the relationship between CEOs from output functions and the initial status of ACSS is stronger when industry mean ACSS was high ($p<0.05$). Furthermore, while there was no direct effect of an MBA education on the initial level of ACSS, industry norms do seem to moderate this relationship such that the relationship is stronger and marginally significant when the mean ACSS in the industry is high ($p<0.10$). In other words, when industry ACSS is high, the predicted negative relationship between firms with CEOs that have an MBA degree and the initial levels of ACSS is stronger. However, given that an interaction effect was found for only two of the variables, Hypothesis 18a is only partially supported.

With regards to the linear rate of adoption of ACSS over time, industry norms do not appear to play a direct role (β_{114}=-0.021, $p>0.05$). In fact, the negative sign suggests that it is possible that the higher the industry mean ACSS the slower the rate of adoption of ACSS over time (although insignificant). Furthermore, of the interaction effects, industry norms appear to only marginally effect the relationship between CEOs with greater functional breadth and the rate of adoption of ACSS ($p<0.10$) although this relationship is smaller than the direct effect. Given the lack of significant interactions in the predicted direction, Hypothesis 19a is not supported.

Tables 6.18 and 6.19 replicate the tests for BCSS and DCSS as dependent variables.

Table 6.18: Growth Model Parameter Estimates of Predictors of BCSS with Moderating Effects

Firm Level Models of ACSS	Parameter	Model 12a: CEO Model		Model 12b: Managerial Discretion		Model 12c: Industry Mean BCSS	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):							
Average initial status (intercept)	β_{00}	0.317***	(0.026)	0.310***	(0.035)	0.317***	(0.026)
Size	β_{01}	0.115***	(0.027)	0.127***	(0.029)	0.086**	(0.028)
Risk	β_{02}	0.011	(0.025)	0.007	(0.025)	0.009	(0.025)
R&D Intensity	β_{03}	0.028	(0.027)	0.021	(0.027)	-0.007	(0.028)
Political liberalism	β_{04}	0.032	(0.024)	0.035	(0.036)	0.021	(0.024)
Output function	β_{05}	0.049*	(0.026)	0.090*	(0.036)	0.051*	(0.025)
Functional breadth	β_{06}	-0.004	(0.026)	0.014	(0.036)	-0.012	(0.025)
International experience	β_{07}	0.027	(0.027)	0.025	(0.039)	0.028	(0.025)
MBA	β_{08}	-0.009	(0.023)	-0.029	(0.035)	-0.019	(0.022)
JD/LLB	β_{09}	0.025	(0.027)	0.058	(0.038)	0.019	(0.024)
Tenure as CEO	β_{010}	-0.005	(0.031)	-0.004	(0.030)	-0.006	(0.027)
Tenure at the firm	β_{011}	0.039	(0.026)	0.041	(0.027)	0.039	(0.025)
Age	β_{012}	-0.053†	(0.029)	-0.053†	(0.028)	-0.060*	(0.029)
Gender	β_{013}	0.027	(0.023)	0.033	(0.023)	0.028	(0.025)
High Discretion (HD)	β_{014}			0.013	(0.051)		
HD x Political liberalism	β_{015}			-0.015	(0.051)		
HD x Output function	β_{016}			-0.085†	(0.050)		
HD x Functional breadth	β_{017}			-0.039	(0.049)		
HD x International experience	β_{018}			0.011	(0.049)		
HD x MBA	β_{019}			0.043	(0.047)		
HD x JD/LLB	β_{020}			-0.075	(0.049)		
Industry Mean BCSS (IMBCSS)	β_{014}					0.126***	(0.022)
IMBCSS x Political liberalism	β_{015}					-0.012	(0.024)
IMBCSS x Output function	β_{016}					0.024	(0.018)
IMBCSS x Functional breadth	β_{017}					0.005	(0.021)
IMBCSS x International experience	β_{018}					0.004	(0.019)
IMBCSS x MBA	β_{019}					-0.027	(0.019)
IMBCSS x JD/LLB	β_{020}					0.041	(0.019)

Table 6.18: Growth Model Parameter Estimates of Predictors of BCSS with Moderating Effects (cont'd)

Firm Level Models of ACSS	Parameter	Model 12a: CEO Model		Model 12b: Managerial Discretion		Model 12c: Industry Mean BCSS	
Fixed Effects (cont'd)		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For average linear rate of change (π_{1i})							
Average rate of change (linear)	β_{10}	0.054***	(0.009)	0.057***	(0.009)	0.055***	(0.009)
Size	β_{11}	0.007***	(0.002)	0.006***	(0.002)	0.007***	(0.002)
Risk	β_{12}	-0.000	(0.002)	-0.000	(0.002)	-0.000	(0.002)
R&D Intensity	β_{13}	0.008***	(0.002)	0.009***	(0.002)	0.008***	(0.002)
Political liberalism	β_{14}	-0.001	(0.002)	-0.001	(0.003)	-0.001	(0.002)
Output function	β_{15}	-0.000	(0.002)	-0.004	(0.003)	-0.000	(0.002)
Functional breadth	β_{16}	0.004*	(0.002)	0.004	(0.002)	0.004*	(0.002)
International experience	β_{17}	-0.002	(0.002)	-0.000	(0.003)	-0.002	(0.002)
MBA	β_{18}	0.002	(0.002)	0.002	(0.003)	0.002	(0.002)
JD/LLB	β_{19}	-0.003*	(0.002)	-0.005*	(0.002)	-0.003†	(0.002)
Tenure as CEO	β_{110}	-0.002	(0.002)	-0.002	(0.002)	-0.001	(0.002)
Tenure at the firm	β_{111}	0.001	(0.002)	0.001	(0.002)	0.001	(0.002)
Age	β_{112}	0.003	(0.002)	0.003	(0.002)	0.003†	(0.002)
Gender	β_{113}	0.000	(0.002)	0.000	(0.002)	0.000	(0.002)
High Discretion (HD)	β_{114}			-0.005	(0.004)		
HD x Political liberalism	β_{115}			0.001	(0.004)		
HD x Output function	β_{116}			0.008*	(0.004)		
HD x Functional breadth	β_{117}			-0.000	(0.003)		
HD x International experience	β_{118}			-0.003	(0.003)		
HD x MBA	β_{119}			0.001	(0.004)		
HD x JD/LLB	β_{120}			0.004	(0.003)		
Industry Mean BCSS (IMBCSS)	β_{114}					-0.001	(0.002)
IMBCSS x Political liberalism	β_{115}					-0.001	(0.002)
IMBCSS x Output function	β_{116}					-0.001	(0.001)
IMBCSS x Functional breadth	β_{117}					0.000	(0.001)
IMBCSS x International experience	β_{118}					0.000	(0.002)
IMBCSS x MBA	β_{119}					0.001	(0.002)
IMBCSS x JD/LLB	β_{120}					-0.002	(0.001)
For average quadratic rate of change (π_{2i})	β_{20}	-0.006***	(0.001)	-0.006***	(0.001)	-0.006***	(0.001)
For average cubic rate of change (π_{3i})	β_{30}	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
For slope of past performance (π_{4i})	B_{40}	0.010*	(0.005)	0.010*	(0.005)	0.010*	(0.005)

Table 6.18: Growth Model Parameter Estimates of Predictors of BCSS with Moderating Effects (cont'd)

Firm Level Models of ACSS	Para-meter	Model 12a: CEO Model		Model 12b: Managerial Discretion		Model 12c: Industry Mean BCSS	
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**		
Level 1							
Temporal variation (within firms)	e_{ti}	0.048***	(0.219)	0.048***	(0.219)	0.048***	(0.219)
Level 2							
Between firm variation in initial status	r_{0i}	0.180***	(0.424)	0.176***	(0.419)	0.167***	(0.408)
Between firm linear change rate	r_{1i}	0.006***	(0.078)	0.006***	(0.078)	0.006***	(0.078)
Between firm quadratic change rate	r_{2i}	0.000***	(0.004)	0.000***	(0.004)	0.000***	(0.004)
Total Variance		0.234		0.230		0.221	
Variance Explained (R^2)		7.5%		9.1%		12.6%	
Change in variance explained (ΔR^2)				1.6%		5.6%	
Goodness of Fit							
Deviance		1373	38	1358	52	1329	52
Reliabilities							
Reliability of intercept coefficient	π_{0i}	0.895		0.893		0.888	
Reliability of slope coefficient	π_{1i}	0.809		0.808		0.808	
Reliability of quadratic slope coefficient	π_{2i}	0.818		0.819		0.818	

n=6,232 observations within 343 firms

*** p< .001; ** p<.01; * p<.05; † p<0.10

Table 6.19: Growth Model Parameter Estimates of Predictors of DCSS with Moderating Effects

Firm Level Models of ACSS	Parameter	Model 13a: CEO Model		Model 13b: Managerial Discretion		Model 13c: Industry Mean DCSS	
Fixed Effects		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For intercept (initial status, π_{0i}):							
Average initial status (intercept)	β_{00}	0.159***	(0.008)	0.157***	(0.011)	0.159***	(0.008)
Size	β_{01}	0.036***	(0.009)	0.037***	(0.009)	0.023**	(0.009)
Risk	β_{02}	-0.013	(0.008)	-0.014	(0.008)	-0.010	(0.008)
R&D Intensity	β_{03}	0.000	(0.008)	-0.003	(0.008)	*0.004	(0.007)
Political liberalism	β_{04}	0.019*	(0.008)	0.017	(0.011)	0.017*	(0.008)
Output function	β_{05}	0.013	(0.008)	0.019	(0.011)	0.006	(0.007)
Functional breadth	β_{06}	0.007	(0.008)	0.018	(0.011)	0.004	(0.008)
International experience	β_{07}	0.010	(0.007)	0.000	(0.009)	0.010	(0.007)
MBA	β_{08}	-0.005	(0.007)	-0.021†	(0.010)	-0.006	(0.007)
JD/LLB	β_{09}	0.005	(0.007)	0.000	(0.012)	0.004	(0.007)
Tenure as CEO	β_{010}	-0.005	(0.009)	-0.005	(0.008)	-0.007	(0.008)
Tenure at the firm	β_{011}	0.024*	(0.008)	0.026*	(0.008)	0.024**	(0.008)
Age	β_{012}	-0.017*	(0.008)	-0.018*	(0.007)	-0.019*	(0.008)
Gender	β_{013}	0.006	(0.006)	0.005	(0.006)	0.003	(0.005)
High Discretion (HD)	β_{014}			0.006	(0016)		
HD x Political liberalism	β_{015}			0.009	(0.016)		
HD x Output function	β_{016}			0.005	(0.016)		
HD x Functional breadth	β_{017}			-0.023	(0.016)		
HD x International experience	β_{018}			0.018	(0.013)		
HD x MBA	β_{019}			0.030†	(0.016)		
HD x JD/LLB	β_{020}			0.011	(0.014)		
Industry Mean DCSS (IMDCSS)	β_{014}					0.046***	(0.007)
IMDCSS x Political liberalism	β_{015}					0.001	(0.006)
IMDCSS x Output function	β_{016}					0.018**	(0.007)
IMDCSS x Functional breadth	β_{017}					0.005	(0.007)
IMDCSS x International experience	β_{018}					-0.001	(0.006)
IMDCSS x MBA	β_{019}					-0.012†	(0.007)
IMDCSS x JD/LLB	β_{020}					-0.003	(0.008)

Table 6.19: Growth Model Parameter Estimates of Predictors of DCSS with Moderating Effects (cont'd)

Firm Level Models of ACSS	Parameter	Model 13a: CEO Model		Model 13b: Managerial Discretion		Model 13c: Industry Mean DCSS	
Fixed Effects (cont'd)		**Coeff.**	**(SE)**	**Coeff.**	**(SE)**	**Coeff.**	**(SE)**
For average linear rate of change (π_{1i})							
Average rate of change (linear)	β_{10}	0.019***	(0.003)	0.018***	(0.003)	0.018***	(0.003)
Size	β_{11}	0.004***	(0.001)	0.004***	(0.001)	0.004***	(0.001)
Risk	β_{12}	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
R&D Intensity	β_{13}	0.002***	(0.001)	0.002***	(0.001)	0.002***	(0.001)
Political liberalism	β_{14}	-0.001	(0.001)	-0.000	(0.001)	-0.000	(0.001)
Output function	β_{15}	0.001	(0.001)	0.001	(0.001)	0.001*	(0.001)
Functional breadth	β_{16}	0.000	(0.001)	0.000	(0.001)	0.000	(0.000)
International experience	β_{17}	-0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
MBA	β_{18}	0.001	(0.001)	0.001	(0.001)	0.001	(0.001)
JD/LLB	β_{19}	-0.001	(0.000)	-0.001	(0.001)	-0.001	(0.001)
Tenure as CEO	β_{110}	-0.001	(0.001)	-0.001	(0.001)	-0.001	(0.001)
Tenure at the firm	β_{111}	-0.000	(0.001)	-0.000	(0.001)	-0.000	(0.001)
Age	β_{112}	0.001	(0.001)	0.001	(0.001)	0.001	(0.001)
Gender	β_{113}	0.002**	(0.000)	0.002**	(0.000)	0.002**	(0.000)
High Discretion (HD)	β_{114}			0.000	(0.001)		
HD x Political liberalism	β_{115}			-0.000	(0.001)		
HD x Output function	β_{116}			-0.002	(0.001)		
HD x Functional breadth	β_{117}			0.001	(0.001)		
HD x International experience	β_{118}			-0.002	(0.001)		
HD x MBA	β_{119}			-0.000	(0.001)		
HD x JD/LLB	β_{120}			-0.001	(0.001)		
Industry Mean DCSS (IMDCSS)	β_{114}					-0.001**	(0.000)
IMDCSS x Political liberalism	β_{115}					-0.000	(0.000)
IMDCSS x Output function	β_{116}					-0.000	(0.000)
IMDCSS x Functional breadth	β_{117}					-0.001	(0.000)
IMDCSS x International experience	β_{118}					-0.000	(0.000)
IMDCSS x MBA	β_{119}					0.000	(0.000)
IMDCSS x JD/LLB	β_{120}					0.001	(0.001)
For average quadratic rate of change (π_{2i})	β_{20}	-0.001**	(0.000)	-0.001**	(0.000)	-0.001**	(0.000)
For average cubic rate of change (π_{3i})	β_{30}	0.000**	(0.000)	0.000**	(0.000)	0.000**	(0.000)
For slope of past performance (π_{4i})	B_{40}	0.004*	(0.001)	0.004*	(0.001)	0.004*	(0.001)

Table 6.19: Growth Model Parameter Estimates of Predictors of DCSS with Moderating Effects (cont'd)

Firm Level Models of ACSS	Para-meter	Model 13a: CEO Model		Model 13b: Managerial Discretion		Model 13c: Industry Mean DCSS	
Random Effects		**VC**	**(SD)**	**VC**	**(SD)**		
Level 1							
Temporal variation (within firms)	e_{ti}	0.007	(0.084)	0.007	(0.084)	0.007	(0.084)
Level 2							
Between firm variation in initial status	r_{0i}	0.017	(0.130)	0.016	(0.128)	0.015	(0.126)
Between firm linear change rate	r_{1i}	0.001	(0.026)	0.001	(0.026)	0.001	(0.026)
Between firm quadratic change rate	r_{2i}	0.000	(0.001)	0.000	(0.001)	0.000	(0.001)
Total Variance		0.025		0.024		0.023	
Variance Explained (R^2)		8.4%		12.1%		15.8%	
Change in variance explained (ΔR^2)				4.0%		8.0%	
Goodness of Fit							
Deviance		-10733	38	-10746	52	-10772	52
Reliabilities							
Reliability of intercept coefficient	π_{0i}	0.845		0.841		0.836	
Reliability of slope coefficient	π_{1i}	0.764		0.765		0.769	
Reliability of quadratic slope coefficient	π_{2i}	0.771		0.771		0.771	

n=6,232 observations within 343 firms

*** p< .001; ** p<.01; * p<.05; † p<0.10

6.4 Post Hoc Tests

Given the nature of the hypotheses developed in Chapter 3, alternate formulations of the longitudinal multi-level models are conceivable. Although the models built in section 6.3 best reflect the theory, I nonetheless conducted several post hoc tests given the limited support for the main hypotheses of interest found using RCM. The results of these post hoc tests, using ACSS as a dependent variable for illustrative purposes, are described below.

Modeling the variance in CEO variables: In the ICC tests conducted in Step 4 & 5 of the RCM methodology, the variance in the executive orientation variables attributable to transient time factors vs. stable between-firm factors was approximately equally split, despite high reliability scores for aggregation (Table 6.13). As such, I tested several alternate models, where the CEO variables were entered either as time-variant at Level 1 (rather than stable between firm variances at Level 2) in a two-level model and as time-invariant in a three-level format where years were nested in CEOs and CEOs were nested in firms.

Conceptually, these formulations test slightly different research questions than those hypothesized. In the models where CEO variables are entered as time-variant at Level 1 in a two-level model, the equations test if changes in CEO executive orientation within-firms can predict mean levels of CSS. In the models where CEO variables are entered as time-invariant in a three-level model, technically the equations create independent growth curves for each CEO (rather than each firm) and therefore test if differences between CEOs within firms (rather than between firms) influence the initial status or rate of adoption of CSS for each CEO.

In the two-level model, where all CEO variables were entered as time-variant, no significant results were found between the executive orientation variables and ACSS. The stable firm-level effects were similar to those found in the original analysis (that is firm size predicts both initial status and rate of adoption of ACSS, while R&D intensity predicts only the rate of adoption; past performance is also a significant within-firm predictor of ACSS). However, the models did not detect that changes in a firm's CEO's executive orientation affects ACSS. Given the relative homogeneity of the characteristics of CEOs within firms, this finding is not all together surprising.

Similarly, in the three-level model, where years were nested in CEOs and CEOs nested in firms, the relationship between executive orientation and ACSS was also largely insignificant. While the firm level controls remained the same, only a shift within a firm to a CEO with a law degree was marginally negatively related to the rate of adoption of ACSS ($p<0.10$). However, the reliability estimate in the 3 level model for the CEO slopes was also very low (0.170), suggesting that there is little overall variance in the rate of adoption of ACSS between CEOs in the same firm over time. Furthermore, this model construction violates some published guidelines regarding the minimum number of Level 2 units to be nested in Level 3 units as some firms had only one CEO for the duration of the study (the sample for these models was 5,276 observations, nested in 833 CEOs within 303 firms).

Modeling one CEO per firm: Given this specificity/aggregation trade-off, I also created an alternate sample that consisted of only one CEO per firm, thereby eliminating the need to model the executive orientation variables as time-variant, yet also eliminating the problems associated with low reliabilities and measurement issues of the three level models. I first narrowed the time frame of study to 2001-2008 so that I may select just one CEO per firm; I then selected the CEO that was in place for the longest tenure during this time frame for each firm. This yielded a sample of 1,787 observations nested in 330 CEO/Firms.

Overall, the full CEO model was a significant improvement over both the null and the control models ($p<0.05$), yielding a pseudo R^2 of 48.1%. The relationships between the executive orientation variables and the initial status of ACSS (here, the initial status is 2001 vs. 1991) were, for the most part, as predicted. CEO political liberalism, output function background, international experience, tenure at the firm and gender were all positively and significantly related to the intercept, as were the firm control variables of size, R&D intensity and past performance. On the other hand, the only marginally significant predictor of the rate of adoption of ACSS was the negative impact of a law mindset (-0.39, $p<0.10$). However, the lack of significant findings in the growth curves is not surprising given the much shorter nature of this reduced sample (average of 5 years vs. 18 years). The most interesting finding, perhaps, is that in these models, adding the CEO executive orientation variables to the control model resulted in a reduction in the variance components of 13.8%, suggesting that CEO executive orientation, when modeled as one CEO per firm, has a significant effect on ACSS.

Alternate moderation modeling. Despite finding little variation at the industry level in Step 1, Hypotheses 16-19 were also modeled returning to HLM3. Here, rather than use standardized variables and interaction terms as done for Models 11-13, the moderation was tested by including industry norms and managerial discretion as Level 3 cross-level moderators of the initial status and rate of adoption of ACSS. The results of these tests were similar to those found in Models 11-13; the hypotheses around managerial discretion received no support and the effects of industry norms on the relationships between executive orientation and ACSS were only partially supported. At this stage, an alternate measure for managerial discretion was also tested. Using the aggregated standard deviation for the industry ACSS rather than the high/low distinction based on the Finkelstein et al. (2009) ratings yielded identical insignificant results.

Alternate error structure. As discussed in section 6.3.3, an important, yet often neglected step in RCM is the testing of alternate error structures. HLM assumes a homogeneous sigma squared error structure. Using HMLM2, this can be compared to a first-order autoregressive error structure using a chi-square test of significance. Here, Model 10a was rerun using the AR1 specification in HMLM2. Although the methodology requires different specification (e.g., only the linear or polynomial effects of time can be entered at Level 1), the model with the AR1 error structure is nonetheless a better fit to the data (chi-square=1815, $p<0.000$). In this specification, most of the relationships hold, however, the effect of output function on the initial status of ACSS is no longer statistically significant, neither is tenure at the firm nor age. All of the relationships found for the rate of adoption of ACSS, on the other hand, remain as predicted in Model 10a.

6.5 Robustness Checks

In addition to the post-hoc analyses, I conducted several robustness checks on the final models presented in Section 6.3.

Industry. Despite finding little variance in the three level models for industry, I nonetheless tested the final model for ACSS (Model 8d) including a full set of industry dummies as a robustness check. Using the computer/aero/auto industry as a control, with the exception of the refining/rubber/plastic industry (3.493, $p<0.05$), none of the industry coefficients were significant predictors of either the initial status or rate of adoption of ACSS. Furthermore, the main findings remained largely intact, with some minor variances in significance estimates. Given the effect of including the industry dummies on the number of estimated parameters required (from 38 to 60), the more parsimonious model is retained.

R&D intensity. As described in the methods section, a full 43% of the firm years were missing R&D expenditure information. As is common practice, the missing data was coded as zero given that this is likely accurate for many firms (e.g. financial companies), however, a missing data dummy was also created (Henderson et al., 2006). As a robustness check, Model 8d was rerun including the R&D dummy variable. The coefficient for the R&D dummy variable was insignificant and the significance of the R&D intensity variable on the rate of adoption of ACSS unaffected. The coding for R&D in the analysis is thus deemed robust to this specification.

Slack resources. It has been argued that a firm's level of slack resources may also determine the degree to which a firm can decide to engage in social issue programs (Bansal, 2005) and it has been found to be positively related to CSR in past research (Hillman & Keim, 2001; Orlitzky et al., 2003; Waddock & Graves, 1997). The data for this variable, however, was not found to be missing at random, but was, again, highly correlated to industry membership. As such, rather than lose the information on the primary variables of interest, I reran the final models on a reduced sample that included a control for slack resources, measured as the ratio of current assets over current liabilities (Strike et al., 2006). This model had 5,515 observations nested in 303 firms and slack resources was not found to be a significant predictor of either the initial status or rate of adoption of ACSS. However, in these models the effect of political liberalism and age on the initial status of ACSS became insignificant; the remaining relationships held. Given that Model 8d contained more data on the primary variables of interest, the results are not modified.

Past performance. As noted in the descriptive statistics, while skewness was not an issue, the past performance variable was nonetheless highly kurtotic. To ensure that the kurtosis was not affecting the findings presented herein, Models 8d, 9d and 10d were rerun replacing the untransformed past performance measure with a windsorized past performance variable. There was no impact of this transformation on the value and significance of the main variables of interest. However, given the larger standard errors associated with the windsorized past performance measure, the significance of past performance on ACSS became insignificant ($p=0.11$), while the effect of past performance on BCSS and DCSS went from significant ($p<0.05$) to marginally significant ($p<0.10$). The impact on the coefficient for past performance in all three cases, however, was minimal. The discussion of firm level antecedents to CSS in Section 7.2 includes this finding.

Lagged explanatory variables. Despite arguing for contemporaneous effects of CEO characteristics on CSS, I nonetheless also tested models with lagged explanatory variables. All relationships found in Model 8d hold when lagged by one year.

Lagged dependent variables. As noted in the methodology section, I also did not include any LDVs in my analysis as the method used herein addresses issues of autocorrelation explicitly. However, like Strike et al. (2006), I nonetheless ran the analyses using lagged measures of ACSS as a robustness check. I first did this by adding lagged ACSS to the pooled OLS regressions conducted for the VIFs in Section 6.1. Not surprisingly, as predicted, the inclusion of LDVs helped improve overall model fit, yet suppressed the effect of most coefficients of interest (Achen, 2000). When adding a lagged measure of ACSS to the time-variant equations in HLM, the reliability of all estimates plummeted to near-zero, indicating that the inclusion of an LDV does, in fact, remove most, if not all of, the ability to reliably model predictor variables of interest.

6.6 Summary of Hypotheses Tests

Table 6.20 summarizes the results of the hypotheses tests conducted in this chapter using the RCM methodology. Overall, of the 57 separate hypotheses, 18 were fully supported, 3 were partially supported and the remaining hypotheses were not supported. Most notably, a clear linear pattern was detected in the adoption of ACSS, BCSS and DCSS over the last 20 years, albeit the overall growth remains relatively small (from 5% of total possible strengths in 1991 to just over 12% of total possible strengths in 2009, on average). As such, despite finding statistically significant variation between firms (and surprisingly, not between industries), predicting variation in the initial levels and the rates of adoption of firm CSS proved challenging.

Table 6.20: Summary of Hypotheses Tests using RCM

Hypo-thesis	Predicted Relationship	Result	Model(s)
1a	ACSS follows a linear trajectory over time	Supported	2a & 3a
1b	BCSS follows a linear trajectory over time	Supported	2b & 3b
1c	DCSS follows a linear trajectory over time	Supported	2c & 3c
2a	Significant difference in initial level of ACSS	Supported	3a
2b	Significant difference in initial level of BCSS	Supported	3b
2c	Significant difference in initial level of DCSS	Supported	3c
3a	Significant difference in adoption of ACSS	Supported	3a
3b	Significant difference in adoption of BCSS	Supported	3b
3c	Significant difference in adoption of DCSS	Supported	3c
4a	Liberal worldview and initial level of ACSS	Supported	8c & 8d
4b	Liberal worldview and initial level of BCSS	Not Supported	9c & 9d
4c	Liberal worldview and initial level of DCSS	Supported	10c &10d

5a	Liberal worldview and adoption of ACSS	Not Supported	8c & 8d
5b	Liberal worldview and adoption of BCSS	Not Supported	9c & 9d
5c	Liberal worldview and adoption of DCSS	Not Supported	10c &10d
6a	Output function and initial level of ACSS	Supported	8c & 8d
6b	Output function and initial level of BCSS	Supported	9c & 9d
6c	Output function and initial level of DCSS	Not Supported	10c &10d
7a	Output function and adoption of ACSS	Supported	8c & 8d
7b	Output function and adoption of BCSS	Not Supported	9c & 9d
7c	Output function and adoption of DCSS	Supported	10c
8a	Functional breadth and initial level of ACSS	Not Supported	8c & 8d
8b	Functional breadth and initial level of BCSS	Not Supported	9c & 9d
8c	Functional breadth and initial level of DCSS	Not Supported	10c &10d
9a	Functional breadth and adoption of ACSS	Supported	8c & 8d
9b	Functional breadth and adoption of BCSS	Supported	9c & 9d
9c	Functional breadth and adoption of DCSS	Not Supported	10c &10d
10a	International experience and level of ACSS	Not Supported	8c & 8d
10b	International experience and level of BCSS	Not Supported	9c & 9d
10c	International experience and level of DCSS	Not Supported	10c &10d
11a	International experience and adoption of ACSS	Not Supported	8c & 8d
11b	International experience and adoption of BCSS	Not Supported	9c & 9d
11c	International experience and adoption of DCSS	Not Supported	10c &10d
12a	MBA and initial level of ACSS	Not Supported	8d
12b	MBA and initial level of BCSS	Not Supported	9d
12c	MBA and initial level of DCSS	Not Supported	10d
13a	MBA and adoption of ACSS	Not Supported	8d
13b	MBA and adoption of BCSS	Not Supported	9d
13c	MBA and adoption of DCSS	Not Supported	10d
14a	JD/LLB and initial level of ACSS	Not Supported	8d
14b	JD/LLB and initial level of BCSS	Not Supported	9d
14c	JD/LLB and initial level of DCSS	Not Supported	10d
15a	JD/LLB and adoption of ACSS	Not Supported	8d
15b	JD/LLB and adoption of BCSS	Supported	9d
15c	JD/LLB and adoption of DCSS	Not Supported	10d
16a	Managerial Discretion moderating EO&ACSS	Not Supported	11b
16b	Managerial Discretion moderating EO&BCSS	Not Supported	12b
16c	Managerial Discretion moderating EO&CCSS	Not Supported	13b
17a	MD moderating EO & adoption of ACSS	Not Supported	11b
17b	MD moderating EO & adoption of BCSS	Not Supported	12b
17c	MD moderating EO & adoption of DCSS	Not Supported	13b
18a	Mean ACSS moderating EO & ACSS	Partially Supp.	11c
18b	Mean BCSS moderating EO & BCSS	Partially Supp.	12c
18c	Mean DCSS moderating EO & DCSS	Partially Supp.	13c
19a	MACSS moderating EO & adoption of ACSS	Not Supported	11c
19b	MBCSS moderating EO & adoption of BCSS	Not Supported	12c
19c	MDCSS moderating EO & adoption of DCSS	Not Supported	13c

In summary, models for ACSS, BCSS and DCSS showed similar patterns. On the whole, the CEO effect ranged from approximately 3% in the final RCM models (Model 8d, 9d, 10d) to a robust 14% in the post hoc analysis that isolated the effect of just one CEO per firm on ACSS. Firms run by CEO's with a liberal worldview were consistently related to the initial levels of CSS, while firms run by CEOs from output functions appear to be related to both initial levels and growth of CSS over time. The remaining results for executive orientation were mixed, with international experience showing no relationship to CSS in any RCM model despite a positive and significant relationship in the post hoc analysis. Similarly, firms run by CEOs with an MBA mindset did not affect the rate of adoption of CSS, while the negative effect of a law mindset found some support in the RCM and post-hoc tests. These results are discussed in detail in the next chapter as they relate to the literature covered in Chapter 2 and the theory developed in Chapters 3 and 4.

CHAPTER 7: DISCUSSION

Organizational researchers have long been interested in how managerial cognition affects strategic decision making at the firm level (Walsh, 1995). Herein, I built a model of how managerial cognition at the strategic leadership level influences the corporate social strategies pursued by the firm. Rooted in both the upper echelon perspective and institutional theory, I argued that an open executive orientation in particular, as reflected in a CEO's political worldview, and variables such as functional background, education and international experience affect the selective perception, interpretation and therefore choice of the breadth and depth of a firm's commitment to corporate social strategy. Furthermore, I argued that the level of managerial discretion at the industry level as well as general industry norms will attenuate the relationship between executive orientation and the initial status and rate of adoption of CSS over time, building a longitudinal, multi-level model of the relationship between executive orientation and corporate social strategy.

The findings of the RCM tests of these relationships, however, were mixed. In this chapter I discuss the significance of these results broadly at three levels – individual (CEO), firm and industry - moving from more micro to more macro implications. First, I review the results of the 'CEO Effect' on CSS. Although varied, the findings nonetheless offer some interesting nuances into the relationship between an open executive orientation and the corporate social strategy pursued by the firm over time (Section 7.1). Second, I consider the various important relationships in firm level adoption of ACSS, BCSS and DCSS over time that warrant further exploration (Section 7.2). Lastly, perhaps the most surprising finding of this research regards the lack of significant variance found in the CSS of firms *between* industries (Section 7.3). The implications of these findings are discussed in the following sections.

7.1 Individual Level: The CEO Effect

Strategy scholars have long debated the degree to which an organization's CEO has the capacity to influence important strategic decisions and firm performance outcomes (Child, 1972; Crossland & Hambrick, 2011; Finkelstein et al., 2009; Lieberson & O'Connor, 1972; Mackey, 2008; Thomas, 1988). Several streams of research have emerged under the 'does leadership matter' umbrella: (1) descriptive studies that seek to explain *how much* CEO's matter (Mackey, 2008), (2) contingency models that look to explain *when or where* CEO's matter (Crossland & Hambrick, 2011; Rowe, Cannella, Rankin & Gorman, 2005), and (3) upper echelon explorations into *how* CEO's matter, or stated differently, *what* particular aspects of executive orientation matter to strategic choices made at the firm level (Finkelstein et al., 2009).

With regards to the first stream of research on *how much* CEO's matter, consensus with regards to the magnitude of the CEO effect on firm performance has been elusive. By "CEO effect", I mean the "proportion of variance in a firm-level outcome variable that is statistically associated with, or can be attributed to, the presence of individual CEOs in the sample" (Crossland & Hambrick, 2007p. 769-770). This terminology is often found in variance components analysis (VCA) studies of year, industry and firm effects in strategy research (e.g., Hough, 2006; McGahan & Porter, 1997; Misangyi et al., 2006; Rumelt, 1991; Schmalensee, 1985) and can easily be applied to research in CSR as well. However, given different theoretical and methodological approaches that underpin historical studies on the influence of CEOs (Mackey, 2008), estimates of the CEO effect on firm performance (e.g., ROA) have ranged widely from approximately 5% to 30%, depending on time frame, sample and methodology used as summarized in Table 7.1. Other studies that have not directly employed VCA, have also examined the CEO effect on more specific strategy decisions finding that CEOs influence 3% of the variance in acquisitions, 2% in advertising, 1% in R&D and a full 37% of changes in SG&A (selling, general & administrative) expenses (Bertrand & Schoar, 2003).

In this dissertation, the CEO effect on CSS was also captured in several models and similarly ranges from 3% to 14% depending on the underlying sampling strategy. In the RCM models, including the full set of CEO executive orientation variables reduced the unexplained variance in ACSS by approximately 4% (Model 8d). Similarly, the CEO effect on BCSS was found to be 2.9% (Model 9d) and for DCSS 3.6% (Model 10d). These lower numbers are more in line with Bertrand and Schoar's (2003) findings regarding the CEO effect on particular strategy levers such as advertising and acquisitions than with overall firm financial performance figures as described in Figure 7.1. Furthermore, these results are also in line with several studies that have included CEO predictor variables in models of CSP. For example, Manner (2010) found that CEO education and functional background can explain approximately 5% of the variance in positive CSP measures, yet had no effect on the negative side of CSP. Similarly, CEO international experience and output functional background also add 1.8% to models of CSP strengths with no effect on CSP weaknesses (Slater & Dixon-Fowler, 2009).

In addition, the post-hoc tests revealed that, where the effect of just one CEO per firm was modeled on a reduced sample, adding the executive orientation predictors reduced the variance components by almost 14% (Section 6.4). This suggests that the CEO effect is much more discernable in models where only one CEO per firm is observed, rather than models where CEO effects are aggregated, as is often done in cross-sectional studies. On the whole, despite a relatively small variance explained, the finding of a significant CEO effect in this dissertation (all chi-square tests between models were significant), nonetheless provides evidence that CEO's do matter in determining a firm's initial level and rates of adoption of CSS over time.

Table 7.1: Prior Empirical Studies on the CEO Effect (DV: ROA)

Study	**Lieberson & O'Connor (1972)**	**Weiner (1978)**	**Thomas (1988) ***	**Wasserman, Nohria & Anand (2001)**	**Crossland & Hambrick (2007) ****		**Mackey (2008)**	
Sample:								
CEOs	n/a	n/a	n/a	1384	222		92	
Firms	167	193	12	531	100		51	
Industries	13	1	1	42	n/a		98	
Observations	3,340	3,667	n/a	10,089	1,464		801	
Time Frame	1946-1965	1956-1974	1965-1984	1979-1997	1988-2002		1992-2002	
Method	VCA	VCA	VCA	VCA	Sequential ANOVA	Simul-taneous ANOVA	Sequential ANOVA	Simul-taneous ANOVA
Year Effect	1.8%	2.4%	5.6%	2.6%	4.0%	3.6%	1.0%	0.7%
Industry Effect	28.5%	20.5%	n/a	6.3%	7.7%	11.8%	18.0%	6.2%
Corporate Effect	22.6%	45.8%	83.2%	25.5%	6.5%	19.1%	29.5%	7.9%
CEO Effect	**14.5%**	**8.7%**	**5.7%**	**14.7%**	**30.4%**	**13.4%**	**12.9%**	**29.2%**
Error	32.6%	22.6%	5.4%	50.9%	51.4%	52.1%	38.5%	21.8%
Total	100%	100%	100%	100%	100%	100%	100%	100%

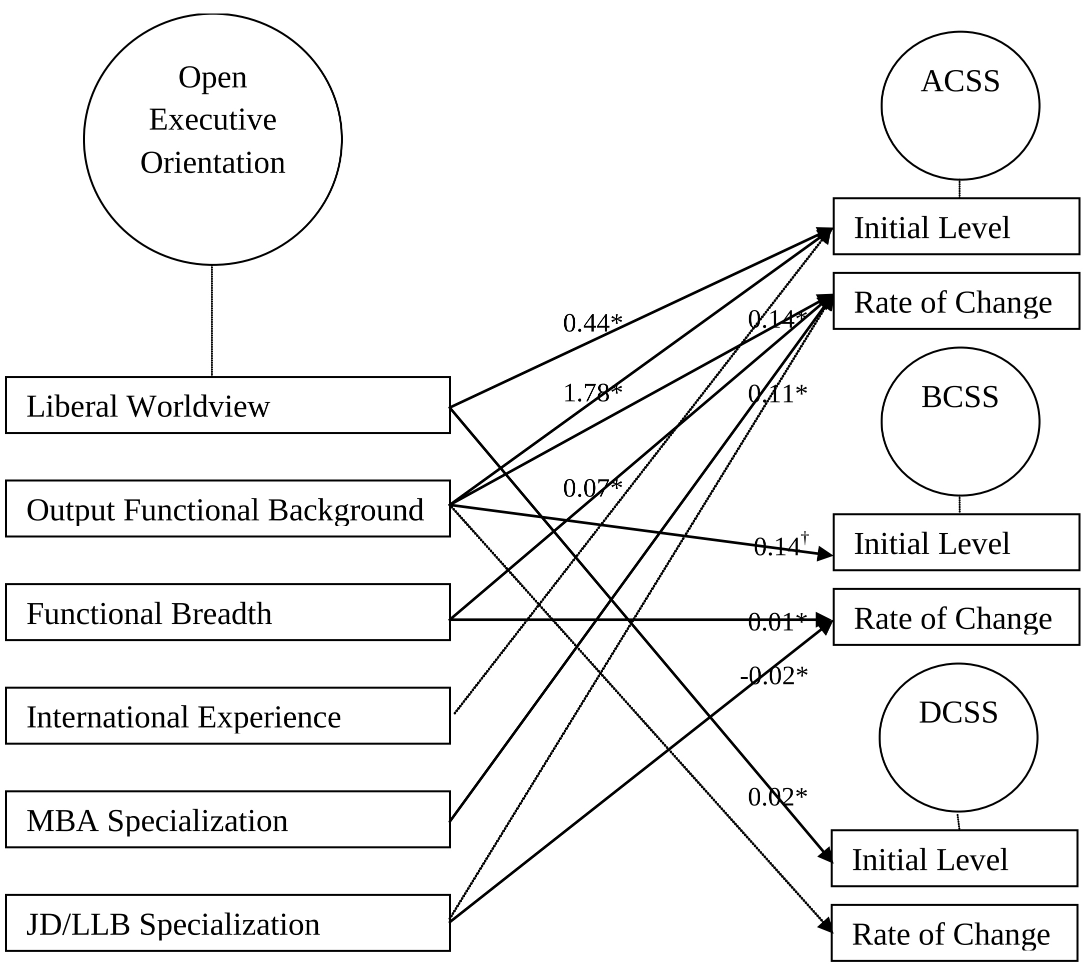
Table adapted and expanded from: Mackey, A. 2008. The effect of CEOs on firm performance, Strategic Management Journal, 29(12), p. 1362.
** The Thomas (1988) study is the only one that is UK not US based*
***The Crossland & Hambrick (2007) study compares the CEO effect for US, Japanese and German firms; The US data is repeated here for consistency with other studies.*

With regards to the second stream of research examining *when* or *where* CEOs matter, I modeled the CEO effect on CSS in light of two different situational variables: managerial discretion and industry norms. The results for managerial discretion were unequivocal: The CEO effect is not stronger in environments characterized by greater degrees of latitude of action (chi-square tests for model fit improvements for 11b, 12b and 13b were all non-significant). This finding is surprising given the vast amount of research that supports stronger associations between CEO variables and firm level outcomes in high versus low discretion contexts (Boyd & Gove, 2006; Crossland & Hambrick, 2011). However, given that the overall industry effect was minimal as detected in the unconditional means models (Table 6.5), it appears as though there was a great deal of variance between firms within industries in general, suggesting overall higher degrees of managerial discretion than anticipated. I return to this point in Section 7.3.

The results with regards to industry norms were similar. Although some of the predicted associations between executive orientation and initial levels of CSS were stronger when industry norms were also higher, these findings were not consistent. Again, with little industry level distinctions between initial levels and rates of adoption of CSS, it was difficult to tease out when the CEO effect may be greater in higher vs. lower mean CSS industries. On the whole, however, the non-significant effects of situational factors suggests that that the CEO effect is *not* contingent on the degree of latitude of action in their operating environment, nor contingent on the level of ‘peer pressure’ imposed by industry norms. This is an important finding in that it supports the strategic choice perspective of managerial decision making rather than situational constraint perspectives (Child, 1972; Oliver, 1991) .

At the core of this dissertation, of course, is the third stream of research into the CEO effect, which takes an upper echelon perspective on *how* CEOs matter to firm level outcomes. Having theoretically argued for the importance of an open executive orientation on levels and rates of adoption of CSS, the final results were mixed and only some of the hypothesized relationships were significant. Figure 7.1 visually depicts the final significant RCM results for ACSS, BCSS and DCSS using the coefficients from Models 8d, 9d and 10d. The dashed lines represent relationships that found partial support in other models.

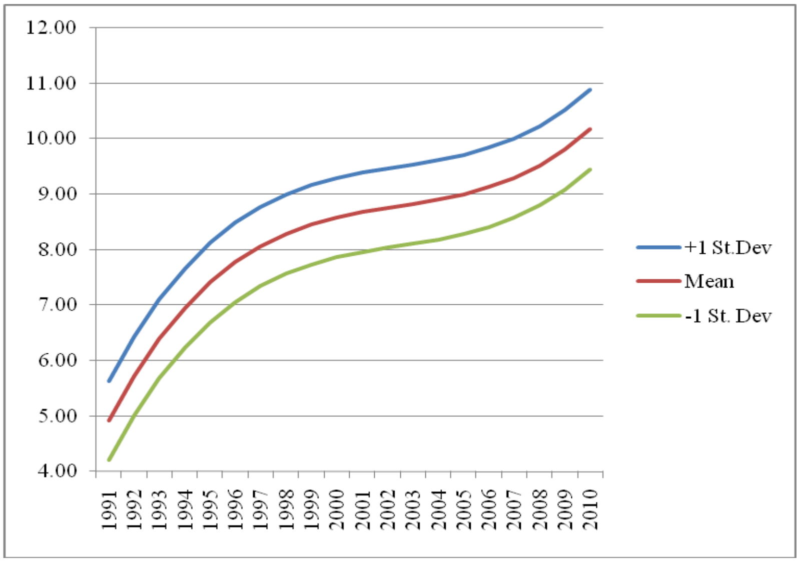
Figure 7.1: Empirical Model of Executive Orientation and CSS



The findings of the hypotheses tests of executive orientation on CSS demonstrate that not all demographic proxies of an open executive orientation have the same influence on a firm's CSS over time. The strongest and most consistent results were for firms led by CEO's with output (e.g., marketing, sales) functional backgrounds, who were related to both the initial levels of ACSS and BCSS, as well as the rate of adoption of ACSS and DCSS (partially). This is a similar result to one of the earliest cross-sectional studies in this area which found that firms with high CSP scores (amalgamated) were more likely to be led by CEOs with backgrounds in output functions (Thomas & Simerly, 1994). Furthermore, it is also in line with studies that have used the throughput/output function distinction as a proxy for CEO openness to change specifically (Musteen et al., 2006, 2010).

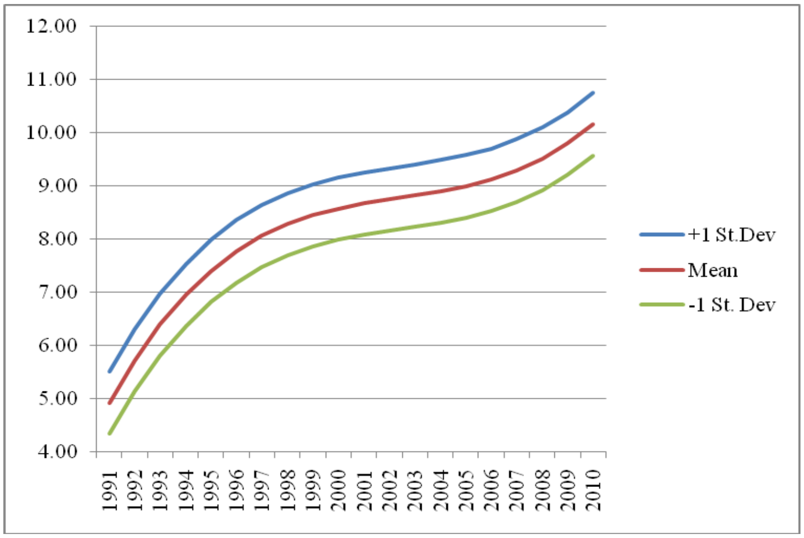
Figure 7.2 visually depicts the effect of firms run by CEO's with output functional backgrounds on ACSS over time using the results from Model 8c with standardized coefficients to graph the relationships. As can be seen, the initial level of ACSS in 1991 for firms run by CEOs with output functional backgrounds is higher than the sample mean and the trajectory for the rate of change over time increases as well (there is a slight fanning in the tail).

Figure 7.2: Relationship Between CEO Output Functional Background and Firm ACSS Over Time



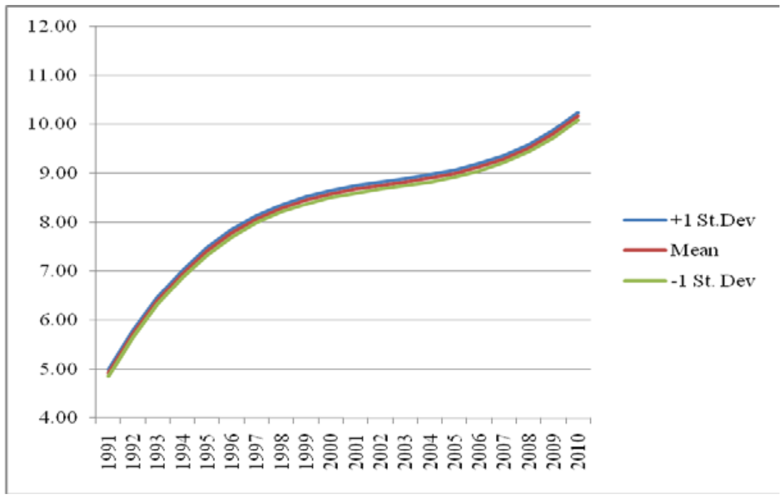
Firms run by CEOs with a liberal worldview were also hypothesized to affect the initial levels and the rate of adoption of CSS. However, in this longitudinal study, a liberal worldview only affected the initial levels of ACSS and DCSS, with no influence on the adoption of broader or deeper social strategies over time. This initial impact, however, was significant and, as can be seen in Figure 7.3, makes a substantial difference to the growth trajectory of ACSS over time for firms run by CEOs with more liberal worldviews. As such, within this sample, firms run by CEOs with liberal worldviews did have higher ACSS and DCSS levels between 1991-2009 than firms run by CEOs with conservative worldviews. This supports the argument that an open executive orientation with regards to social, environmental and other stakeholder issues does in fact make a difference to the levels of CSS adopted by the firm over time.

Figure 7.3: Relationship Between CEO Political Liberalism And Firm ACSS Over Time



Functional breadth, on the other hand, only affects the rates of change of ACSS and BCSS, with no direct effect on initial levels of CSS. This is somewhat contrary to Manner's (2010) recent cross-sectional study that found firms run by CEO's with greater functional breadth had higher levels of CSP. However, the OLS beta estimate for the cross-sectional effect of functional breadth on KLD strengths reported in Manner's study (0.09, $p<0.05$) is not that different from the estimated coefficient for the effect of functional breadth reported here (0.07, $p<0.05$). Because the RCM methodology allows for the modeling of the impact of both the intercept and the slope on the overall levels of CSS, it could be that cross-sectional studies miss this nuance. This finding does, however, suggest that being exposed to a broader variety of functional areas allows for a broader 'selective' perception, interpretation and hence choice of social and environmental programs over time. Although, as can be seen in Figure 7.4, the overall impact of this effect over time is not substantive.

Figure 7.4: Relationship Between CEO Functional Breadth and Firm ACSS Over Time



With regards to international experience, none of the RCM models supported the hypothesis that international experience is positively related to ACSS, BCSS or DCSS initially or over time. This is somewhat surprising given recent research that has shown that firms run by CEOs that have had some international assignment experience are positively related to CSP strengths in particular, at least cross-sectionally (Slater & Dixon-Fowler, 2009). Again, this may be an artefact of the longitudinal vs. cross-sectional study methodology. For example, in the post hoc analyses reported in Section 6.4, international experience was positively and significantly associated with ACSS in the models were only one CEO per firm was measured. Here, the effect of international experience on the initial levels of ACSS was both significant and substantial (β=2.73, $p<0.001$) (although no effect on the rate of adoption was detected given the shorter time frame of the sample). This coefficient is larger than the effect of CEOs with output functional backgrounds (β=2.01, $p<0.05$) or liberal worldviews (β=0.36, $p<0.10$) on initial levels of ACSS (in this case, in 2001), supporting the earlier conclusion that empirical models that isolate the performance of a single CEO will detect greater ‘CEO effects’ as is the case in the Slater and Dixon-Fowler (2009) study.

Lastly, the influence of educational specialization had mixed effects on CSS. Contrary to expected patterns, firms run by CEOs with MBA degrees were marginally more, not less, likely to adopt ACSS over time. Yet, as predicted, firms run by CEOs with legal degrees were less likely to adopt broader CSS. Despite arguments that an MBA education narrows the scope of training to favour shareholder over stakeholder theories of the firm (Ferraro, Pfeffer & Sutton, 2005), it appears as though, on average, this does not affect the adoption of social, environmental and other stakeholder programs over time.

The RCM analyses and the above discussion of the CEO effect thus answer the first research question posed in this dissertation:

1. *What is the relationship between executive orientation and the corporate social strategy pursued by the firm over time?*

I now turn to a discussion of the second research question:

2. *How do firm and industry characteristics affect the relationship between executive orientation and the corporate social strategies pursued by the firm over time?*

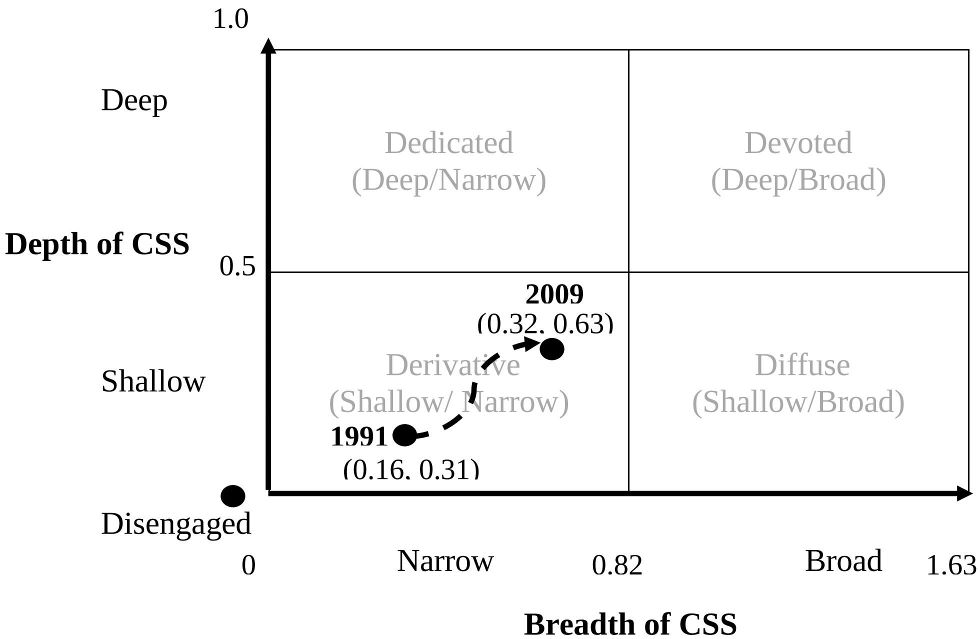
7.2 Firm Level: Typologies and Trends

7.2.1 CSS: Business as Usual?

As the first study to have explicitly modeled the individual growth trajectories of firm level CSS over time, the relatively small overall improvement in CSS over the last 19 years is a somewhat surprising finding of this dissertation. In the aggregate, ACSS has grown from approximately 5% to 12% of total possible social, environmental and other stakeholder strengths in the past two decades. The breadth of CSS has also doubled from about 0.31 to 0.63 and the depth of CSS from .16 to .32. Although this could be considered progress, in absolute terms, the average KLD score for firms has only grown from 2 strengths in 1991 to 4 strengths, on average, in 2009. An entropy measure of 0.31 corresponds to a presence in just over one CSR category (e.g., community relations) and increasing this to 0.63 represents a dispersion from one to two categories (e.g., community relations and diversity). Further, within the CSS area that a firm is engaging at the deepest level of commitment, in 2009 firms are still only participating, on average, in 32% of the total possible initiatives in that area. As such, despite claims that the dawn of a new corporate social responsibility era is upon us (Googins et al., 2007; Waddock, 2008), in empirical fact, this rise has been neither fast, nor great. Rather, it seems as though it has been largely business as usual.

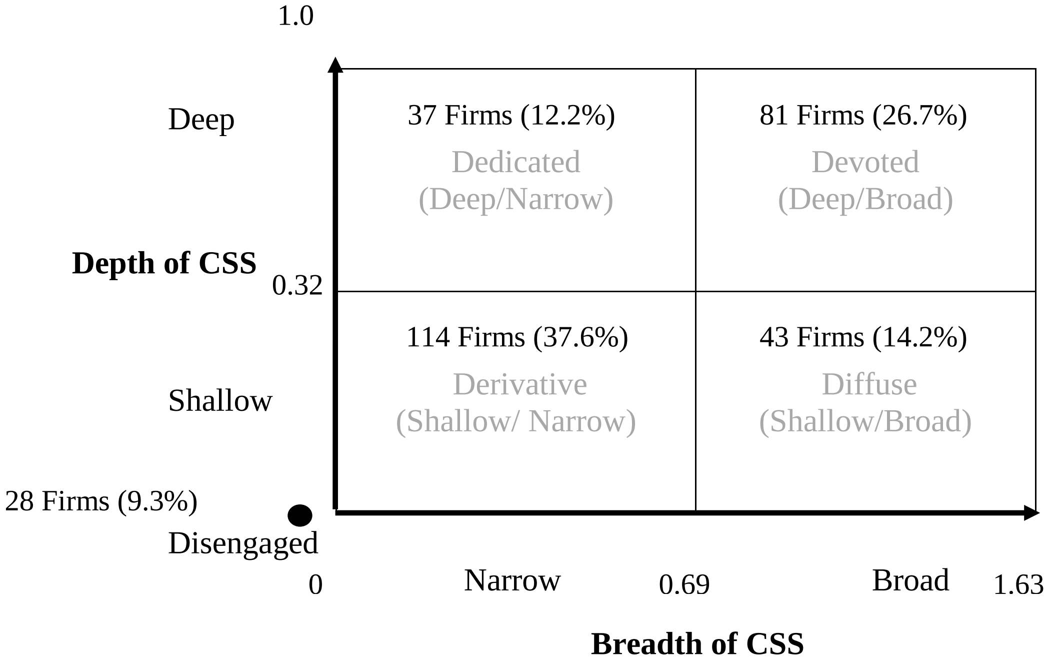
Linking these average scores back to the typology of CSS built in Section 2.3, if the depth axis ranges from 0 to 1 and the breadth axis from 0 to 1.63, than the average CSS pursued by firms in 1991 is not substantially different than that pursued by firms in 2009; as can be seen in Figure 7.5, with a DCSS of 0.32 and a BCSS of 0.63, the average firm in 2009 is still following a Derivative CSS, as was the case in 1991.

Figure 7.5: Typology of Corporate Social Strategy: 1991-2009



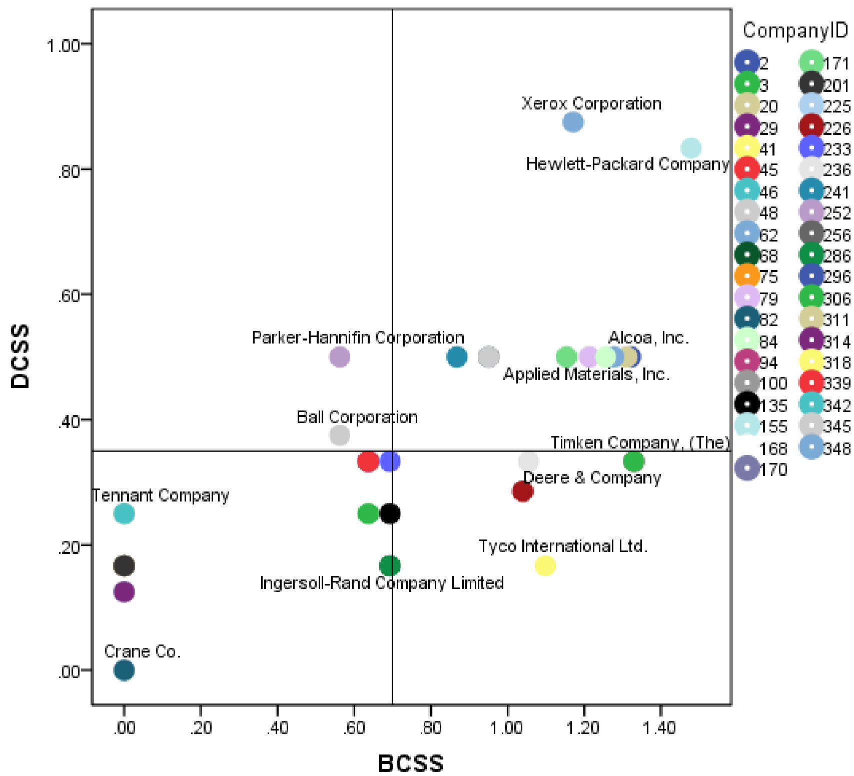
However, the variance in both the initial levels of CSS and the rates of adoption of CSS by firms over time has been significant (Tables 6.6 - 6.10). Further, as outlined in Table 6.1, the range of firm level CSS is vast, with BCSS from zero to 1.63 (or to a presence in every CSR area) and DCSS from zero to one such that some firms are 100% committed to a particular social or environmental category. If we replace the scale of the depth and breadth axes with the sample mean (rather than the scale mid point), it becomes easier to identify specific firms that fall into more proactive quadrants, following Diffuse, Dedicated and Devoted CSS. For example, in 2009, the distribution of the 303 firms in the sample would fall within each quadrant as represented in Figure 7.6.

Figure 7.6: Distribution of Firms by CSS Quadrant (Mean Split) – 2009



While the largest group of firms is still following a Derivative CSS, and 9% of firms remained completely Disengaged in 2009, the variety of approaches to CSS is nonetheless apparent. To illustrate, using the Steel/Heavy Manufacturing industry as an example (SIC 3200-3599, n=39), the following figure demonstrates how the typology can be used to assess the variance in the depth and breath of firm level CSS at a given point in time (here 2009). As can be seen below, familiar companies that are generally well known for their CSR efforts such as Xerox and Hewlett-Packard, can be found in the Devoted CSS quadrant, scoring above the mean on both depth and breadth dimensions. In contrast, other firms such as Deere & Company, follow a Diffuse strategy, with limited engagement across a broad spectrum of social and environmental areas, while Parker-Hannifin scores high in only one category illustrating a Dedicated CSS. While numerous firms also fall into the Derivative quadrant, only Crane & Co. is completely Disengaged in this industry in 2009 registering no strengths in any CSR areas.

Figure 7.7: Typology of Corporate Social Strategy – Steel/Heavy Manufacturing 2009



What then are the firm level determinants of BCSS and DCSS? On top of the open executive orientation predictors outlined in the previous section, several firm-level control variables were also found to be significant determinants of the breadth and depth of CSS over time. Specifically, as in previous studies (McWilliams & Siegel, 2000; Shropshire & Hillman, 2007; Strike et al., 2006), this dissertation confirms that firm size is an important determinant of both the initial levels and rates of adoption of CSS in the last two decades (consistent significant, positive relationship with both initial levels and rates of change across all models). Furthermore, although previous research has stressed the importance of R&D on CSP (McWilliams & Siegel, 2000; Padgett & Galán, 2010), it appears as though R&D intensity is an important predictor of the rate of adoption of CSS over time, but is not necessarily related to the initial status of CSS.

Although there is a lengthy debate with regards to the direction of the causal relationship between firm financial and firm social performance (Margolis et al., 2007; Waddock & Graves, 1997), in this thesis financial performance was modeled as a firm-level control variable predicting initial levels and rates of adoption of ACSS, BCSS and DCSS over time. In all models in this dissertation, this relationship was found to be positive, substantial and significant. However, as noted in the robustness checks, the positive CFP-CSP link uncovered in this thesis should be used with some caution, as the significance levels vary under alternate specifications of the independent variable. Furthermore, past performance was modeled as a direct within-firm time-variant determinant of CSS, rather than as a predictor of intercepts or slopes at Level 2 which could also affect interpretation.

Left unanswered in this dissertation is how different types of CSS (Disengaged, Derivative, Dedicated, Diffuse or Devoted) may in turn affect firm financial performance. This is a question of some importance that has recently surfaced as part of the CSP-CFP debate, which has moved beyond answering questions regarding *whether* CSR matters, to calls for a better understanding of *how* CSR makes a difference to firm level outcomes (Barnett, 2007; Brammer & Millington, 2008; Margolis & Walsh, 2003; Mazutis, 2010; Orlitzky et al., 2003). Although beyond the scope of this dissertation, this discussion nonetheless points to some interesting future research where the full causal link (executive orientation $\rightarrow$ CSS $\rightarrow$ firm performance), can be tested empirically.

7.2.2 CSS: Linear and Non-Linear Trends over Time

In addition to findings at the firm level pertaining to the typology, there were also interesting nuances with regards to the patterns of change observed in firm level adoption of CSS over time. The hypotheses and models developed herein were based on the assumption that the relationship between firm level CSS and time would be linear and positive. In fact, results revealed that, while the overall linear growth pattern holds over time, a small, yet statistically significant cubic trend could be detected (Figures 6.1-6.4; Tables 6.8-6.10). Although no hypotheses were generated to predict this pattern, several possible explanations are feasible given that the final models still contained a significant amount of unexplained variance.

First, it is possible that the growth in the scope and scale of stakeholder, social and environmental issues facing organizations has not been merely cumulative (Waddock, 2008; Waddock et al., 2002), but rather that this growth has been cyclical; as a result, the adoption of CSS initiatives at the firm level that tackle these issues has also been cyclical. In-line with the issue life-cycle approach (Rivoli & Waddock, 2011) outlined in Section 3.1, it is possible that as the importance of some issues have faded, others emerged, which could explain the slight deceleration in the rate of adoption of ACSS, BCSS and DCSS that occurred around the year 2000 and then the quickening of the rate of adoption around the year 2004.

Alternately, the cubic trend could be the result of other macro-environmental factors that affected all firms in the sample equally. For example, it is possible that firm-level corporate social strategy somewhat mirrors the national policies of the political party in office, in four or eight year trends. Similarly, macro environmental jolts such as the introduction of the Sarbanes-Oxley Act in late 2002, which was accompanied by a rush of ethics programs and transparency initiatives, could also explain the rise in CSS seen beginning in 2004. This discussion, however, is speculative and these questions are left for future research.

7.3 Industry Level: Isomorphism - What Isomorphism?

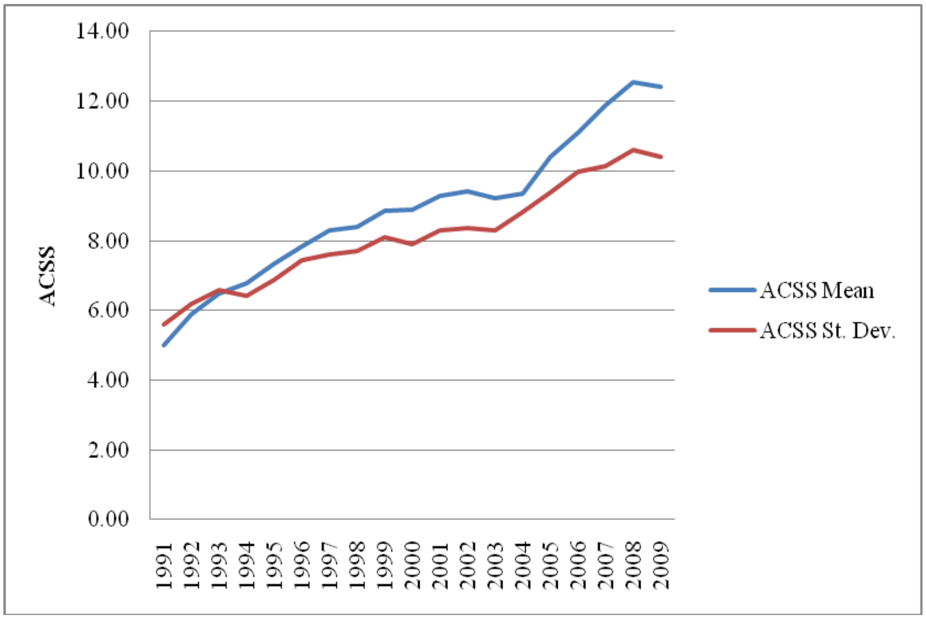
The last level of analysis yielding interesting results in this dissertation pertains to the role of the institutional field, often operationalized at the industry level (Hambrick et al., 2004). Research in CSR has long contended that industry matters in shaping firm level social, environmental and other stakeholder relationships (Waddock & Graves, 1997). Similarly, institutional theorists stress the importance of field level processes such as mimetic, coercive and normative isomorphism that affect the rate of adoption of new practices such as CSR within industries (Campbell, 2007; Hoffman, 1999; Matten & Moon, 2008). Yet, in this thesis, the level of variance attributable to between industry factors ranged from 0% (DCSS) to 2.8% (BCSS) with the overall variance in ACSS determined by industry at only 1.7% (as reported in the unconditional means models in Table 6.5). This suggests that, contrary to the popular assumption that industry membership determines the degree to which firms will engage in CSR activities (Chen, Patten & Roberts, 2008), firms within industries actually have a great deal of latitude in terms of how they choose to respond to social, environmental and other stakeholder issues.

As can be seen in the individual firm growth curves modeled by industry and presented in Appendix D, rather than reflecting isomorphism over time (where less variance is observed as time progresses), the patterns in the growth curves remain wildly variant around the mean throughout the 1991-2009 time frame of this study for every industry. This effect can also been seen in Table 7.2 which details both the mean levels of ACSS and the standard deviations in ACSS from 1991-2009 grouped by industry. While the mean ACSS for all industries has increased during this time span, so too has the standard deviation. This effect is also visually depicted in Figure 7.8.

Table 7.2: Growth in Mean Levels and Standard Deviations of ACSS over Time by Industry

Industry/Year		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Avg.
Mining/Construction	Mean	2.38	3.21	3.97	3.87	3.43	4.09	4.31	4.53	5.17	4.67	5.42	4.84	4.88	4.10	4.55	5.25	6.93	8.82	9.05	4.87
	St. Dev	3.12	3.09	3.40	2.50	2.49	3.38	2.67	3.50	4.18	3.52	5.15	4.25	3.95	3.37	4.29	4.92	4.98	6.32	6.52	4.27
	N	14	15	14	15	16	16	16	16	16	15	16	16	16	16	16	14	14	14	13	
Food/Textiles/Apparel	Mean	5.31	5.71	7.41	8.47	9.54	8.76	8.33	7.47	7.47	8.06	8.61	8.60	8.85	8.85	9.72	11.25	11.64	12.06	12.69	8.81
	St. Dev	5.45	5.35	6.55	7.04	7.76	7.68	7.18	5.72	5.81	6.59	7.48	7.41	7.41	7.80	8.33	9.16	9.24	10.71	10.61	7.68
	N	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	20	19	
Forrest/Paper/Publishing	Mean	4.80	5.31	5.68	5.10	6.05	6.90	7.87	8.19	8.84	8.54	8.28	8.28	7.52	7.81	9.19	10.59	12.09	11.66	11.55	8.08
	St. Dev	5.79	6.86	6.72	6.05	6.12	6.44	7.07	7.62	7.53	7.76	7.14	6.81	6.91	7.27	7.98	9.13	8.91	10.08	10.06	7.72
	N	27	30	30	31	32	32	32	32	32	32	31	30	32	32	32	30	27	28	28	
Chemicals/Pharma	Mean	5.79	6.89	7.11	8.32	9.17	9.53	10.16	10.34	10.89	11.32	11.98	12.63	12.01	12.34	13.88	14.39	15.46	16.44	16.36	11.28
	St. Dev	6.58	6.63	6.95	7.33	8.40	8.15	8.56	8.22	8.31	8.72	9.38	9.80	9.68	10.27	11.44	11.22	11.10	10.79	11.03	9.55
	N	32	36	37	38	38	38	38	38	38	38	37	36	38	38	38	37	35	34	32	
Refining/Rubber/Plastic	Mean	6.88	10.05	11.11	11.52	12.90	12.32	10.84	11.82	13.30	14.29	15.24	15.67	14.29	14.29	16.02	14.71	15.29	15.88	15.88	13.15
	St. Dev	3.96	6.66	6.42	5.22	5.89	4.82	5.43	5.21	5.78	6.86	5.73	7.78	7.41	9.52	11.70	11.16	12.02	12.92	12.92	7.72
	N	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	5	5	5	
Steel/Heavy Manufacturing	Mean	5.56	6.05	6.32	6.14	6.45	6.81	7.23	7.40	8.07	7.92	8.74	8.83	8.52	8.20	10.08	10.74	11.25	12.52	12.44	8.36
	St. Dev	6.77	6.72	6.99	6.03	6.53	7.73	8.12	8.67	9.24	8.50	9.63	9.21	9.25	9.19	9.67	11.02	10.01	10.66	10.68	8.91
	N	38	41	41	41	41	41	41	41	41	40	37	38	40	40	40	40	40	39	39	
Computers/Auto/Aero	Mean	4.22	5.43	5.96	6.56	7.39	7.79	8.51	8.45	9.54	9.44	9.56	9.73	9.63	10.63	11.77	12.78	13.81	14.02	13.64	9.37
	St. Dev	4.34	5.20	6.04	5.82	6.14	6.84	7.22	7.39	8.09	7.72	8.55	8.77	8.90	10.34	11.16	12.06	12.75	12.68	12.14	9.21
	N	57	58	59	60	62	62	62	60	60	60	61	61	61	60	60	58	56	56	55	
Transportation	Mean	8.15	8.42	7.07	6.74	6.74	6.27	6.58	6.90	8.78	8.48	9.39	8.39	9.06	8.13	9.09	8.53	10.70	9.63	9.63	8.23
	St. Dev	6.94	7.96	7.67	7.13	7.42	7.20	6.97	6.72	7.92	7.05	7.57	7.32	7.28	6.94	8.16	7.52	6.48	5.28	5.28	6.90
	N	10	11	11	11	11	11	11	11	11	11	11	10	10	10	9	10	11	11	11	
Telephone/Utilities	Mean	5.25	6.27	7.12	8.44	8.93	9.66	10.90	10.88	9.81	10.27	11.01	10.80	10.38	10.25	9.67	8.82	9.56	10.29	10.29	9.38
	St. Dev	4.87	5.62	6.70	7.42	7.97	8.50	8.37	8.43	8.32	8.05	8.61	8.68	7.09	7.25	5.69	5.44	5.43	6.72	6.72	7.28
	N	24	26	26	26	26	25	25	26	26	25	23	23	25	25	26	25	24	24	24	
Wholesale/Retail	Mean	4.25	4.34	5.51	5.58	6.27	6.70	6.51	6.51	5.96	6.11	5.95	6.26	5.76	6.00	6.96	7.79	8.20	9.01	9.28	6.43
	St. Dev	4.48	5.12	5.56	5.87	6.40	7.51	6.84	6.43	5.31	5.66	5.34	4.69	5.11	5.55	5.39	5.74	6.81	7.69	7.51	6.05
	N	34	35	37	37	36	36	36	36	37	36	37	34	38	38	37	34	33	32	32	
Financial	Mean	6.28	7.68	8.47	8.49	8.21	10.14	11.08	11.10	11.75	11.04	12.19	12.40	12.79	11.93	12.58	12.71	12.65	14.29	13.24	11.07
	St. Dev	5.95	7.54	7.33	6.25	6.65	7.85	7.98	8.57	9.47	8.01	7.97	9.13	9.27	9.58	9.31	9.31	9.43	10.52	10.16	8.66
	N	23	27	28	30	33	33	33	32	32	32	32	32	32	33	33	31	30	28	26	
Hotel/Entertainment/Services	Mean	3.91	5.37	5.19	4.52	5.07	5.58	5.75	6.90	7.55	7.46	7.62	7.42	8.48	9.53	10.15	11.76	12.85	13.00	13.00	7.90
	St. Dev	7.46	7.36	7.82	7.05	6.73	7.82	8.18	8.93	10.72	10.64	10.01	9.07	8.96	9.54	11.22	12.82	14.32	14.52	14.52	10.29
	N	18	20	20	20	21	21	21	21	21	21	21	20	21	20	20	19	19	19	19	
Yearly Averages	**Mean**	**5.01**	**5.90**	**6.48**	**6.78**	**7.34**	**7.83**	**8.30**	**8.41**	**8.88**	**8.89**	**9.30**	**9.41**	**9.22**	**9.37**	**10.40**	**11.10**	**11.90**	**12.55**	**12.42**	**8.89**
	St. Dev	**5.59**	**6.21**	**6.59**	**6.43**	**6.88**	**7.44**	**7.60**	**7.69**	**8.09**	**7.89**	**8.30**	**8.38**	**8.29**	**8.82**	**9.39**	**9.97**	**10.13**	**10.59**	**10.42**	**8.48**

Figure 7.8: Growth in Mean Levels and Standard Deviations of ACSS over Time (Yearly Averages)



Given that DiMaggio and Powell (1983) argue that "the effect of institutional isomorphism is homogenization, the best indicator of isomorphic change is a decrease in variation and diversity, which could be measured by lower standard deviations of the values of selected indicators in a set of organizations" (p. 155), the growth of standard deviations around ACSS can be seen as evidence of increased heterogeneity, not homogeneity, at the industry level with regards to adoption of social, environmental and other stakeholder initiatives.[30]

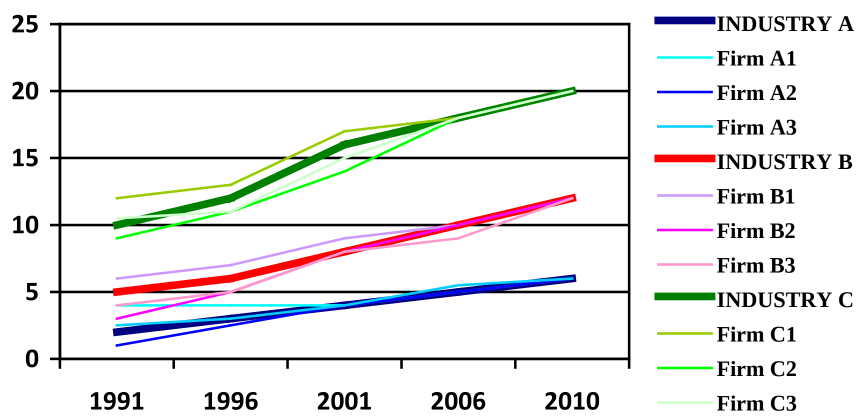
This is not unlike the findings of Hambrick, Finkelstein, Cho and Jackson (2004) who found that, contrary to DiMaggio and Powell's (1983) 'iron cage' hypothesis, the degree of field level heterogeneity in the last twenty years has in fact increased, rather

[30] Appendix E contains the tables and graphs for BCSS and DCSS. While the standard deviations in these charts do not show as marked an increase over time as ACSS, it is clear nonetheless that the homogenization of BCSS and DCSS over time by industry is also not occurring.

than decreased. These authors argue that the macro level determinants of institutional isomorphism predicted by DiMaggio and Powell have failed to materialize. Instead, in the period between 1980-2000, "goal ambiguity has been reduced, industry has become less structurated, dealings with the state have declined, resource dependence has diffused, legitimate alternative models have proliferated, and managerial backgrounds have become more diverse" (Hambrick et al., 2004: p. 326) resulting in more heterogeneous industries at the turn of this century than anticipated. As a consequence, this heterogeneity, they argue, has also increased the overall level of managerial discretion across industries.

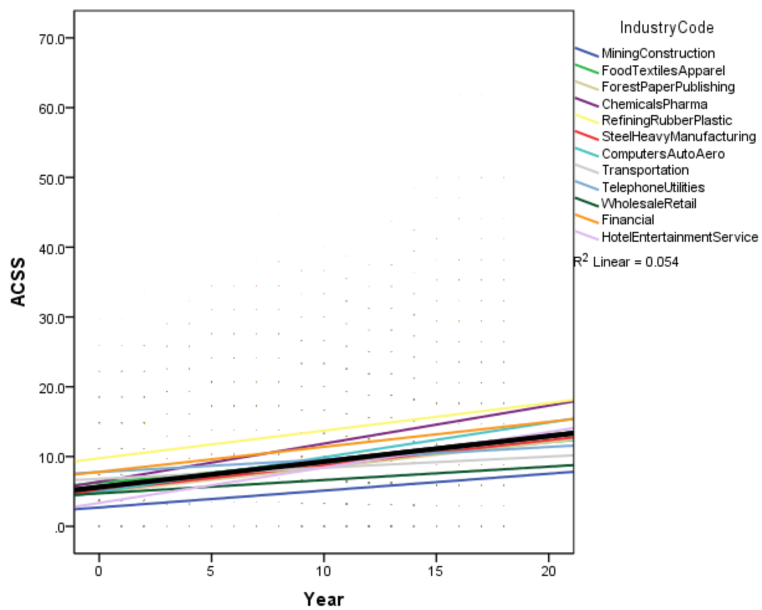
To illustrate, if industry membership was a significant determinant of firm level CSS and isomorphic practices were in place, one might expect to observe growth curves more in line with the hypothetical model in Figure 7.9, with greater initial levels of variation, yet increasing similarity over time (decreasing standard deviations around the mean). Further, the levels of CSS would vary significantly by industry.

Figure 7.9: Hypothetical Expected Growth in Mean Levels and Variation of ACSS over Time by Industry in the Presence of Industry Effects and Isomorphism



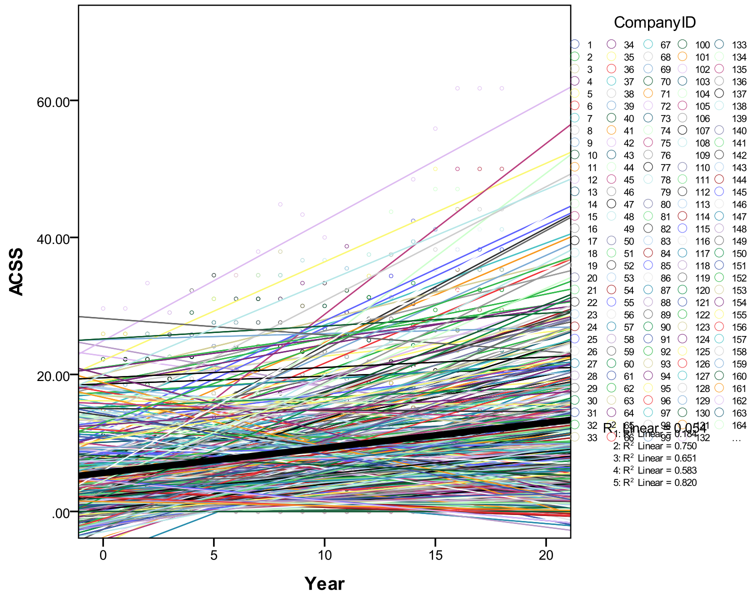
Rather, what this dissertation has shown is that the actual linear growth trajectories between industries are not statistically different from each other such that no one industry can be said to have a higher level or rate of adoption of ACSS over time than another (Figure 7.10). Furthermore, instead of increased isomorphism over time, the degree of variation between firms within industries has instead increased over time (Figure 7.11).[31]

Figure 7.10: Actual Linear Growth in Mean Levels of ACSS over Time by Industry



[31] Note: Linear vs. cubic OLS growth curves shown for ease of illustration.

Figure 7.11: Actual Linear Growth in Mean Levels of ACSS over Time by Company



In summary, although the preliminary testing for patterns of change (Section 6.2) suggested that industries may differ with regards to their initial levels and rates of change of CSS over time, these variances were not consistently significant and none of the random effects of the between industry linear rates of change were significant (Tables 6.5 to 6.7). In addition, compared to the variation between firms *within* industries, the industry level variations were also not substantive. As such, while I anticipated that both the industry level of managerial discretion and industry norms would strengthen the relationship between executive orientation and CSS, with only 0.0 - 2.8% of the variance attributable to industry, these hypotheses found only very limited support. These findings do, however, directly answer part of the second research question posed in the introduction of this dissertation: *How do industry characteristics affect the relationship* *between executive orientation and the CSS pursued by the firm over time?* It appears that the answer is: They don't.

There may be several reasons for this counterintuitive finding. First, despite institutional arguments that suggest firms operating in particular industries may face different degrees of coercive, mimetic or normative isomorphic pressures (Campbell, 2007), extant research has previously found support for the heterogeneity of firm responses to CSR issues, even within the same industry (Aragón-Correa & Sharma, 2003; Hambrick et al., 2004; Sharma et al., 1999; Sharma & Vredenburg, 1998). Second, most studies that have invoked the institutional argument in the CSR domain, nonetheless have tested for industry effects using cross-sectional not longitudinal designs (Shropshire & Hillman, 2007), thus excluding a critical element of institutional theory – the role of time. Lastly, most of the research on institutional effects on firm level CSR have used composite scores for CSR that include both negative and positive CSR activities (e.g., Padgett & Galán, 2010). These amalgamated scores may mask important differences regarding the institutional determinants of corporate social responsibility vs. corporate social irresponsibility (CSiR). While the first two of these arguments have been developed elsewhere in this thesis, the last point merits some further discussion.

7.3.1 Institutional Pressures: The difference between CSR and CSiR

Within the CSR arena, the paradox of forces that drive industries towards homogeneity (firms striving for legitimacy) vs. heterogeneity (firms striving for differentiation) (Hambrick et al., 2004) may be partially explained by the divergent conceptualizations of CSR (aggregate or disaggregate approaches) as discussed in Chapter 2. Research that has relied primarily on aggregate measures of CSP in particular have often included both negative and positive CSR ratings in combination (e.g., Padgett & Galán, 2010). As discussed, these amalgamated scores for CSS present several conceptual as well as methodological issues (Strike et al., 2006).

Yet, one important assumption buried within this approach to CSR that has been less discussed, is the assumption that a firm's negative and positive approach to CSR lie on the same continuum and thus share similar antecedents or outcomes (McGuire, Dow & Argheyd, 2003). While this assumption has some attractive heuristic properties, a great deal of the logic underlying institutional arguments toward homogeneity implicitly invokes explanations for corporate social *irresponsibility* (CSiR), not corporate social *responsibility*. In contrast, CSS, as conceptualized in this dissertation, is the strategic choice to engage in social, environmental or other stakeholder issues and has thus been modeled exclusively as firm engagement in CSR strengths (not concerns) as recommended by recent research (Mattingly & Berman, 2006; Strike et al., 2006). The lack of evidence for an industry effect may therefore be a reflection of the methods employed which in turn sheds interesting new light on existing research.

To illustrate, the common assumption that industry is an important predictor of CSR can be found in one of the earliest rationalizations for industry effects on firm level CSP where the focus was explicitly on the potential *negative* implications of industry association that stated: "depending on its characteristics, an industry may or may not experience significant *problems* in a given social arena" (Waddock & Graves, 1997: p. 309, emphasis added). Similarly, it has been argued that firms in manufacturing industries, by definition, face more environmental issues and product safety issues than firms in service-oriented companies and, as a result, will be more corporately socially responsible (Chen et al., 2008). Chatterji and Toeffel (2010) also found that firms in highly regulated industries are more likely to improve their environmental performance after being poorly rated. While these industry effects may be true, the underlying institutional mechanisms at play may be, in reality, serving to mitigate *negative* externalities, rather than to promote *positive* CSR outcomes.

The legitimacy argument that is central to institutional theory explanations for a firm's "license to operate" also rests primarily on assumptions pertaining to CSiR, not CSR. For example, it has been argued that firms in industries that have greater visibility or that are more consumer-facing, may attract greater public scrutiny and are therefore held to higher standards of corporate citizenship (Brammer & Millington, 2004; Gardberg & Fombrun, 2006; Seifert, Morris & Bartkus, 2004). Legitimizing institutional pressures guide firms to avoid "poor social and environmental ratings [that] can harm a company's performance and reputation" (Chatterji, Levine & Toffel, 2009: p. 126). These arguments, however, do not necessarily transpose to pressures to pursue positive CSR programs.

This mirrors the long debate in business ethics about a firm's negative vs. positive responsibilities. Negative duties refer to an organization's responsibility to 'do no harm', with respect to stakeholders or the natural environment. In contrast, a firm's positive duties refer to obligations that reflect a commitment to help others achieve some good (Swanson, 1995). It is possible that isomorphic pressures, as envisioned and endorsed by institutional theorists, may have differential effects on industry level consensus regarding CSR vs. CSiR issues. For example, coercive isomorphic pressures seem to work through legislative and regulatory mechanisms to ensure protection of primarily negative rights. Through the use of sanctions and fines, firms are encouraged *not* to pollute, *not* to discriminate and *not* to abuse human rights. Yet, there are fewer coercive mechanisms that encourage firms to support positive duties (e.g., corporate philanthropic contributions to the community are not legislated) and attempts to regulate are often met with great opposition (e.g., affirmative action). Mimetic and normative isomorphism may also affect CSR and CSiR differentially.

Deephouse (1999), for example, argued that managers in an industry:

> "develop cognitive consensus about the strategies that will lead to success. Called 'industry recipes' by strategists, these strategic norms resemble the governance structures, institutional logics, and institutional templates of institutional theory. Strategic norms can develop about different scope and resource commitments, such as diversification and innovation." (Deephouse, 1999: p.152)

It would be logical to assume that these strategic norms would also develop about the legitimate scope of resource commitments around CSR issues. However, this dissertation did not find support for 'strategic norms', 'industry recipes' or 'cognitive consensus' around CSS as CSR strengths. Rather, it is possible that industry recipes about appropriate courses of action have only developed around CSiR which represents a 'stronger situation', than around positive CSR initiatives, which may continue to present as a 'weak situation' that allows for greater variability in firm responses (Mischel, 1977; Mullins & Cummings, 1999). As McGuire, Dow and Argheyd (2003: p. 341) argued: "variables that encourage 'exemplary' corporate performance may differ from those that discourage dubious social performance". It is feasible, then, from an institutional theory perspective, that pursuing broader or deeper CSS does not offer the same legitimizing benefits to a firm as does avoiding CSiR.

As such, normative isomorphic pressures may play a larger role as a determinant of CSiR, rather than as a predictor of more positive conceptualizations of CSR, such as CSS as argued in this dissertation. Strategic similarity may exist within the CSiR of firms between industries, where coercive, normative and mimetic isomorphic pressures serve to *constrain* the range of acceptable firm behaviours (Deephouse, 1999), rather than *promote* proactive engagement in CSS. Yet, an empirical test of this argument is left to future research.

Having reviewed the findings of this thesis at multiple levels – the individual CEO effect, firm level CSS and industry level observations about isomorphism, I now turn to a necessary discussion about the study's limitations as well as possible directions for future research.

CHAPTER 8: LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

As with all studies, this research project is not without limitations. First, the longitudinal archival method itself, although designed to be as robust as possible, nonetheless only indirectly tests the relationships between executive orientation and corporate social strategy. Research conducted in the upper echelon tradition has often been criticized for an overreliance on demographic proxies for testing the underlying mechanisms between managerial cognitions and strategic choices (Boal & Hooijberg, 2000; Cannella & Monroe, 1997). However, the study designed here is meant to address some of the prior limitations by taking both a longitudinal and multi-level approach, integrating several new measures of executive orientation, as well as explicitly modeling the role of external forces on strategic decision making thus heeding the call for more contextualized models of positional strategic leadership (Carpenter et al., 2004).

This limitation, however, opens up many avenues for future research. For example, despite the low anticipated response rates at the CEO level, one might consider a survey methodology to more directly test some of the proposed relationships regarding openness to change/experience with existing values scales (Schwartz, 2005), personality inventories (Judge & Bono, 2000) or attitude towards change measures (Musteen et al., 2006). Similarly, content analysis of company communications, books, speeches or press stories may also allow for testing of managerial cognitions (e.g., Nadkarni & Barr, 2008) especially underlying theories regarding CEO's openness to experience or tolerance for ambiguity (Cannella & Monroe, 1997; Mullins & Cummings, 1999). A deep qualitative exploration of executive openness to change using structured or semi-structured interviews with CEOs about their perceptions and interpretations of CSR issues in particular would likely continue to yield interesting insights (e.g., Cannella & Monroe, 1997; Sharma et al., 1999). One could also envision assessing executive openness to experience/change in experiential learning exercises and simulations. Testing the hypothesized relationships with alternate methodologies would thus help triangulate the findings of this study as well as continue to delve into the 'black box' of executive cognitions (Cannella & Monroe, 1997).

Another possible limitation of this dissertation regards the exclusive focus on the CEO, rather than the larger unit of the top management team (TMT) or the broader governing unit of the board of directors (BOD). Although some researchers in this area have advocated for the study of TMTs instead of CEOs as superior predictors of firm level strategies (e.g., Bantel & Jackson, 1989; Carpenter et al., 2004), others "highlight the pitfalls of using aggregate units of analysis when studying the influence of corporate elites on corporate strategy" and suggest "a return to the simple CEO unit of analysis" (Jensen & Zajac, 2004: p.507 & p.521) as the CEO unit of analysis appears to provide adequate predictive validity (Jensen & Zajac, 2004).

This debate, however, also provides very interesting directions for future research: Would the same relationships between executive orientation and corporate social strategy hold for the members of the TMT? How would the heterogeneity of executive orientations in the TMT affect the breadth, depth or overall nature of CSS pursued by the firm over time? What is the role of the BOD in shaping the CSS of the firm? Does CEO duality matter? Similarly, how important is CEO, TMT and BOD congruence on openness to change in determining the corporate social strategies pursued? Including the important roles of the TMT and the BOD in future studies thus also warrants more focused attention.

The nature of the variables tested herein also present a limitation in and of themselves given that they necessarily present only an incomplete picture of an open executive orientation. Although recent work has suggested that openness can be measured as a combination of age, tenure and educational experience (Datta et al., 2003), how other proxies for an open executive orientation (functional background, breadth of experience, international experience etc.) may combine as either a formative or a reflexive construct has yet to be determined. In addition, one can envision other potential experiences that may also capture the domain of openness as an executive orientation, such as experience across different organizations, or different industries, as well as experience as an outside director on other BODs, especially not-for profit organizations (Geletkanycz & Hambrick, 1997). Given that the hypothesized relationships between the predictor variables and the dependent variables in this study showed different levels of empirical support, a worthwhile future endeavour may include a finer-grained analysis of the factors that determine an open executive orientation and a subsequent, more parsimonious, test of CEO openness (as one variable) on CSS.

Furthermore, the study design necessitated aggregation of the CEO level variables at the firm level. Although not found in the post-hoc analyses, it is nonetheless possible that differences within firms on CEO openness to change that may accompany CEO succession occasions could accelerate or decelerate the rate of adoption of CSS within firms. For example, Datta et al. (2003) found that new CEO openness to change was negatively related to a strategic persistence in a sample of CEO successions in the US manufacturing industry, also finding that industry level managerial discretion attenuates this effect. Clustering techniques could be used to isolate 'ideal' types of incoming CEOs and their effect on subsequent adoption of CSS further tested using alternate statistical methodologies, such as logistic regression.

Lastly, the dataset used herein also necessarily limits the generalizability of the findings to large, public firms in a U.S. context. Yet, Crossland and Hambrick (2007) found that it is precisely in this context that variance in firm performance can be most directly attributed to a firm's chief executive (vs. German or Japanese contexts, for example). In the US, CEOs have a far greater latitude of action; on a national level (not just an industry level) American CEOs enjoy a greater degree of managerial discretion, and as such, the US allows for the best context in which to perceive the CEO effect on firm level outcomes. However, research has also suggested that "executive open-mindedness toward change" is something that varies by country (Geletkanycz, 1997) and thus, despite the small potential to find significant effects on corporate social strategy, an international context would nonetheless be an interesting avenue for future studies.

In the end, the limitations of this study present many possible directions for future research in this area. In addition, the data collected also offers a wide variety of extensions to the current dissertation. For example, the relationship between executive orientation and the depth measure of CSS may vary depending on the type of CSR activity. To illustrate, it is possible that CEO openness to change values are related to a deeper commitment to social issues such as diversity (e.g., programs that promote women, minorities or gay/lesbian rights), while CEO conservation values are related to a deeper commitment to social issues such as community relations (e.g. philanthropic giving). For example, out of several types of CSR, Lerner and Fryxell (1994) only found support for their hypotheses around CEO community orientation which was positively related to corporate philanthropy. Should this be the case here, then the relationship between an open executive orientation and ACSS and DCSS might be dampened, possibly explaining the lack of support for many of the hypothesized relationships. Disaggregating the CSS measures thus may yield further interesting findings.

Similarly, as discussed in Section 7.3.1 the nature of the relationships proposed and tested herein focused exclusively on CSS as a strategic choice to implement positive CSR programs. No relationships were hypothesized regarding the relationship between executive orientation and social, environmental or other stakeholder weaknesses. However, this data has been gathered, allowing not only for future investigations into the antecedents and outcomes of corporate social irresponsibility as well, but also for broader longitudinal investigations into the degree of variability of CSiR between industries that would allow for a more direct test of DiMaggio and Powell’s (1983) iron cage hypothesis. New studies with regards to the different paths to greater CSS may also be undertaken that directly test the stages approach to CSR (Maon et al., 2010). For example, the database could be used to study if firms first engage in CSS by mitigating negative externalities, then build a deep CSS in a particular area, before moving into different, broader categories, or if other evolutionary paths are more predominant. Must a firm go through stages, or can some firms be ‘born Devoted’? What role does executive orientation play in these different trajectories?

Although not formally hypothesized, the RCM analyses also demonstrated some interesting findings regarding some of the CEO level control variables that also point to interesting avenues for future research. For example, gender was positively and consistently associated with the rate of adoption of ACSS and DCSS over time (although not a factor in BCSS) as has been found in other studies (Manner, 2010). Furthermore, the effect of CEO tenure on ACSS suggested that the longer the CEO tenure *at the firm*, the higher the rate of adoption of ACSS, yet the greater the tenure *in the role,* the lower the rate of adoption of ACSS. This paradox might be partially explained by stewardship theory, which proposes that executive and organizational motives can be aligned and need not adhere to the negative assumptions that underlie agency theoretic approaches to governance (Davis, Schoorman & Donaldson, 1997). A stewardship theory of CSS may thus also be a future extension.

Lastly, the executive biographies used in this dissertation have also been coded for other potentially interesting factors that may effect issue perception, interpretation and strategic choice regarding CSS including: founder status, elite education, political intensity, worldview stability, military experience amongst others. Although no theories have been developed regarding these variables and CSS, the database includes the possibility to engage in theory development around these relationships as well as other important firm level outcomes such as strategic persistence, conformity, change and deviance.

CHAPTER 9: CONTRIBUTIONS

This thesis yielded three primary results at the CEO, firm and industry levels. First, the CEO effect on CSS ranges between 3-14% and evidence supports that some aspects of an open executive orientation are indeed important determinants of initial levels and rates of adoption of CSS over time. Specifically, firms with higher initial levels of ACSS are led by CEOs with more liberal worldviews and output functional backgrounds, while the rate of adoption of ACSS is also predicted by CEOs with output functional backgrounds as well as breadth of functional experience. The predicted effects of CEO international experience and educational specialization on CSS, however, did not materialize. The findings also reveal that the overall firm level of CSS has not grown substantively over the last two decades, with most firms in 2009 still engaging in a Derivative CSS (shallow/narrow). Furthermore, unlike previous studies that confound negative and positive CSR, this dissertation demonstrates that industry membership is *not* an important determinant of the strategic choice of positive CSS, nor are institutional pressures moderating factors in the executive orientation – CSS relationship.

This thesis thus makes several important theoretical contributions in the CSR, upper echelons and institutional theory domains (Section 9.1). Furthermore, it provides methodological contributions (Section 9.2), as well as yields important implications for practice (Section 9.3). These specific contributions are detailed below.

9.1 Contributions to Theory

9.1.1 Contributions to Theory: CSR

The model of executive orientation and corporate social strategy tested here is a direct response to Margolis and Walsh's (2003) call to reorient CSR research away from theories that simply attempt to justify a firm's response to CSR from an economic perspective. Instead, the authors suggested that we should embrace the antimony inherent in the economics vs. ethics debate and assume that "instrumental efficiency and human beneficence, wealth maximization and the amelioration of social misery, and shareholder rights and stakeholder rights all matter" (p. 283-284). Only then, can we build a normative theory of the firm that acknowledges these competing tensions and objectively assesses how firms are *actually* addressing these trade-offs.

Margolis and Walsh (2003) suggest that "a starting point for building such a theory requires a systematic descriptive inquiry into corporations' responses to calls for an expanded role" (p.284) which includes deepening our understanding of how companies perceive external stimuli, how they generate and evaluate response options, how they select and implement a course of action and evaluate the consequences of these efforts. This dissertation directly contributes to such a systematic descriptive inquiry by examining how executive orientation in particular affects the choice of corporate social strategy pursued by firms in different industries over time, finding that the CEO effect ranges from 3-14% and that different dimensions of an open executive orientation are important predictors of both initial levels and rates of adoption of ACSS, BCSS and DCSS.

This dissertation also contributes to the literature on CSR by introducing a new typology of CSS which differs from existing conceptualizations of CSR in several ways. First, it allows for a finer-grained conceptualization of types of corporate social strategy pursued by the firm. Where stakeholder management and social issue participation models have previously been considered together (everything that lies "beyond economic and legal requirements of the firm"), here I make the distinction that they may not be perceived as equivalent by the CEO of the firm. CEOs may choose to pursue (or not pursue) very different CSS depending on the nature of the stakeholder or social issue under consideration. Second, I highlight the role of choice in determining the depth and breadth of corporate social strategy pursued. Previous research has treated CSP as an achieved state without considering the endogenous choices made to arrive at this state (Barnett, 2007). By including the choice of narrow vs. broad CSS, as well as shallow vs. deep CSS, I incorporate the idea that investing in CSR is a strategic choice akin to other resource commitment decisions (Waldman & Siegel, 2008). Lastly, by marrying the depth of the CSS with the breadth of CSS, this typology moves beyond just a simple low/high dichotomy of CSP. Rather, it allows for a more nuanced appreciation for firms that are engaging in Disengaged, Derivative, Dedicated, Diffuse and Devoted CSS thus allowing for future normative explorations into positively deviant or even supererogatory corporate social strategies.

Importantly, by applying this typology to the growth of CSS over time, I find that, despite increasing calls for businesses to address society’s mounting concerns, in the last twenty years there has actually been little substantive growth in the adoption of CSR initiatives by large US firms. Although the overall mean levels of ACSS have more than doubled, from 5% in 1991 to 12% in 2009 (with similar patterns for BCSS and DCSS), most firms in 2009 are still engaging in a Derivative CSS when it comes to social, environmental and other stakeholder issues. Although significant variance exists in firm responses over time, on the whole, the ‘call for an expanded role’ has largely been met with ‘business as usual’.

9.1.2 Contributions to Theory: Upper Echelons

This research also addresses the multiple calls for inquiry into the relationship between strategic leadership and corporate social responsibility (Agle et al., 1999; Basu & Palazzo, 2008; Laplume et al., 2008; Maon et al., 2008; Rose, 2007; Thomas & Simerly, 1994; Waldman et al., 2006a; Waldman & Siegel, 2008; Waldman et al., 2006b; Wood, 1991). Despite an astounding body of literature on the effects of CEO and TMT psychographic and demographic experiences on firm financial performance, no systematic inquiry into their effects on firm social performance *over time* has been conducted to date. Rather, there are only a select handful of cross-sectional analyses regarding executive orientation and CSR (e.g., Manner, 2010; Slater & Dixon-Fowler, 2009). This research thus heeds Wood's call "to know more about how managers perceive choices in their organizational and societal environments" (Wood, 1991: p. 702) that affect the strategic choice of CSS.

In particular, this research also introduces a new measure of CEO worldview which has hitherto not been applied in the study of upper echelons and was found here to be a significant determinant in both initial and overall levels of ACSS and DCSS over time. Rooted in extensive research in the fields of political science and psychology, the ideological social cognitions that divide liberal vs. conservative orientations are readily applicable to the study of executives and executive decision making. Barnett specifically isolated cognition as a key determinant of CSR activity "that helps explain enduring nonoptimal supplies of CSR by some firms" (Barnett, 2007: p. 812) and the finding that CEO worldviews, as a reflection of openness to change and experience, can impact levels of CSS over time is thus an important contribution.

Walsh (1995) provides a useful framework for evaluating research on managerial and organizational cognition which is pertinent to this thesis; he suggests that researchers in this domain build theories that: (1) uncover the content and structure of cognitions, (2) relate the use of managerial cognitions to consequences of substantive organizational importance (e.g., the deployment of a firm's resources), (3) explore the developmental origins of the cognitions and (4) be sensitive to group, organization, and even industry levels of analysis (p.282).

With regards to Walsh's (1995) first requirement, this dissertation investigates the specific content and structural attributes of executive orientation used by CEOs when evaluating complex and ambiguous issues involving CSR. At the individual level, cognitive *content* includes individual level knowledge structure representations (e.g., screens, filters, frames of reference and other 'givens'), use (e.g., selective perception, strategic choice) and development (e.g., functional experience, educational specialization). The model of an open executive orientation and CSS built and tested here is based on previous research which has clearly established CEO cognitive representations, use and development arguing that CEO psychological and demographic experiences shape the filters used in the selective perception process resulting in variations in strategic choices around CSR issues. The model also incorporates research on the *structural* attributes of cognitions. By suggesting that the cognitions of certain CEOs are more open as a result of different psychological attributes such as openness to change values or personality traits such as openness to experience, the structural attributes of an open executive orientation were found in CEOs liberal worldview, output functional backgrounds and breadth of functional experiences.

With regards to Walsh's (1995) remaining requirements for theories of managerial cognition, in this thesis, I have developed multiple hypotheses that specifically relate the use of managerial cognitions to 'consequences of substantive organizational importance' (CSS) as well as uncovered the developmental origins of the relevant attributes of executive orientation that are likely to impact this relationship. Lastly, the model of executive orientation and CSS considered industry level variables that were shown to not affect the relationship between executive orientation and CSS thus satisfying all four of Walsh's (1995) guidelines for theories of managerial cognition.

9.1.3 Contributions to Theory: Institutional Theory

Despite an extensive body of research that suggests that firm strategies tend to resemble one another due to isomorphic pressures towards conformity (DiMaggio & Powell, 1983), this study found that, when it comes to CSS, variability, not similarity, within industries is the norm. As argued in Section 7.3, this thesis therefore also contributes to institutional theory in that it highlights the potential that CSR and CSiR may follow different evolutionary paths rooted in divergent coercive, normative or mimetic pressures affecting firm responses to negative vs. positive responsibilities. It is possible, therefore, that pursing CSS may not yield the same legitimacy benefits as avoiding CSiR, explaining the lack of evidence for isomorphism over time found in this thesis.

The lack of industry effects, both in explaining overall variance, as well as in moderating the relationship between executive orientation and CSS, also provides support for the strategic choice perspective (Child, 1972) over the environmental determinism perspective (Hannan & Freeman, 1984). Despite the large body of research that argues that managerial ‘latitude of action’ is restricted in certain industries (Finkelstein et al., 2009), this was not found to be the case for CSS. Rather, CSS may instead fall into what Boyd and Gove (2006) called a “differentiated choice” environment, where firms have managed to cultivate discretion despite a highly uncertain context. This dissertation thus has the potential to inform institutional theory by integrating managerial discretion and isomorphism arguments.

As one of the only studies of which I am aware that has mapped firm level growth in CSS over time, this dissertation also contributes to institutional theory by explicitly modeling a key variable implicit in theories of homogeneity or heterogeneity of firm responses over time – time itself. Questions regarding strategic change, persistence, deviance and conformity all require longitudinal designs to accurately capture the dynamic nature of rates of change over time. This dissertation thus answers the multiple calls for more explicit, longitudinal investigations into the institutional drivers of the CSR development process within and between organizations (Brammer & Millington, 2008; Maon et al., 2010; Short et al., 2006).

9.2 Contribution to Methods

This research also answers calls for more multilevel investigations of organizational phenomena in general (Bamberger, 2008; Bies, Bartunek, Fort & Zald, 2007; Cannella & Holcomb, 2005; Hitt et al., 2007; Kozlowski & Klein, 2000). Empirical tests of upper echelon models have typically been conducted at a single level of analysis (Cannella & Holcomb, 2005) while corporate social responsibility necessarily “involves an examination of corporate social agency at multiple levels of analysis: the micro level (focusing on psychological and social psychological bases), the meso level (involving relational and network issues), and the macro level (involving political, economic, institutional and societal dynamics)" (Bies et al., 2007: p. 789). The longitudinal, multi level model built here is thus a contribution to multi-level theorizing and the use of RCM in HLM6 to test the hypotheses is a contribution to multi-level methods which have only just recently gained momentum in strategy research (e.g., Misangyi et al., 2006).

In addition, researchers have suggested that there is a paucity of longitudinal studies not only in the upper echelon literature (Cannella & Holcomb, 2005), but in the CSR literature as well (Agle et al., 1999). Rather, many empirical investigations rely on cross-sectional data that make the study of change problematic (Shropshire & Hillman, 2007) or measure only the effect of short-term change in CSP, such as from time t to time $t+1$ (Ruf, Muralidhar, Brown, Janney & Paul, 2001). By examining the corporate social strategies of firms over 19 years, I contribute methodologically to research in this area through growth curve modeling and direct tests of the patterns of change within CSS over time. Following the guidelines set forth for longitudinal, random coefficient modeling (Bliese & Ployhart, 2002; Ployhart & Vandenberg, 2010; Raudenbush & Bryk, 2002; Singer & Willett, 2003), this thesis brings this new methodology into the upper echelon, CSR and institutional literatures.

Lastly, by introducing new measures such as CEO liberal worldview as well as the breadth (entropy) and depth (specialization) of CSS, this research also adds to measurement of both executive orientations in the upper echelon field as well as to corporate social performance in the CSR literature.

9.3 Implications for Practice

Within the context of today's ethical scandals, a deeper understanding of individual, firm and industry level determinants of socially responsible strategies also has important implications for practice. The calls for more ethical and more responsible leadership as well as more enlightened corporate citizenship are pronounced (Paine, 2003; Googins et al., 2007) and arguments have been made that a new corporate social responsibility institutional environment has arrived (Waddock, 2008). Furthermore, a recent study revealed that 93% of CEOs believe that sustainability issues, defined as human rights, labour relations, environmental and governance issues, will be critical to the future success of their businesses (UNGC & Accenture, 2010). Yet, little guidance is available to help executives navigate the increasing calls to mitigate societal ills (Margolis & Walsh, 2003; Peloza, 2009), leading to a proliferation, not homogenization, of firm responses to CSR issues over time.

This dissertation thus contributes directly to practice by introducing a new typology of CSS that can be used to help assess a firm's current CSS profile as compared to key competitors in their organizational field. As done in Figure 7.7, the breadth and depth of one's CSS can be mapped and compared to other firms in the industry. If some strategies are presumed to proffer some form of competitive advantage, either through direct revenue benefits from differentiation and cost advantages, or through indirect means such as reputation or insurance, executives in organizations may look to firms engaging in more Dedicated or Devoted CSS for best practices.

Furthermore, CEOs interested in accessing the market for capital now inherent in SRI funds, may use the typology to make strategic choices to either increase the depth of their engagement in a particular CSS or broaden the scope of their CSS efforts into new social, environmental or other stakeholder issues. For example, Chatterji and Toffel (2010) claim that fifteen of the world's top twenty five institutional financial managers use the KLD rating system specifically, representing over $10B in investment capital. Furthermore, Choi and Wang (2009) demonstrated that positive stakeholder relations (as measured by the aggregate KLD score) in particular help create and sustain economic rents for the firm over time. These results suggest that executives pay close attention to SRI funds both in terms of access to capital as well as for the potential benefit to financial performance; the typology presented in this dissertation can thus serve as a useful strategic decision making tool in the CSR arena.

Traditional strategic arguments have also been made regarding the necessity of fit between a firm's strategy and changes in their operating environment (Porter, 1980; Wiersema & Bantel, 1992). The overall growth in CSS over time, while still relatively small, nonetheless suggests that there are advantages to be had "by aligning organizational factors with stakeholder needs and by recognizing the ongoing dynamic nature of those demands"; the typology derived herein can thus also help executives ensure alignment and "improve a firm's responsiveness to external forces and changing expectations." (Shropshire & Hillman, 2007: p. 83).

Furthermore, this dissertation can also help managers understand their personal role in shaping the CSS of their firms by providing support for the strategic choice view that CEOs have an important influence on the strategic decisions taken at the firm (Child, 1972). Given that industry level factors were not found to be a significant influence on the initial levels or rates of adoption of CSS over time, situational determinism is a less tenable rationale for inaction. In conjunction with parallel research that has demonstrated the negative financial consequences to a Disengaged CSS in particular (Mazutis, 2010, 2011), increasing one's self-awareness about the nature of the relationship between executive orientation and CSS thus also has important implications for the firm.

Although previous research has suggested that individual worldviews, knowledge structures or cognitive paradigms are relatively fixed (Carpenter and Fredrickson, 2001), there is some evidence that self-reflection itself can be an experience that changes the representations of stimuli in cognitive structures (Schmidt, McAdams & Foster, 2009; Walsh, 1995). This suggests that if CEOs have an increased awareness of the impacts of an open executive orientation on CSS, this act of self-reflection may in and of itself affect the filtering process of strategic choice under conditions of bounded rationality. Such a broadened perspective of the consequences of executive orientation may thus potentially serve to broaden executive perceptions of potential strategic choices regarding corporate social strategies available to the CEO and to the firm.

The results of this dissertation thus also have implications for recruiting and promotion practices within firms that are embracing the call for greater corporate engagement in addressing pressing stakeholder and social issues (Margolis and Walsh, 2003). Should the question of proactive CSR become an agenda item in the boardroom, for cost, benefit, reputation, insurance, access to capital or any other reason, CEO hiring committees may be wise to consider the characteristics of an open executive orientation required for deeper or broader engagement in CSS. Ensuring fit between executive orientation and organizational goals is a critical function of the board of directors (Datta & Rajagopalan, 1998).

Lastly, this research has the potential to also contribute to policy, by explicitly modeling the role of institutional norms and managerial discretion in the variation of CSS pursued by firms in different industries. Given that no support was found for industry level moderators of the executive orientation→ CSS relationship, policy makers are in the unique position to be able to introduce regulations or other controls which may move the levels and rates of adoption of CSS of entire industries in a positive direction.

CHAPTER 10: CONCLUSION

In a recent dialogue in *Leadership Quarterly,* Siegel (2008) argued that: "a firm's decision to engage in social responsibility should be viewed as a strategic choice...as an investment decision" (Waldman & Siegel, 2008). Similarly, I have argued herein that a firm's decision to pursue a broad or deep corporate social strategy is a strategic decision which is at the discretion of a firm's senior executives and that this decision will be influenced by the executive orientation of the CEO.

Having developed a theoretical model that proposes how CEO worldview, functional background, educational background and international experience which are reflective of an open executive orientation are related to corporate social strategy over time, this research bridges the strategic leadership and CSR literatures, answering the numerous calls for greater research into this relationship. The primary contributions of this research are therefore threefold. First, I make a contribution to the upper echelon and CSR literatures by making the link between CEO executive orientation and corporate social strategies explicit. Second, I fill a gap in the CSR literature that has largely bypassed the important role of the CEO in determining a firm's response to social issues and that has been largely bereft of longitudinal and multi-level theories of the determinants of CSS. Lastly, I test the relationship between strategic leadership and CSS empirically using RCM and new methodologies (HLM), thus also making a contribution to methods in the field. In so doing, this research project provides new insights into why CEOs and firms differ with respect to the social issues they choose to pursue and the nature of the strategies they use to address these issues.

This study of executive orientation and corporate social responsibility is thus motivated by a broader research agenda that is aimed at uncovering the determinants of positively deviant or even supererogatory corporate social strategies. By looking into the executive orientations that might affect corporate response to societal ills, I construct detailed CEO and firm profiles of organizations that have chosen Dedicated or Devoted CSS despite the challenge of "promoting social justice in a world in which this shareholder wealth maximization paradigm reigns" (Margolis & Walsh, 2003; p. 273).

The shareholder primacy norm is thus central not only to the research question probed herein, but also to the researchers themselves working in this domain. Despite the fact that the study of economics was originally intended to provide theories of *social* not *individual* welfare maximization, a recent review of all the management literature in the last 45 years showed that the majority of all empirical work has focused on financial performance as a dependent variable, with human welfare as an outcome dropping from 32% of all publications in 1978 to 19% in 1999 (Walsh, Weber & Margolis, 2003). Walsh et al. (2003) outlined the path management scholarship has taken to this "imbalanced research agenda" and called for researchers to return to the roots of the Academy of Management's mandate, as defined over fifty year ago (p.859):

> "The general objective of the Academy shall be therefore to foster: a) a philosophy of management that will make possible the accomplishment of the economic *and social objectives* of an industrial society with increasing efficiency and effectiveness: *the public's interests must be paramount* in any such philosophy, but adequate consideration must be given to the legitimate interests of capital and labor. . . .
>
> . . . Editor's preface, *Journal of the Academy of Management*, 1958, 1(1): 5–6."

It was therefore the intention of this research project to heed this historical interpretation of the purpose of management scholarship and help refocus the strategy lens away from what Ghoshal (2005) described as the negative self-fulfilling ‘ideology-based gloomy vision’ of existing economic theories of the firm. In the end, having developed a theoretical model and tested the hypothesized relationships between an open executive orientation and CSS, I hope to have contributed to a better understanding of the relationship between strategic leadership and the observable variations in CSS pursued by firms over time. In so doing, I have uncovered a significant CEO effect as well as detailed the characteristics of an open executive orientation that, despite the pervasiveness of the shareholder primacy norm, have allowed some firms to choose, nonetheless, to engage in greater levels and rates of adoption of CSS over time.

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APPENDIX A: List of Studies using KLD Data

Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Independent Variable					
Graves & Waddock (AMJ, 1994)	n=453 firms; 1990	regression, cross-sectional	Corporate Social Performance (CSP)	8 dimensions (5 'stakeholder relations' categories: community, employee relations, environment, product and diversity + 3 'external pressure': military contracting, nuclear power and involvement in South Africa), scale of -2 to +2; weighted	High CSP values are positively related to high levels of institutional ownership
Turban & Greening (AMJ, 1996)	n=160 firms; data from 1992-1993	regression, cross-sectional	Corporate Social Performance (CSP)	5 dimensions: community, diversity, employee relations, environment, product quality; Sum (-2 to +2 scale)	CSP is related to a firm's reputation and attractiveness as an employer, suggesting that a firm's CSP may provide a competitive advantage in attracting applicants.
Waddock & Graves (SMJ, 1997)	n=469 firms; 1990	regression, cross-sectional	Corporate Social Performance (CSP)	8 dimensions (5 'stakeholder relations' categories: community, employee relations, environment, product and diversity + 3 'external pressure': military contracting, nuclear power and involvement in South Africa), scale of -2 to +2; weighted	CSP positively related to prior financial performance; CSP (communities and environment) lead to better financial performance
Agle, Mitchell & Sonnenfeld (AMJ, 1999)	n=80 firms; 1996-1997 (avg)	correlation, regression, cross-sectional	Corporate Social Performance (CSP)	4 measures of corporate social performance: employee relations, (including diversity), community relations, environment, and products; five-point scale ranging from -2 to +2; plus one overall measure of CSP, which was the aggregate of the four measures	Stakeholder attributes (power, legitimacy, urgency) affect the degree to which top managers give priority to stakeholders; But CEO values have no moderating effect and there is no relationship between stakeholder salience and performance.

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Independent Variable (cont'd)					
Berman, Wicks, Kotha, Jones (AMJ, 1999)	n= 486 firm year observations; 81 Fortune 500 companies x 6 years (1991-1996)	pooled time series model; OLS regression	Stakeholder Relationships	5 dimensions treated separately: employee relations, diversity, community relations, the natural environment, product safety/quality	Only employee relations and product/safety quality are positively related to firm financial performance
Graves & Waddock (B&SR, 2000)	n=11 matched pairs of Built to Last (BTL) companies; 1991-1997	descriptive statistics; t-tests	Stakeholder performance	5 dimensions: employee relations, diversity, community relations, the natural environment, product safety/quality. Sum of concerns and strengths (-2 to +2 scale)	BTL companies outperform non-BTL companies on all measures of stakeholder and financial performance
McWilliams & Siegel (SMJ, 2000)	n = 524 firms (from 1991-1996)	correlation, regression, cross-sectional	Corporate Social Performance (CSP)	CSP is a dummy variable, with a value of 1 if a firm is included in the DSI 400 in a given year (for having passed the "social screen"); 0 otherwise.	CSR has a neutral impact on financial performance when R&D is controlled for
Hillman & Keim (SMJ, 2001)	n= 308 firms, multiple industries, data from 1994, 1995 and 1996	correlation, regression, cross-sectional	Stakeholder Management (SM) vs. Social Issue Participation (SIP)	SM = employee relations, diversity, community relations, the environment and product issues; SIP = other, alcohol/tobacco/gambling exclusionary screens, non-US concerns over investment in Burma & Mexico. Sum of concerns and strengths (-2 to +2 scale)	SM leads to improved shareholder value, while social issue participation is negatively associated with shareholder value; when disaggregated, only community relations positively related to MVA

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Independent Variable (cont'd)					
Ruf, Muralidhar, Brown, Janney & Paul (JBE, 2001)	n = 496; 1991 - 1992	regression; cross-sectional	Corporate Social Performance (CSP)	8 dimensions (5 'stakeholder relations' categories: community, employee relations, environment, product and diversity + 3 'external pressure': military contracting, nuclear power and involvement in South Africa), scale of -2 to +2; weighted	Change in CSP is positively associated with growth in sales for the current and subsequent year (short-term benefits from improving CSP). ROS positively related to change in CSP for the third financial period, indicating that long-term financial benefits may exist when CSP is improved.
Coombs & Gilley (SMJ, 2005)	n=406 firms (&CEOs); unbalanced panel 1995-2001 (total of 2,297 observations)	regression with panel estimates	Stakeholder Management (SM)	5 dimensions: employee relations, community, diversity, environmental impact and product safety/quality; Summed (-2 to +2 scale)	Significant, negative main effect of SM on CEO salaries (CEO's may jeopardize personal wealth by pursuing stakeholder issues)
Bouquet & Deutsch (JBE, 2008)	n= 4244 firm-years, 813 firms, avg of 5.3 years (1991-2003)	regression	Corporate Social Performance (CSP)	8 dimensions: community relations, employee relations, environmental performance, product characteristics, treatment of women and minorities, investment in areas involved in human rights controversies, investment in firms that rank poorly on social performance; Summed (-2 to +2 scale)	MNEs engaged in intermediate levels of CSP achieve lower levels of multinationality than firms operating at either anchor of the social performance continuum.
Garcia-Castro, Canela & Arino (B&S online, 2008)	n=658 firms; 1998-2005	multiple year regressions	Stakeholder Management	5 dimensions: employee relations, customer/product issues, community relations, diversity issues, environmental issues); summed; equal weights index -1 to +1	Negative effects of stakeholder management on shareholder value in the short run but positive effects over the long run

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Independent Variable (cont'd)					
Hull & Rothenberg (SMJ, 2008)	n=69 firms with all data available from 1998-2001	regression; cross-sectional	Corporate Social Performance (CSP)	All 8 dimensions; weighted (categories with more subcategories receiving proportionately greater weight); Summed	CSP most strongly affects performance in low innovation firms and in industries with little differentiation
Choi & Wang (SMJ, 2009)	n = 4,113 firm-year observations; 518 firms, 11 years (1991-2001)	first-order autoregressive model; firm fixed effects with adjustment	Stakeholder relations	5 dimensions: employee relations, diversity, community relations, the natural environment, product safety/quality. Sum of concerns and strengths for each dimension separately; aggregate computed as average of 5 dimensions	Good stakeholder relations are positively associated with the persistence of superior financial performance and negatively related to with the persistence of inferior financial performance; when disaggregated, employee relations and product quality most critical to persistent superior performance , diversity and product quality help in overcoming inferior financial performance more quickly
Godfrey, Merrill & Hansen (SMJ, 2009)	n=160 firms with data from 1991-2002	event study	CSR Participation: ICSR + TCSR (Institutional vs. Technical CSR)	6 dimensions (community, corporate governance, employee relations, environment, diversity, product quality); Binary - CSR participation = 1 for any positive item and zero otherwise; ICSR participation = 1 if positive item for any community or diversity dimension, 0 otherwise; TCSR participation = 1 positive item for governance, employee relations or product, zero otherwise. Single CSR negative level score sum of total negative items across 6 dimensions	Institutional CSR ("aimed at secondary stakeholders or society at large) provides insurance like benefit, with participation in Technical CSR (activities targeting a firm's trading partners) yields no benefits.

Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Dependent Variable					
Johnson & Greening (AMJ, 1999)	n= 252 firms; 1991-1993	SEM	Corporate Social Performance (CSP): People dimension vs. product quality dimension	split 5 dimensions into 2: people dimension (community, employee relations, and women and minorities ratings) and product quality dimension (product quality and natural environment ratings).	Pension fund equity positively related to both a people and a product quality dimension of CSP, but mutual and investment bank funds exhibited no direct relationship with CSP. Outside director representation positively related to both CSP dimensions. Top management equity positively related to the product quality dimension but unrelated to the people dimension of CSP
McGuire, Dow & Argheyd (JBE, 2003)	n=374 firms; 1999	regression; cross-sectional	Corporate Social Performance (CSP)	4 dimensions: employee, community, product, environmental; Strengths and weaknesses separate	Incentives have no significant relationship with strong social performance. Salary and long-term incentives have a positive association with weak social performance
Deckop, Merriman & Gupta (JOM, 2006)	n=313 firms; 2000-2002	correlation, regression, cross-sectional	Corporate Social Performance (CSP)	6 dimensions: employee relations, product quality and safety, community relations, natural environment, human rights, and diversity; Summed (0/1 scale)	Short-term CEO pay focus was negatively related to CSP, whereas a long-term focus was positively related to CSP
Strike, Bansal & Gao (JIBS, 2006)	n=2,442 observations (222 firms x 10 years - 1993-2003)	time-series cross-sectional data analysis; general least-square (GLS)	Corporate Social Responsibility and Corporate Social Irresponsibility	7 qualitative categories: The values of strengths were summed to represent CSR, and the values of concerns were summed to represent CSiR (0,1 data)	Significant, positive linear relationship between international diversification and CSR and CSiR

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Dependent Variable (cont'd)					
Waldman, Siegel & Javidan (JOMS, 2006)	n=56 firms (1991-1996)	regression	Corporate Social Responsibility: Strategic CSR vs. Social CSR	8 dimensions: Strategic CSR was indicated by environmental, product quality, other, employee relations, and military; Social CSR was represented by the community and diversity indicators; strengths and weaknesses Summed (-2 to +2 scale)	CEO intellectual stimulation (but not CEO charismatic leadership) is significantly associated with 'strategic' CSR
David, Bloom & Hillman (SMJ, 2007)	n=218 firms (1,307 shareholder proposals); 1992-1998	HLM, but report OLS regression results	Corporate Social Performance (CSP)	5 dimensions: community, diversity, employee relations, environment, product quality; Summed	Shareholder proposal activism reduces CSP; managers are more likely to settle proposals filed by 'salient' shareholders (i.e., those with power, legitimacy, and urgency), Settlement with salient shareholders, however, also reduces CSP.
Shropshire & Hillman (B&S, 2007)	n=158 firms, 1,083 firm-year observations (1992-1999)	logistic regression	Stakeholder Management	5 dimensions: employee relations, community, diversity, environmental impact and product safety/quality; Summed (-2 to +2 scale) and then measure of significant change dummy 1/0 if +/-2 change in aggregate KLD score	An industry shift in SM increases the likelihood of significant change in focal firm SM; organizational age, size, risk increase likelihood of significant change in SM; level of managerial discretion is positively associated with significant change in SM; owner-manager controlled firms less likely to experience broad shifts in SM; CEO succession does not increase likelihood of SM change

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Dependent Variable (cont'd)					
Chen, Patten & Roberts (JBE, 2008)	n=384 firms; 1998-2000 (1,152 observations)	chi-squared statistics; regression	Corporate Social Performance (CSP)	three dimensions separately and summed (employee relations, environment, and product safety); weaknesses only	Firms with worse social performance in environmental and product safety areas (but not employee relations) are more likely to make charitable contributions and their giving is larger than better performers
Slater & Dixon-Fowler (JBE, 2008)	n= 393 firms (& CEOs), 2004	regression, cross-sectional	Corporate Social Performance (CSP)	5 dimensions: employee relations, community, diversity, environmental impact and product safety/quality; both summed (-2 to +2 scale) and separate strengths and weaknesses	CEO international assignment experience positively related to CSP, moderated by functional background (marketing & sales) both total and strengths; not related to negative CSP
Kacperczyk (SMJ, 2009)	n=878 firms; 1991-2002	random effects logistic regression	Corporate Attention to Stakeholders	Strengths across 5 dimensions: community, minorities, employees, the naturalenvironment, and customers; Use binary DV = 1 if firm has been rated as having at least one strength across the five dimensions, 0 otherwise; Also done for each dimension separately	An exogenous increase in takeover protection leads to highercorporate attention to community and the natural environment, but has no impact on corporate attention to employees, minorities, and customers. Additional analyses show that firms that increase their attention to stakeholders experience an increase in long-term shareholder value

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Dependent Variable (cont'd)					
Bear, Rahman & Post (JBE, 2010)	n= 51 firms (2009)	OLS regression	CSR	Used KLD institutional strengths (community, diversity) and technical strengths (product, government and employee issues)	The number of women on the board has a positive relationship with CSR strength ratings
Chatterji & Toffel (SMJ, 2010)	n=598 firms (1999-2004) = 2,412 firm year observations	OLS regression with fixed effects	Environmental Ratings	Only Environmental category: initial ratings poor (only concerns); initial ratings good or mixed (either only strengths, mixed strengths and concerns or no strengths or concerns)	Firms that initially received poor KLD ratings subsequently improved their environmental performance more than other firms, and this difference is driven by firms in highly regulated industries and by firms with more low-cost opportunities to exploit.
Fernández-Kranz & Santaló (JEMS, 2010)	n=6,206 firm year observations (3,630 firms unbalanced panel: 1994-2005)	regressions	CSR Performance	Difference between KLD Strengths and Concerns across all areas (56 CSR ratings)	Firms in more competitive industries have better social ratings
Manner (JBE, 2010)	n=650 firms, (&CEOs) 2006	regression (negative binomial & poisson); cross-sectional	Corporate Social Performance (CSP)	7 dimensions: employee relations, community, diversity, natural environment, human rights, product and corporate governance; both summed and separate strengths and weaknesses	CEOs with bachelor degrees in humanities, with a breadth of career experience and who are female are positively related to KLD strengths; CEOs with a bachelor degree in economics are negatively related to KLD strengths; CEO characteristics not related to KLD weaknesses

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Dependent Variable (cont'd)					
Padgett & Galan (JBE, 2010)	3 models (1991-2007): 5,799 obs. and 1,217 firms, 2,724 obs. and 575 firms (manuf. only) and, 3,075 obs. and 642 firms (non manuf.)	regression (panel data; fixed effects)	CSR	Same as Hillman & Keim (2001); changed 0/1 to -2 to +2 scale; also used log of sum of strengths +1 for robustness	R&D intensity positively affects CSR; this relationship is significant in manufacturing industries, but non-significant in non-manufacturing industries
Slater & Dixon-Fowler (AMLE, 2010)	n= 416firms (& CEOs), 2004	ANCOVA	Corporate Environmental Performance (CEP)	KLD strengths and weakness for environmental category: composite score	Positive relationship between CEOs with MBAs and CEP
Fong (JBR, 2010)	n=835 observations between 194 CEOs in 19 industries (1991-1999)	HLM	Stakeholder Management	KLD strengths and weaknesses summed	When a CEO is overpaid, SM increases; when a CEO is underpaid, SM decreases
CSR as Other					
Mattingly & Berman (B&S, 2006)	n= 293 firms; 5 years of data 1998-2002	EFA, principal components	Corporate social action	12 measures from 6 social issues: communities, diversity, employee relations, natural environment, product safety/quality, corporate governance; Strengths and Weaknesses separate (normalized)	Find four distinct latent constructs underlying KLD database (institutional strength/weakness; technical strength/weakness); positive and negative social action are both empirically and conceptually distinct constructs and should not be combined in future research

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Study	Sample Size and Timing	Methods	Construct	Operationalization	Main Findings
CSR as Other (cont'd)					
Garcia-Castro, Arino & Canela (JBE, 2010)	n=658 firms; 1991-2005	OLS regression, fixed effect with instrumental variable	Social Performance	5 dimensions: employee relations, product issues, community relations, diversity, environmental issues: Strengths - Weaknesses; all given equal weight	The endogeneity of social strategic decisions could be driving most of the empirical findings on the effect of social performance on financial performance

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APPENDIX B: KLD Dimensions and Items

Category	Definition
Community	
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 non-traditional 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.
Non-US Charitable Giving (COM-str-F)	The company has established substantial, innovative charitable giving programs outside the U.S. In 2002 KLD stopped assigning strengths for Non-U.S. charitable giving in the Non-U.S. category, companies with exemplary giving programs outside the U.S. are tracked in the Community area.
Other Strength (Com-str-X)	The company has an exceptionally strong volunteer program, in-kind giving program, or other particularly strong community program.

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Category	Definition
Corporate Governance	
Limited Compensation (CGOV-str-A).	The company has recently awarded notably low levels of compensation to its top management or its board members. The limit for a rating is total compensation of less than $500,000 per year for a CEO or $30,000 per year for outside directors. In 1999 the threshold rose to its current level from $400,000 and $25,000, which represented a 1997 rise from $200,000 and $15,000.
Ownership Strength (CGOV-str-C)	The company owns between 20% and 50% of another company KLD has cited as having an area of social strength, or is more than 20% owned by a firm that KLD has rated as having social strengths. When a company owns more than 50% of another firm, it has a controlling interest, and KLD treats the second firm as if it is a division of the first.
Diversity	
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.

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Category	Definition
Employee Relations	
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.
Health and Safety Strength. (EMP-str-G)	The company is noted by the US Occupational Health and Safety Administration for its safety programs. KLD began assigning strengths for this issue in 2003.
Other Strength (EMP-str-X)	The company has a good employee safety record or demonstrates other noteworthy commitments to its employees' well being.
Environment	
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.

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Category	Definition
Environment (cont'd)	
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.
Human Rights	
Positive Record in South Africa (HUM-str-A)	The company's social record in South Africa is noteworthy. KLD only assigned strengths in this category in 1994 and 1995.
Indigenous Peoples Relations (HUM-str-D)	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.
Labor Rights Strength (HUM-str-G)	The company has outstanding transparency on overseas sourcing disclosure and monitoring, or has particularly good union relations outside the U.S. KLD began assigning this strength in 2002.
Other Strength (HUM-str-X)	The company's non-U.S. operations have been praised for their community relations, employee relations, environmental impact, or product innovation.

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Category	Definition
Product	
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)	No definition

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APPENDIX C: Representative Sample of Studies Using Demographic Proxies for Managerial Cognitions

Study	Variable	Method of Measurement	Operationalization	Main Findings
CEO WORLDVIEW				
Tetlock (2000)	Ideological worldview	Survey Questionnaire	Multiple item scale including questions such as: "overall, do you consider yourself to be a liberal or conservative?", "it is a bad idea to mix business goals with concerns for social justice", "we need government to protect us from the damage to the natural environment that results from unregulated markets"	Sharp cleavages in the stakeholder/shareholder debate reflected in political sympathies; egalitarians more likely to endorse accountability to stakeholders, conservatives more likely to endorse an accountability regime centered around shareholders.
Chattopadhyay et al. (1999)	Executive beliefs	Survey	Normative belief and cause-effect belief statements	Beliefs of upper echelon executive not related to functional background but are related to the beliefs of other members of the organization's upper echelon team
Nadkarni & Barr (2008)	Managerial cognition (attention focus and causal logic)	Content Analysis	Centrality of concepts within letters to shareholders (LTS); proactive vs. deterministic environment-strategy logics	Managerial cognition (attention and causal logic) mediates the relationship between industry velocity and the speed of strategic response
Kaplan (2008)	Managerial cognition (attention focus)	Content Analysis	Frequency of word count in LTS	CEO attention to a new technology is associated with subsequent increases in a firm's investment in that technical domain
Dennis et al. (2009)	CEO attitude, perceived pressures, moral obligation, self-identity	Survey	Scale items	Economic attitude, political pressure, moral obligation and perceived control over philanthropy not related to corporate philanthropy

Study	Variable	Method of Measurement	Operationalization	Main Findings
CEO FUNCTIONAL EXPERIENCE				
Roth (1995)	Functional Experience	Survey Questionnaire; cluster analysis	Functional areas of your career divided into 4 clusters: broad-based, marketing management, technical management, core business cluster	No support that a generalized functional background contributes more to firm performance in cases of high levels of international interdependence.
Thomas & Simerly (1994)	Functional Background	Archival Data	Output (marketing, R&D) vs. throughput experience (finance, engineering, manufacturing)	High CSP firms have significantly greater proportion of executives with backgrounds in output functions; Low CSP firms have a significantly greater proportion of executives in throughput functions.
Hermann & Datta (2003)	Functional Background	Archival Data	Output (sales/marketing, product R&D and entrepreneurship) vs. throughput (production, operations, finance, accounting, data processing, IS and process R&D)	No relationship between TMT functional heterogeneity and expansiveness of firm's global strategic posture
Beyer et al. (1997)	Functional Experience	Survey as part of experiment	How many years of work experience divided by percentage by area; Collapsed into 7 areas: finance/accounting, HR, production/operations, IS, marketing/sales, R&D, general management	Amount of experience in a functional area unrelated to that functional area being represented in managers' belief structures or perceptions
Beyer et al. (1997)	Breadth of Functional Experience	Survey as part of experiment	Based on Walsh (1988) formula: square root of (the sum of the number of years worked in a particular functional area divided by the total number of years of work experience) squared	Managers' information processing only somewhat influenced by functional experience - directs attention away from unrelated areas rather toward related areas; The more restricted the observational goals of decision makers, the more selective their perceptions will be
Geletkanycz & Black (2001)	Functional Experience	Survey	Exposure to 8 functional disciplines: finance, accounting, HR, production/operations, law/general counsel, marketing/sales, R&D, general management	Experience in a functional track is positively related to executive commitment to the status quo (CSQ)

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Study	Variable	Method of Measurement	Operationalization	Main Findings
CEO FUNCTIONAL EXPERIENCE (cont'd)				
Geletkanycz & Black (2001)	Functional Diversity	Survey	Total number of different functional areas respondents reported to have worked over the course of their careers	Functional diversity is negatively related to CSQ
Chattopadhyay et al. (1999)	Functional Background	Survey	Number of years executive has spent in each of 8 major functional areas: general administration, personnel, production and operations, R&D, finance, accounting, marketing and sales.	Functional background not related to executive beliefs
Carpenter & Fredrickson (2001)	Functional Background	Archival Data	Percentage in marketing, distribution, sales, R&D, production, engineering, finance/accounting, law, or general.	TMT functional heterogeneity not related to expansiveness of firm's global strategic posture
CEO EDUCATIONAL EXPERIENCE				
Wiersema & Bantel (1992)	Educational level; Educational specialization	Archival Data	Number of years of schooling; specialization of the highest obtained university degree categorized as arts, sciences, engineering, business/economics, law.	Firms most likely to undergo strategic change have top management teams characterized by relatively short organizational tenure, high educational level and academic training in the sciences.
Herrmann & Datta (2003)	Education level	Archival Data	Number of years of schooling (7 point scale: 1 -high school, 2-attended college, 3-undergraduate degree, 4-attended graduate school, 5 -master's degree, 6- attended doctoral program, 7 -doctorate	Educational level of CEO successors not related to preference mode of foreign market entry
Carpenter & Fredrickson (2001)	Educational Background	Archival Data	Used Wiersema and Bantel	TMT educational heterogeneity positively related to expansiveness of firm's global strategic posture
Geletkanycz & Black (2001)	Educational Level	Survey	Hold an MBA	No support that MBA degree is negatively related to CSQ or that MBA degree moderates relationship between functional experience and CSQ

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Study	Variable	Method of Measurement	Operationalization	Main Findings
CEO INTERNATIONAL EXPERIENCE				
Roth (1995)	International Background	Survey Questionnaire	Likert scale on 2 questions: 1) experience in international function or in function with international responsibilities, 2) time spent on overseas assignments	CEOs with international experience abroad have a stronger positive impact on firm performance in the case of high international interdependence.
Herrmann & Datta (2003)	International Experience	Archival Data	Total number of years spent abroad on assignment, in higher education, and/or in a firm's international division	International experience of CEO successors positively associated with preference for full control foreign market entry mode
Carpenter & Fredrickson (2001)	International Experience	Archival Data	The percentage of team members' total years of experience accrued in international assignments.	international experience of TMT positively related to expansiveness of firm's global strategic posture
CEO TENURE				
Thomas & Simerly (1994)	Tenure	Archival Data	2 measures: 1) number of years in the organization, 2) number of years as CEO	CEOs of high CSP firms have longer tenures in the company than CEOs of low CSP firms. They have also been in the organization longer.
Wiersema & Bantel (1992)	Organizational tenure	Archival Data	Number of years in the organization; split into dummy variable low tenure/high tenure	Low average organizational tenure of TMT positively related to change in corporate strategy (diversification)
Herrmann & Datta (2003)	Position tenure	Archival Data	Number of years CEO has held that position	Position tenure of CEO successors positively associated with preference for full-control foreign market entry modes
Henderson, Miller & Hambrick (2006)	Tenure	Archival Data	Number of years a chief executive has been in office.	CEO tenure has inverted U shape relationship to firm performance in stable industries but in dynamic industries, CEO tenure and performance are negatively related (performance deteriorates immediately)

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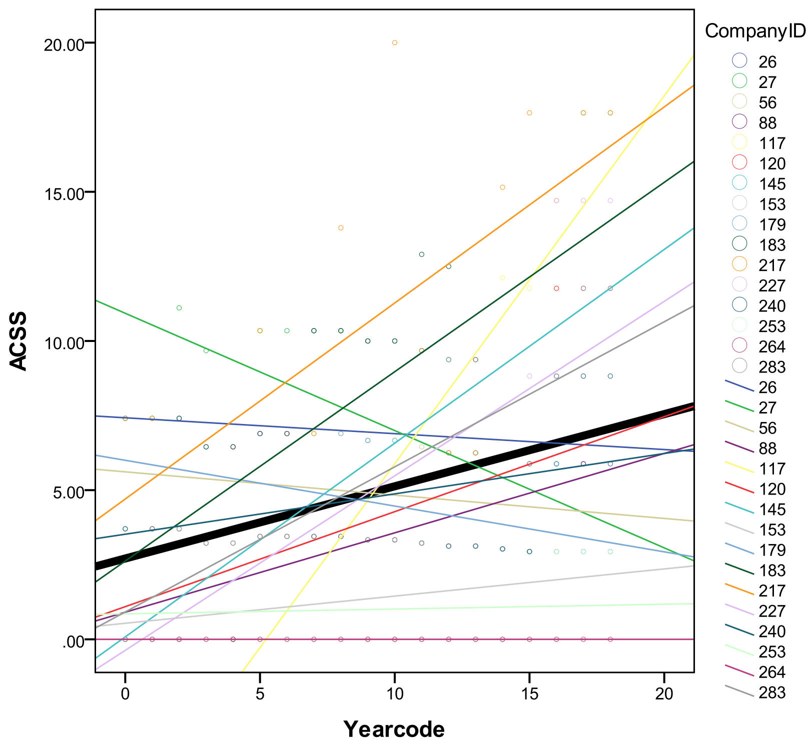
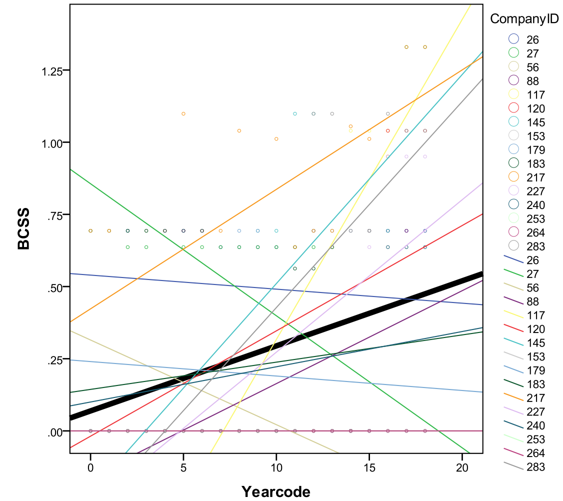
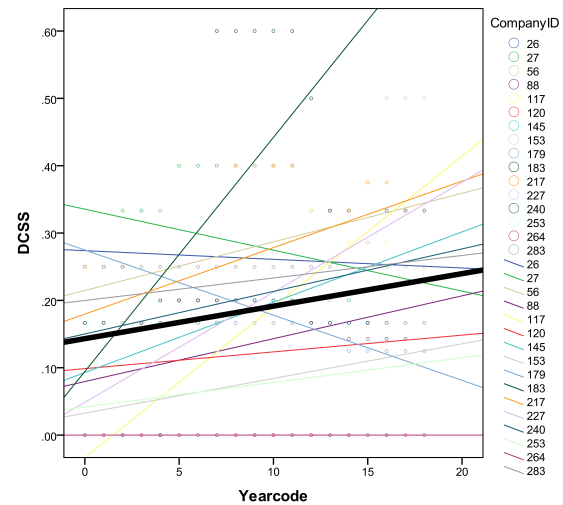
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry

Mining and Construction







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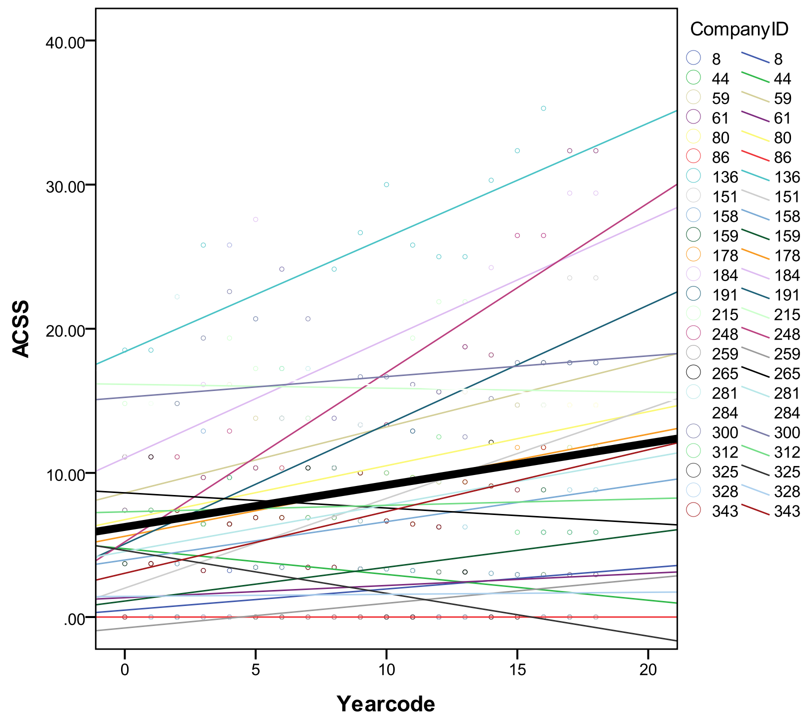
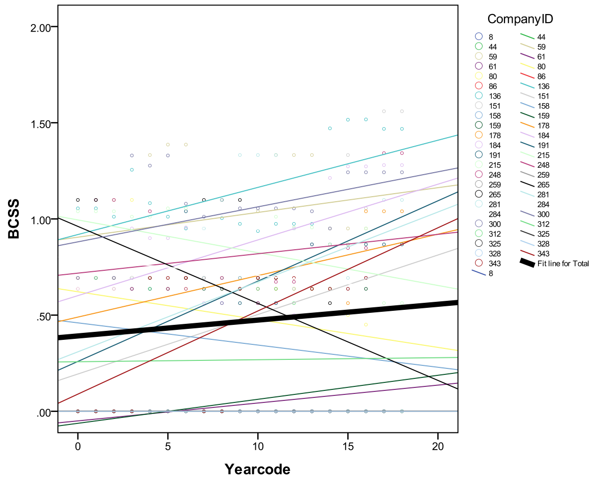
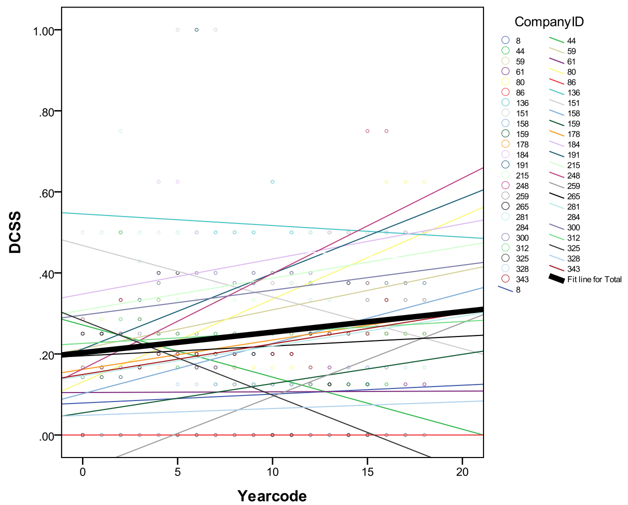
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Food, Textiles & Apparel







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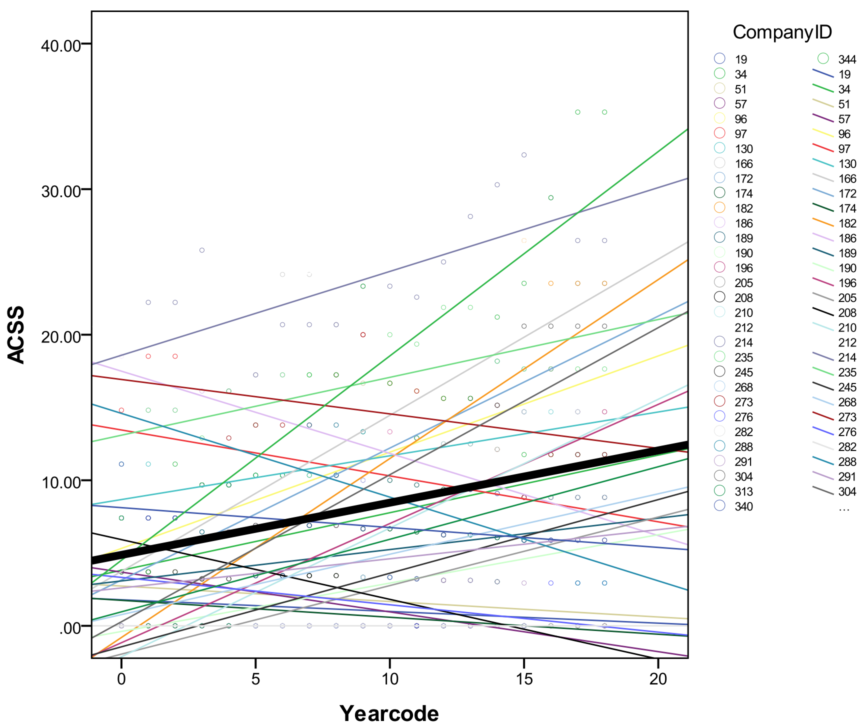
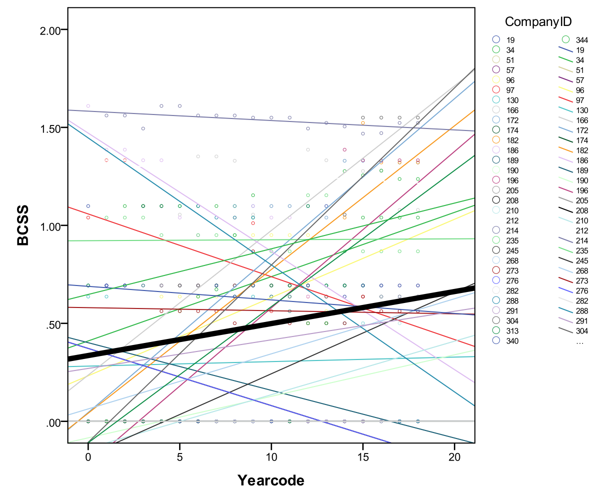
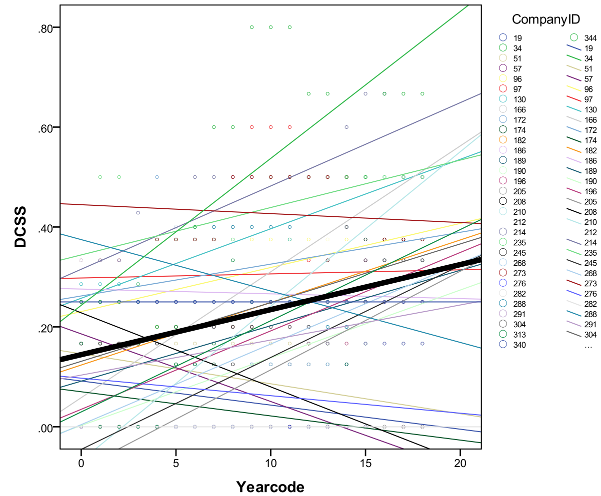
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Forest, Paper, Publishing







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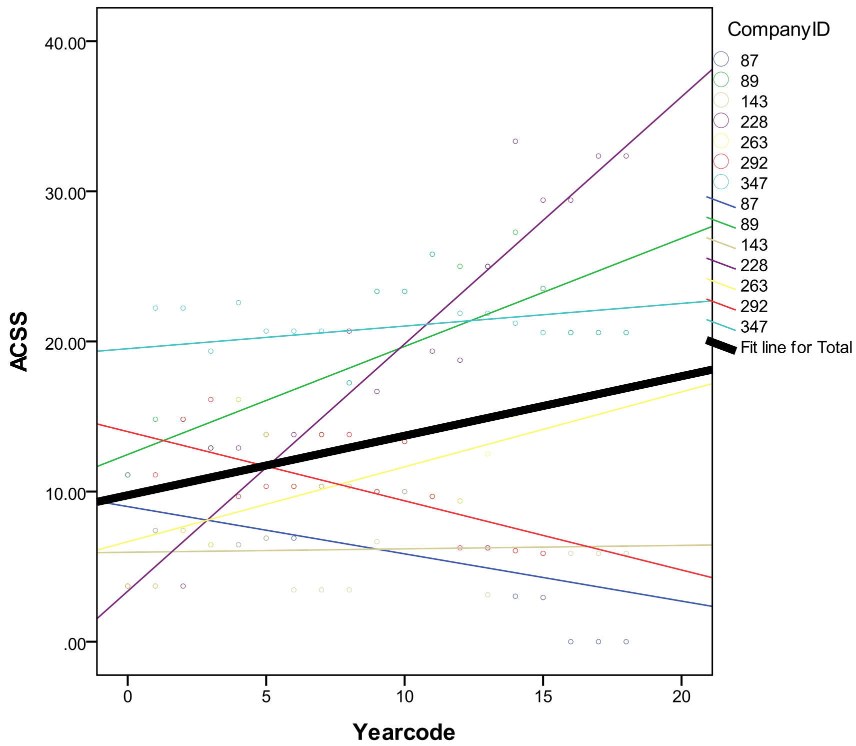
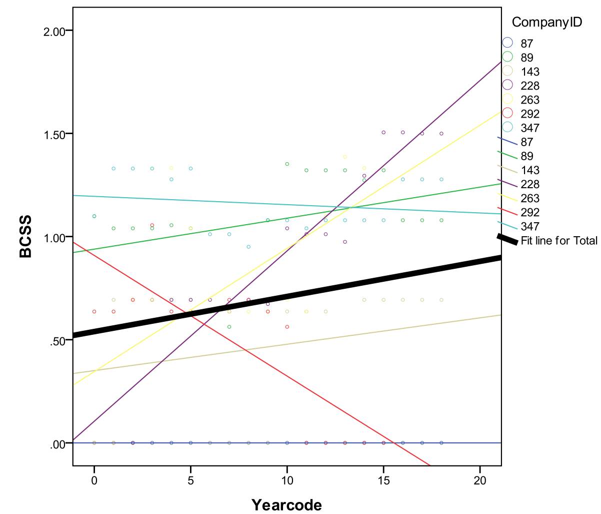
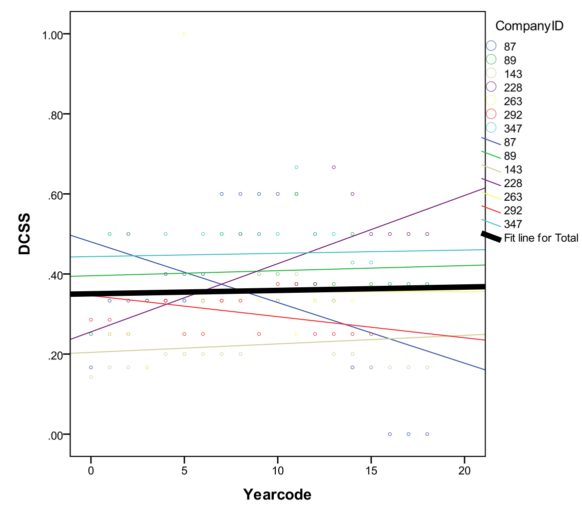
APPENDIX D: ACSS, BCSS and DCSS Growth Curves By Industry - Refining, Rubber & Plastic







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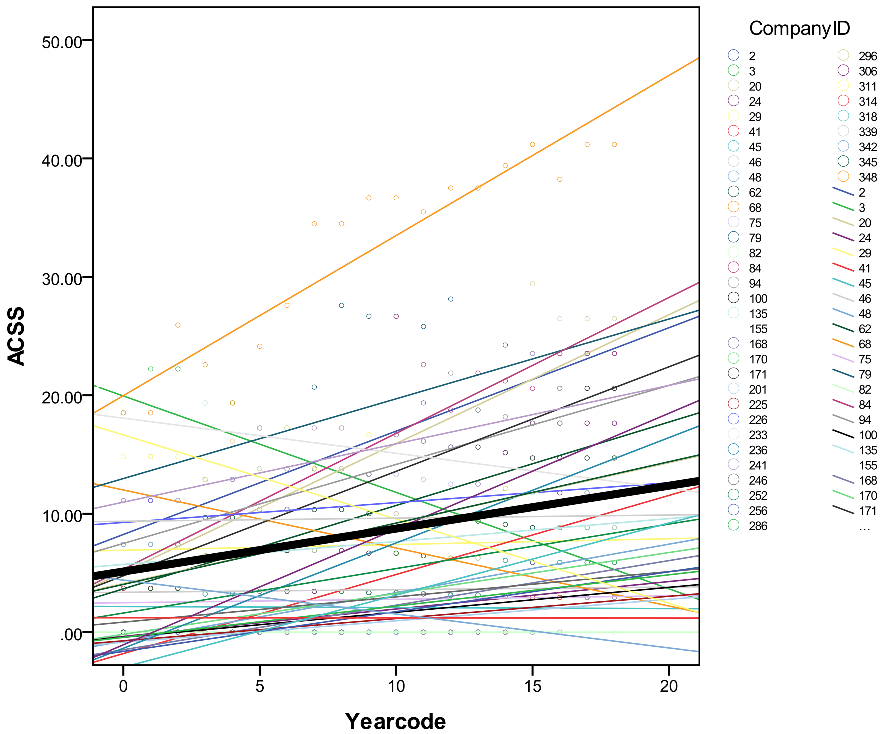
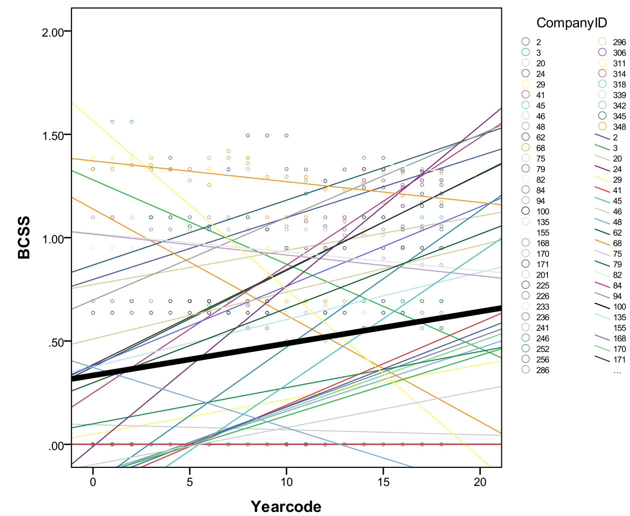
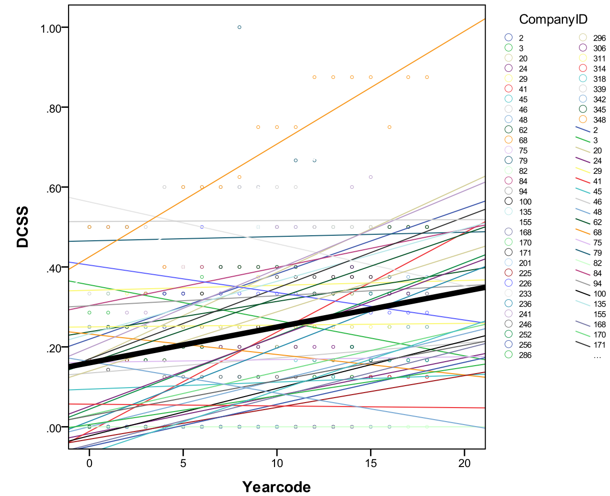
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Steel & Heavy Manufacturing







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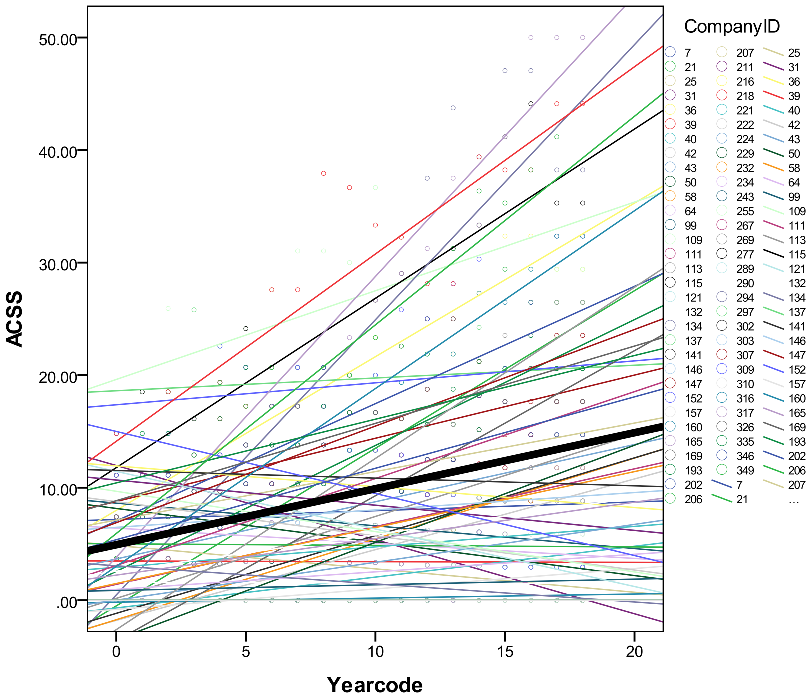
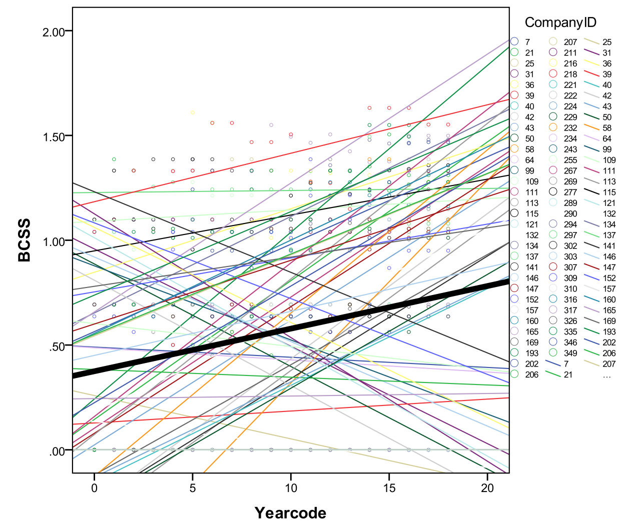
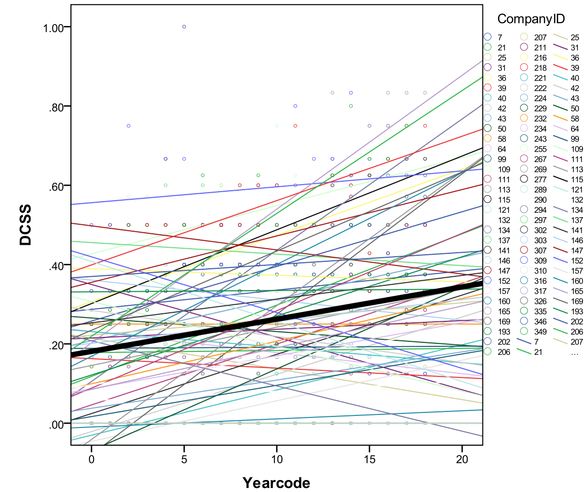
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Computers, Automotive, Aerospace







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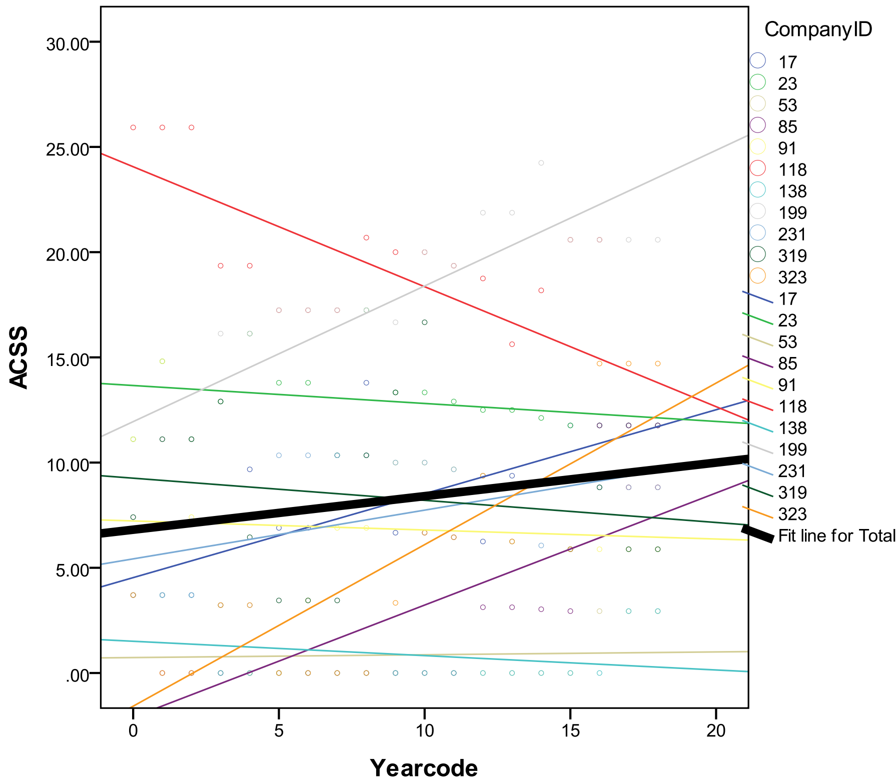
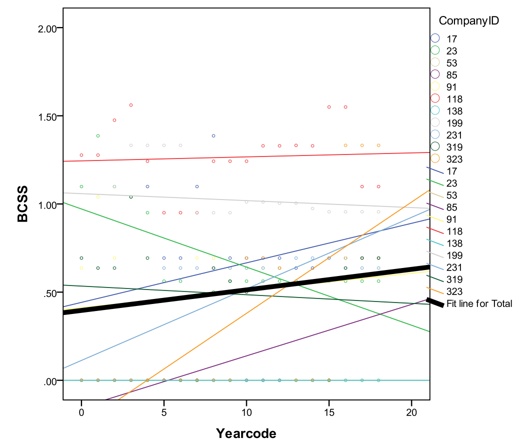
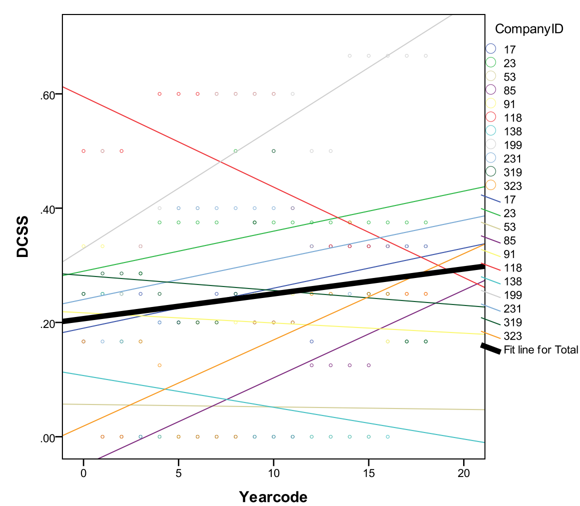
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Transportation







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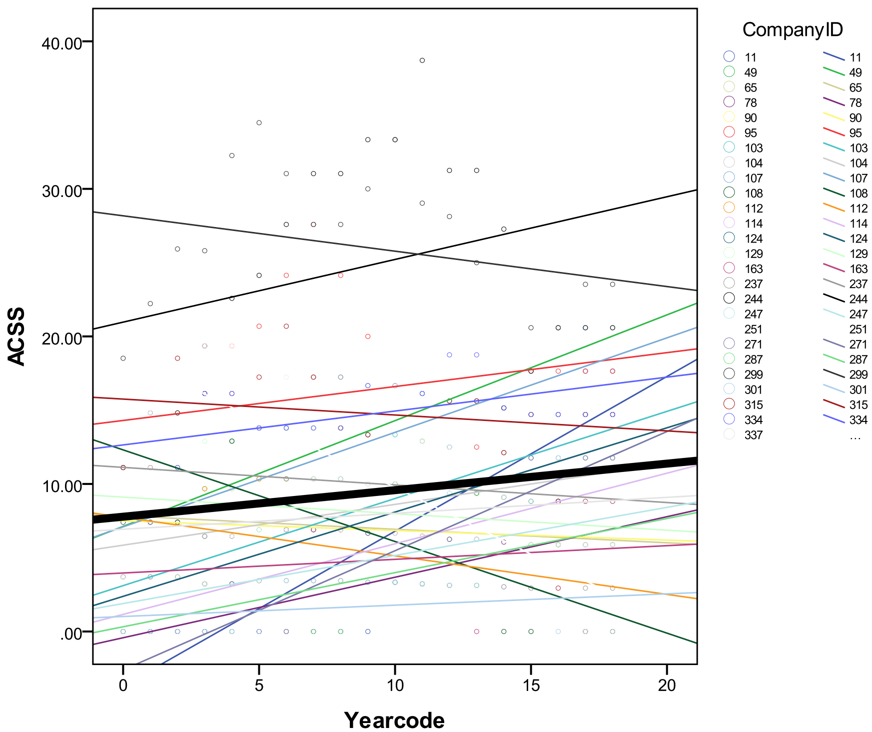
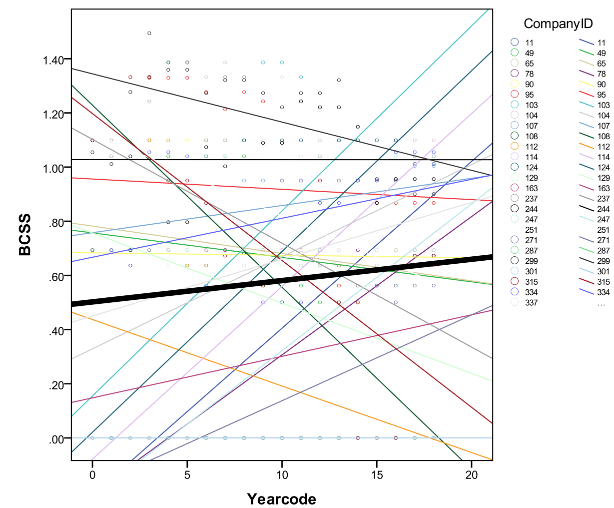
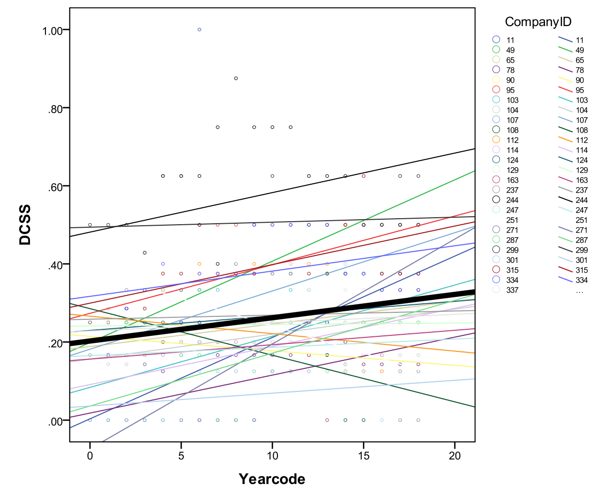
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Telephone/Utilities







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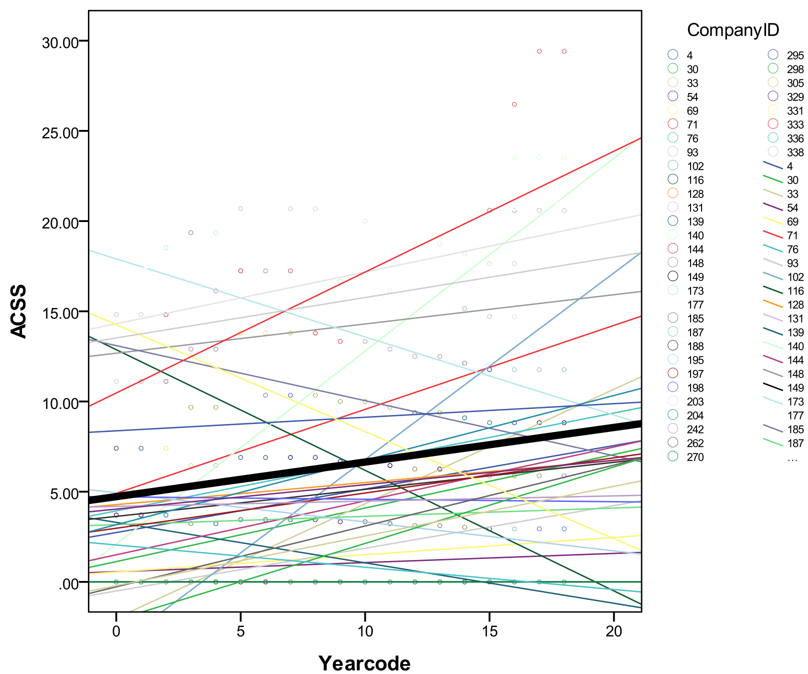
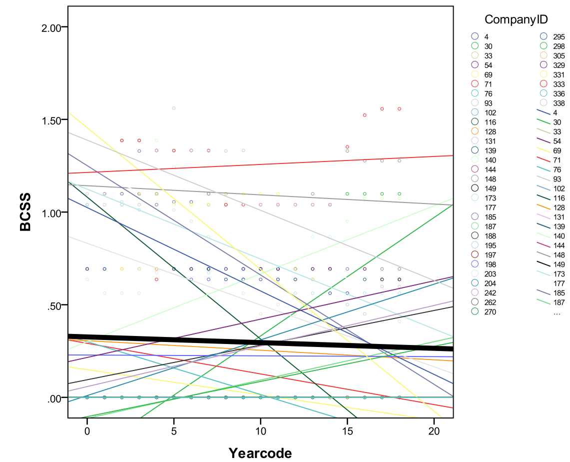
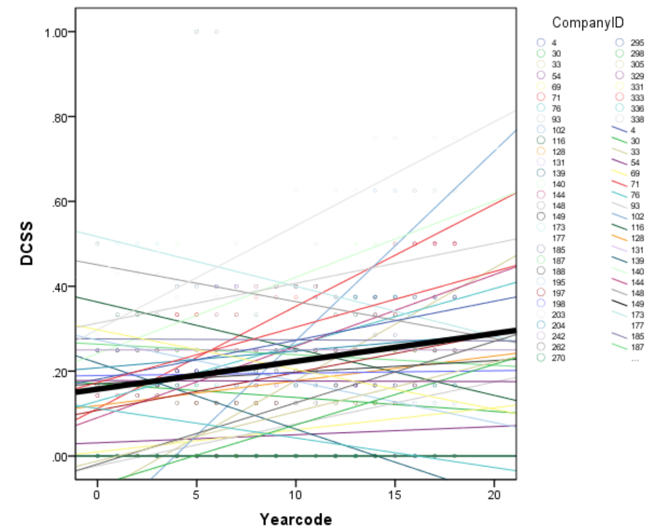
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry – Wholesale/Retail







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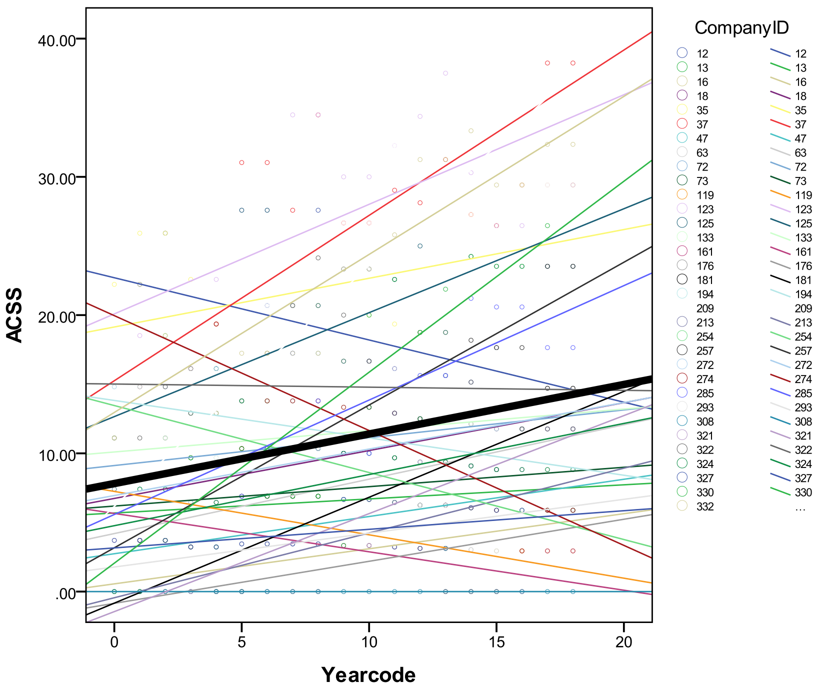
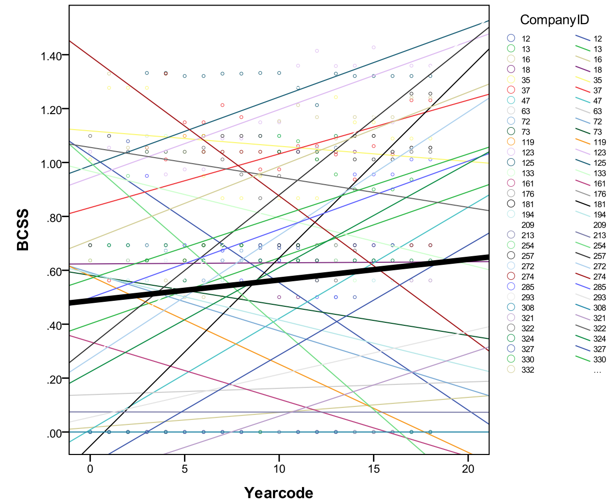
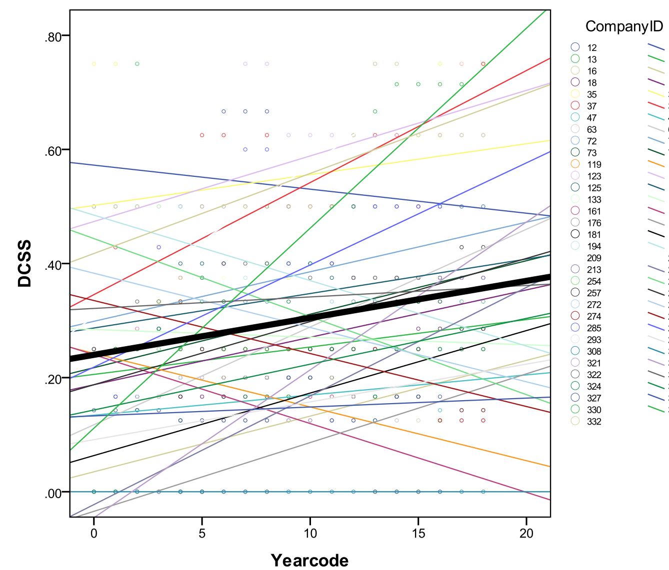
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Financial







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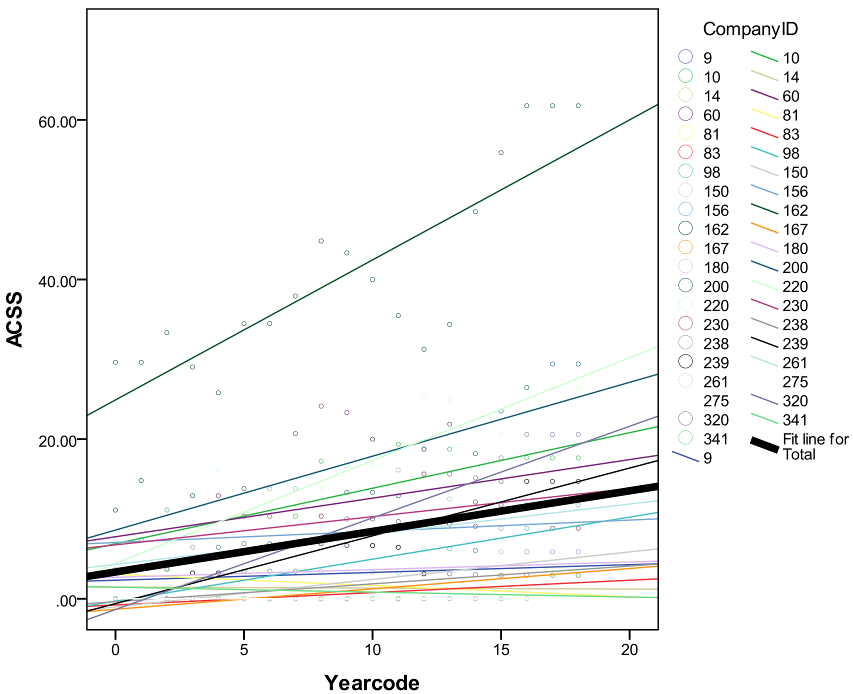
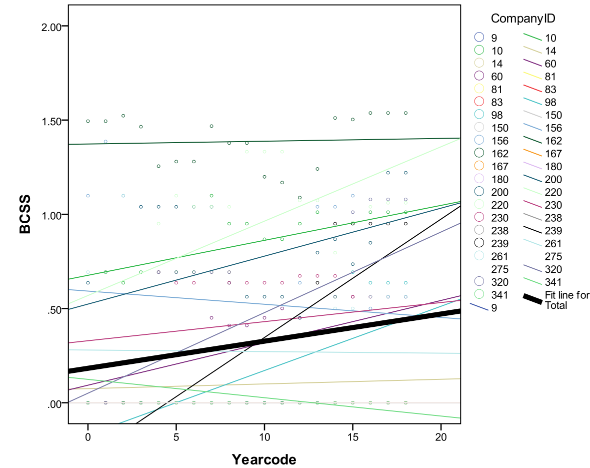
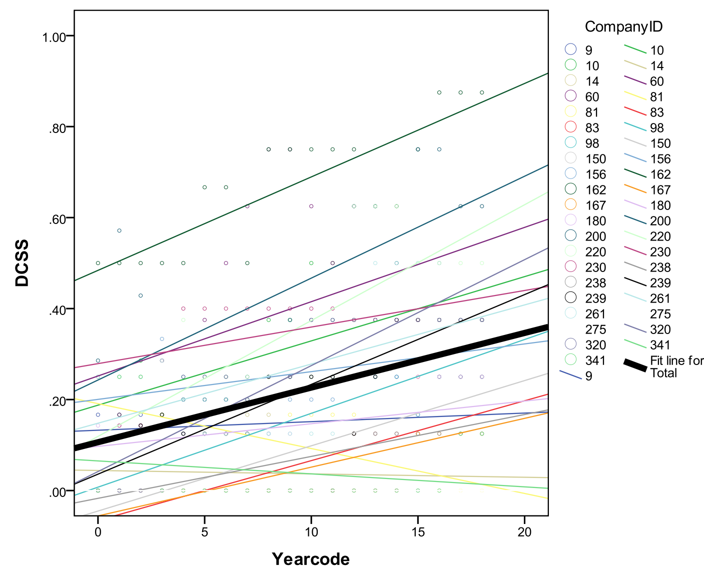
APPENDIX D: ACSS, BCSS and DCSS Growth Curves by Industry - Hotel, Entertainment & Service







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APPENDIX E: Growth in Mean Levels and Standard Deviations over Time by Industry

BCSS

Industry/Year		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Avg.
Mining/Construction	Mean	0.15	0.18	0.19	0.13	0.17	0.24	0.21	0.12	0.19	0.18	0.19	0.22	0.34	0.23	0.26	0.39	0.56	0.65	0.64	0.27
	St. Dev	0.30	0.32	0.32	0.28	0.31	0.38	0.33	0.26	0.35	0.30	0.34	0.36	0.42	0.37	0.41	0.42	0.45	0.55	0.57	0.40
	N	14	15	14	15	16	16	16	16	16	15	16	16	16	16	16	14	14	14	13	
Food/Textiles/Apparel	Mean	0.34	0.35	0.37	0.49	0.56	0.46	0.46	0.42	0.39	0.50	0.49	0.49	0.44	0.41	0.44	0.55	0.58	0.55	0.58	0.46
	St. Dev	0.42	0.44	0.44	0.46	0.45	0.47	0.47	0.41	0.42	0.43	0.43	0.47	0.45	0.45	0.46	0.51	0.50	0.61	0.62	0.46
	N	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	20	19	
Forrest/Paper/Publishing	Mean	0.31	0.34	0.35	0.36	0.43	0.43	0.45	0.48	0.56	0.55	0.48	0.45	0.44	0.44	0.55	0.64	0.70	0.60	0.61	0.48
	St. Dev	0.49	0.52	0.54	0.54	0.53	0.49	0.50	0.48	0.50	0.50	0.47	0.48	0.50	0.48	0.50	0.55	0.52	0.57	0.57	0.52
	N	27	30	30	31	32	32	32	32	32	32	31	30	32	32	32	30	27	28	28	
Chemicals/Pharma	Mean	0.34	0.46	0.44	0.57	0.59	0.59	0.60	0.59	0.61	0.59	0.60	0.68	0.63	0.62	0.66	0.71	0.77	0.83	0.80	0.61
	St. Dev	0.53	0.49	0.50	0.52	0.54	0.51	0.56	0.55	0.54	0.53	0.53	0.53	0.55	0.52	0.51	0.52	0.55	0.54	0.54	0.53
	N	32	36	37	38	38	38	38	38	38	38	37	36	38	38	38	37	35	34	32	
Refining/Rubber/Plastic	Mean	0.40	0.53	0.64	0.79	0.81	0.78	0.52	0.51	0.52	0.59	0.77	0.66	0.74	0.68	0.81	0.77	0.91	0.91	0.91	0.69
	St. Dev	0.53	0.54	0.49	0.42	0.46	0.42	0.38	0.37	0.37	0.44	0.44	0.51	0.54	0.65	0.59	0.65	0.59	0.59	0.59	0.49
	N	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	5	5	5	
Steel/Heavy Manufacturing	Mean	0.34	0.38	0.36	0.43	0.45	0.43	0.43	0.42	0.44	0.41	0.44	0.45	0.41	0.46	0.57	0.56	0.61	0.69	0.69	0.47
	St. Dev	0.51	0.52	0.50	0.54	0.54	0.51	0.51	0.53	0.53	0.48	0.53	0.51	0.47	0.49	0.56	0.57	0.52	0.50	0.50	0.52
	N	38	41	41	41	41	41	41	41	41	40	37	38	40	40	40	40	40	39	39	
Computers/Auto/Aero	Mean	0.30	0.37	0.38	0.47	0.52	0.51	0.55	0.51	0.56	0.56	0.57	0.61	0.59	0.59	0.66	0.69	0.72	0.72	0.72	0.56
	St. Dev	0.39	0.44	0.45	0.46	0.46	0.53	0.53	0.48	0.49	0.48	0.49	0.50	0.53	0.52	0.56	0.57	0.57	0.57	0.56	0.51
	N	57	58	59	60	62	62	62	60	60	60	61	61	61	60	60	58	56	56	55	
Transportation	Mean	0.44	0.45	0.45	0.45	0.48	0.38	0.38	0.39	0.55	0.48	0.54	0.56	0.55	0.42	0.47	0.45	0.70	0.67	0.67	0.50
	St. Dev	0.50	0.57	0.57	0.64	0.58	0.48	0.48	0.47	0.51	0.43	0.41	0.45	0.44	0.49	0.50	0.54	0.47	0.40	0.40	0.48
	N	10	11	11	11	11	11	11	11	11	11	11	10	10	10	9	10	11	11	11	
Telephone/Utilities	Mean	0.32	0.46	0.44	0.59	0.58	0.57	0.68	0.68	0.59	0.59	0.62	0.60	0.68	0.58	0.49	0.48	0.59	0.67	0.67	0.57
	St. Dev	0.44	0.45	0.49	0.59	0.51	0.53	0.45	0.51	0.46	0.44	0.48	0.46	0.40	0.42	0.41	0.39	0.43	0.39	0.39	0.46
	N	24	26	26	26	26	25	25	26	26	25	23	23	25	25	26	25	24	24	24	
Wholesale/Retail	Mean	0.27	0.26	0.33	0.37	0.39	0.36	0.37	0.34	0.29	0.26	0.27	0.27	0.23	0.21	0.24	0.24	0.28	0.35	0.35	0.30
	St. Dev	0.41	0.43	0.50	0.53	0.55	0.54	0.52	0.46	0.45	0.40	0.38	0.39	0.35	0.36	0.37	0.42	0.44	0.46	0.46	0.44
	N	34	35	37	37	36	36	36	36	37	36	37	34	38	38	37	34	33	32	32	
Financial	Mean	0.37	0.42	0.39	0.56	0.50	0.56	0.61	0.57	0.60	0.64	0.70	0.63	0.57	0.53	0.57	0.57	0.52	0.61	0.59	0.56
	St. Dev	0.42	0.48	0.46	0.47	0.48	0.40	0.43	0.43	0.43	0.42	0.43	0.48	0.47	0.49	0.46	0.48	0.49	0.51	0.52	0.46
	N	23	27	28	30	33	33	33	32	32	32	32	32	32	33	33	31	30	28	26	
Hotel/Entertainment/Services	Mean	0.22	0.28	0.22	0.21	0.25	0.26	0.26	0.31	0.31	0.25	0.24	0.25	0.25	0.32	0.37	0.50	0.49	0.48	0.48	0.31
	St. Dev	0.45	0.49	0.47	0.45	0.43	0.44	0.44	0.48	0.44	0.46	0.43	0.43	0.40	0.47	0.47	0.49	0.49	0.53	0.53	0.46
	N	18	20	20	20	21	21	21	21	21	21	21	20	21	20	20	19	19	19	19	
Yearly Averages	**Mean**	**0.31**	**0.37**	**0.37**	**0.45**	**0.47**	**0.47**	**0.48**	**0.47**	**0.48**	**0.48**	**0.49**	**0.50**	**0.48**	**0.47**	**0.52**	**0.56**	**0.61**	**0.64**	**0.63**	**0.49**
	St. Dev	**0.44**	**0.47**	**0.48**	**0.51**	**0.50**	**0.50**	**0.50**	**0.49**	**0.48**	**0.47**	**0.48**	**0.49**	**0.49**	**0.49**	**0.51**	**0.52**	**0.52**	**0.53**	**0.53**	**0.50**

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APPENDIX E: Growth in Mean Levels and Standard Deviations over Time by Industry

DCSS

Industry/Year		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Avg.
Mining/Construction	Mean	0.08	0.12	0.15	0.18	0.15	0.16	0.18	0.22	0.23	0.22	0.23	0.22	0.18	0.16	0.16	0.16	0.22	0.25	0.25	0.19
	St. Dev	0.10	0.11	0.11	0.09	0.10	0.11	0.09	0.16	0.17	0.17	0.17	0.18	0.14	0.12	0.12	0.11	0.14	0.13	0.13	0.13
	N	14	15	14	15	16	16	16	16	16	15	16	16	16	16	16	14	14	14	13	
Food/Textiles/Apparel	Mean	0.16	0.18	0.24	0.24	0.27	0.27	0.28	0.25	0.21	0.21	0.22	0.22	0.24	0.24	0.27	0.31	0.31	0.30	0.31	0.25
	St. Dev	0.16	0.15	0.21	0.15	0.17	0.22	0.26	0.20	0.12	0.15	0.17	0.16	0.17	0.18	0.19	0.19	0.19	0.20	0.19	0.18
	N	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	20	19	
Forrest/Paper/Publishing	Mean	0.14	0.15	0.16	0.15	0.17	0.19	0.23	0.23	0.23	0.24	0.25	0.26	0.23	0.23	0.25	0.27	0.32	0.31	0.30	0.22
	St. Dev	0.13	0.14	0.14	0.12	0.15	0.13	0.15	0.17	0.17	0.19	0.19	0.19	0.17	0.18	0.19	0.19	0.19	0.20	0.19	0.17
	N	27	30	30	31	32	32	32	32	32	32	31	30	32	32	32	30	27	28	28	
Chemicals/Pharma	Mean	0.17	0.20	0.22	0.22	0.24	0.24	0.24	0.25	0.26	0.28	0.29	0.31	0.30	0.32	0.37	0.35	0.37	0.39	0.39	0.28
	St. Dev	0.16	0.15	0.16	0.14	0.15	0.14	0.15	0.14	0.14	0.15	0.16	0.17	0.17	0.21	0.24	0.22	0.20	0.18	0.19	0.18
	N	32	36	37	38	38	38	38	38	38	38	37	36	38	38	38	37	35	34	32	
Refining/Rubber/Plastic	Mean	0.23	0.33	0.36	0.29	0.37	0.41	0.34	0.40	0.42	0.43	0.42	0.47	0.38	0.38	0.35	0.31	0.28	0.28	0.28	0.36
	St. Dev	0.05	0.13	0.14	0.08	0.11	0.27	0.10	0.14	0.14	0.12	0.10	0.15	0.09	0.16	0.16	0.14	0.20	0.20	0.20	0.15
	N	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	5	5	5	
Steel/Heavy Manufacturing	Mean	0.17	0.18	0.20	0.17	0.20	0.19	0.20	0.20	0.23	0.25	0.25	0.26	0.26	0.23	0.29	0.29	0.31	0.34	0.34	0.24
	St. Dev	0.18	0.17	0.17	0.14	0.17	0.19	0.19	0.19	0.23	0.21	0.21	0.21	0.21	0.22	0.19	0.19	0.18	0.19	0.19	0.20
	N	38	41	41	41	41	41	41	41	41	40	37	38	40	40	40	40	40	39	39	
Computers/Auto/Aero	Mean	0.14	0.17	0.19	0.20	0.24	0.23	0.24	0.25	0.26	0.28	0.27	0.27	0.25	0.27	0.29	0.30	0.31	0.32	0.32	0.25
	St. Dev	0.13	0.15	0.18	0.16	0.16	0.19	0.17	0.18	0.17	0.18	0.19	0.20	0.17	0.21	0.21	0.20	0.20	0.22	0.21	0.19
	N	57	58	59	60	62	62	62	60	60	60	61	61	61	60	60	58	56	56	55	
Transportation	Mean	0.26	0.25	0.19	0.18	0.20	0.20	0.22	0.24	0.25	0.27	0.28	0.24	0.23	0.24	0.27	0.26	0.29	0.29	0.29	0.25
	St. Dev	0.10	0.16	0.15	0.13	0.20	0.22	0.21	0.23	0.24	0.22	0.23	0.20	0.16	0.16	0.21	0.20	0.17	0.15	0.15	0.18
	N	10	11	11	11	11	11	11	11	11	11	11	10	10	10	9	10	11	11	11	
Telephone/Utilities	Mean	0.18	0.18	0.20	0.20	0.23	0.24	0.29	0.25	0.25	0.27	0.29	0.30	0.28	0.28	0.30	0.28	0.29	0.28	0.28	0.26
	St. Dev	0.12	0.13	0.13	0.13	0.16	0.16	0.21	0.16	0.19	0.15	0.17	0.15	0.13	0.15	0.15	0.15	0.14	0.17	0.17	0.16
	N	24	26	26	26	26	25	25	26	26	25	23	23	25	25	26	25	24	24	24	
Wholesale/Retail	Mean	0.15	0.15	0.17	0.17	0.20	0.27	0.24	0.19	0.18	0.20	0.20	0.22	0.20	0.21	0.25	0.28	0.28	0.29	0.30	0.22
	St. Dev	0.14	0.14	0.13	0.13	0.15	0.32	0.27	0.14	0.12	0.15	0.16	0.13	0.15	0.17	0.18	0.18	0.19	0.21	0.20	0.18
	N	34	35	37	37	36	36	36	36	37	36	37	34	38	38	37	34	33	32	32	
Financial	Mean	0.25	0.26	0.31	0.24	0.23	0.25	0.28	0.30	0.30	0.27	0.29	0.31	0.33	0.32	0.34	0.33	0.35	0.37	0.34	0.30
	St. Dev	0.21	0.21	0.24	0.15	0.15	0.16	0.16	0.19	0.20	0.15	0.15	0.16	0.17	0.21	0.21	0.19	0.20	0.21	0.19	0.19
	N	23	27	28	30	33	33	33	32	32	32	32	32	32	33	33	31	30	28	26	
Hotel/Entertainment/Services	Mean	0.10	0.16	0.15	0.13	0.15	0.16	0.16	0.18	0.19	0.20	0.22	0.22	0.26	0.26	0.27	0.31	0.32	0.32	0.32	0.21
	St. Dev	0.15	0.17	0.15	0.15	0.15	0.17	0.18	0.16	0.22	0.23	0.22	0.21	0.23	0.21	0.20	0.22	0.23	0.21	0.21	0.20
	N	18	20	20	20	21	21	21	21	21	21	21	20	21	20	20	19	19	19	19	
Yearly Averages	**Mean**	**0.16**	**0.18**	**0.20**	**0.19**	**0.22**	**0.23**	**0.24**	**0.24**	**0.24**	**0.25**	**0.26**	**0.27**	**0.26**	**0.26**	**0.29**	**0.29**	**0.31**	**0.32**	**0.32**	**0.25**
	St. Dev	**0.15**	**0.16**	**0.17**	**0.14**	**0.16**	**0.20**	**0.19**	**0.17**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**	**0.19**	**0.20**	**0.19**	**0.19**	**0.20**	**0.19**	**0.18**

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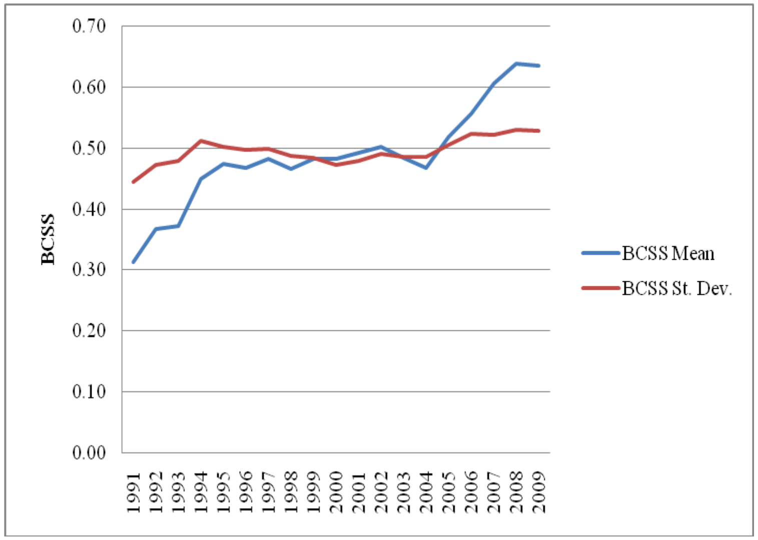
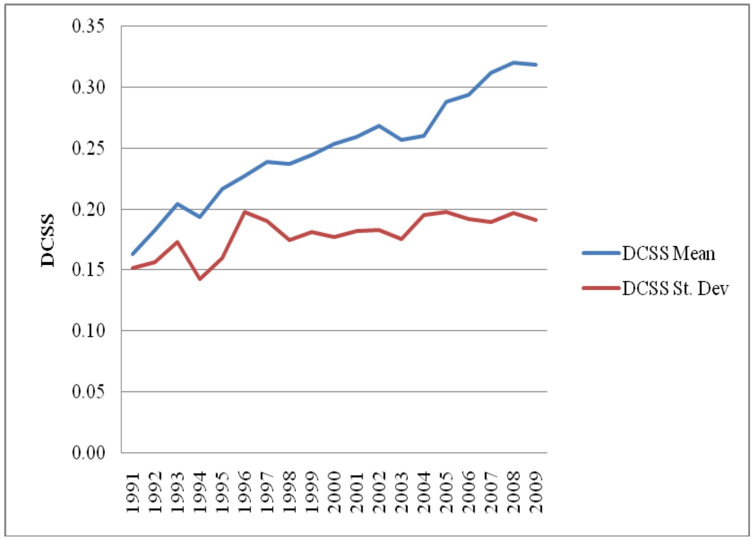
APPENDIX E: Growth in Mean Levels and Standard Deviation of over Time (Yearly Averages)





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CURRICULUM VITAE

Daina Mazutis

EDUCATION

Degree	University	Department	Year
PhD	University of Western Ontario	Richard Ivey School of Business	2011
MBA	University of Ottawa	Telfer School of Management	2004
BA	Carleton University	Mass Communications	1994

NOTABLE DISTINCTIONS

TRUDEAU SCHOLAR
Winner of a Pierre Elliott Trudeau Foundation Scholarship ($150,000)
Awarded yearly to only 15 social science and humanities doctoral students in all of Canada that are pursuing research on responsible citizenship, human rights or the natural environment.

OTHER HONOURS AND AWARDS

2011	ASAC, Strategy Division, Best Reviewer Award
2010	COLE Doctorate Dissertation Proposal Competition Winner, Duke University Fuqua/Coach K Center on Leadership and Ethics ($1,000)
2010	AOM, Social Issues in Management, Best Paper Award ($1,000)
2010-2011	Ontario Graduate Scholarship ($15,000, awarded)
2008-2010	Ivey Publishing: Top 10 Best Selling Case (RIM) for 2008-2009 & 2009-2010
2008-2010	SSHRC Doctoral Fellowship ($20,000/yr. for two years)
2008-2009	Ontario Graduate Scholarship ($15,000, awarded)
2006-2010	Richard Ivey School of Business Plan for Excellence ($5,500/yr. for four years)
2007	Society for Business Ethics Emerging Scholar Award ($300)
2007	ASAC, Strategy Division, Best PhD Student Paper Award
2006-2007	LNFC: Janis and Aina Vitols Memorial Scholarship ($4,000/yr. for two years)
2006	University of Ottawa School of Management Educators' Honour Roll
2004	University of Ottawa School of Management MBA Student Leadership Award
2003	Strategic Enrolment Management: Financial Aid and Awards Bursary ($2,500)
2002	Association of Professors of the University of Ottawa Merit Bursary ($500)
1994	Bachelor of Arts awarded with distinction
1994	Senate Medal for Outstanding Academic Achievement
1994	Peter Gerard Harris Memorial Award ($1,000)
1993	Claude Bissell Scholarship ($1,500)
1992	Gerhard Hertzberg Scholarship ($1,500)
1992	Hewlett-Packard (Canada) Calculator Award ($500)
1991	Frederick William Baldwin Scholarship ($1,500)
1991-1994	Deans' Honour List

REFEREED PUBLICATIONS

- Mazutis, D. 2010. Why zero is not one: Towards a measure of corporate social strategy, *Academy of Management Best Paper Proceedings*, Montreal, Quebec; Winner – Social Issues in Management Division Best Paper Award
- Mazutis, D. 2008. What is corporate deviance? Exploring negative and positive firm behavior, *Academy of Management Best Paper Proceedings*, Anaheim, California
- Mazutis, D. & Slawinski, N. 2008. Leading organizational learning through authentic dialogue, *Management Learning*, 39 (4): 437-455
- Crossan, M. & Mazutis, D. 2008. Transcendent Leadership, *Business Horizons*, 51(2):131-139

BOOK CHAPTERS

- Mazutis, D. 2011. "Authentic Leadership" in W.G. Rowe & L. Guerrero (Eds.), *Cases in Leadership (Second Edition)*, Thousand Oaks, CA: Sage Publications, p. 284-289
- Mazutis, D. 2011. Contributor in De Lange, D. (Ed.). *Research Companion to Green International Management Studies: A Guide for Future Research, Collaboration and Review Writing*, Edward Elgar Publishing, p. 75-80

MANUSCRIPTS IN PREPARATION

- Crossan, M., Mazutis, D., Seijts, G. & Gandz, J., It takes a village: Leadership and the development of character in business programs
- Crossan, M., Mazutis, D. and Seijts, G., In search of virtue: The role of virtue, character strengths and values in ethical decision making
- Mazutis, D., Corporate Social Strategy: Defining and testing a new typology
- Slawinski, N. & Mazutis, D., Responding to regulatory uncertainty on climate change: The role of corporate time perspectives

REFEREED CONFERENCE PROCEEDINGS

- Mazutis, D. & Roberts, M. 2010. National institutional and cultural determinants of global corporate citizenship, accepted for publication in the *Proceedings of the 38th Administrative Sciences Association of Canada (ASAC) Conference*, Regina, Saskatchewan
- Mazutis, D. 2008. Global Corporate Citizenship: An empirical investigation of institutional determinants, *Proceedings of the Southern Management Association (SMA) Conference*, St. Pete Beach, Florida
- Mazutis, D. & Crossan, M. 2008. Strategic leadership and innovation: A multi-level perspective, *Proceedings of the 36th Administrative Sciences Association of Canada (ASAC) Conference*, 29(6): 108-128, Halifax, Nova Scotia
- Mazutis, D. 2007. Positive forms of leadership: An integrated framework, *Proceedings of the 35th Administrative Sciences Association of Canada (ASAC) Conference*, 28(6): 28-49, Ottawa, Ontario (Winner - Strategy Division, Best PhD Student Paper Award)

- Mazutis, D. & Slawinski, N. 2007. The art of conversation: How authentic leaders influence organizational learning, *Proceedings of the 2007 International Conference on Organizational Learning, Knowledge and Capabilities (OLKC) – "Learning Fusion"*, p. 662-675

PUBLISHED CASE STUDIES AND TEACHING NOTES

- Research In Motion: Managing Explosive Growth (2008), Ivey Publishing, Case (9B08M046) and Teaching Note (8B08M46)
  - Based on field research at RIM; written with Dr. Paul Beamish and Dr. Rod White
  - Featured in Ivey Publishing Newsletter, Vol. 1, No. 3 (October 2008)
  - Awarded Ivey Publishing "Top 10 Best Selling Case for 2009-2010", September 2010
  - Awarded Ivey Publishing "Top 10 Best Selling Case for 2008-2009", September 2009
- Reprinted in:
  - Bartlett, C. & Beamish, P. 2011 (Ed.). *Transnational Management: Text, Readings and Cases in Cross Border Management*, 6/e, Burr Ridge, IL: Irwin McGraw-Hill, p. 68-85
  - Thompson, A., Strickland, A. & Gamble, J. (Ed.). 2011 & 2010. *Crafting and Executing Strategy: The Quest for Competitive Advantage, 18/e and 17/e*, Burr Ridge, IL: McGraw-Hill, (17/e: p. C-316 – C-331)
  - Beamish, P. (Ed.). 2010. *Cases in Strategic Management*, 9/e, Toronto, ON: McGraw-Hill Ryerson, p. 1-20

RESEARCH REPORTS

- Gandz, J., Crossan, M., Seijts, G. & Stephenson, C. (with research assistance by Mazutis, D.). 2010. *Leadership on Trial: A Manifesto for Leadership Development*, Published by the Richard Ivey School of Business, ISBN: 978-0-919534-50-6; Available online at: http://www.ivey.uwo.ca/research/leadership/research/LOTreportpreview.htm

CONFERENCE PRESENTATIONS

- Mazutis, D. 2010. Why zero is not one: Towards a measure of corporate social strategies, *AOM 2010, SIM Division*, Montreal, Quebec
- Mazutis, D. 2010. A multi-level, mixed determinant model of the relationship between executive orientation and corporate social strategy, *EGOS 2010*, Lisbon, Portugal
- Mazutis, D. & Roberts, M. 2010. National institutional and cultural determinants of global corporate citizenship, *ASAC 2010*, Regina, Saskatchewan
- Mazutis, D. 2010. Executive orientation and the pursuit of corporate social strategies, *IABS 2010*, Banff, Alberta
- Mazutis, D. 2009. The strategic leadership of corporate social strategies, *Ivey 2009 PhD Sustainability Academy*, London, Ontario
- Mazutis, D. 2009. Corporate Beneficence: An Upper Echelon Perspective, *AOM 2009, SIM Division*, Chicago, Illinois
- Mazutis, D. 2008. What is corporate deviance? Exploring negative and positive firm behavior, *AOM 2008, OMT Division*, Anaheim, California

- Mazutis, D. 2008. Positive Forms of Leadership (PFL): A qualitative exploration at the strategic leadership level, *AOM 2008*, *MOC Division*, Anaheim, California
- Mazutis, D. 2008. Supererogation: Beyond positive deviance and CSR, *SBE 2008,* Anaheim, California
- Mazutis, D. & Crossan, M. 2008. Strategic leadership and innovation: A multi-level perspective, *ASAC 2008*, *Strategy Division*, Halifax, Nova Scotia
- Mazutis, D. 2007. Positive forms of leadership: An integrated framework, *ASAC 2007, Strategy Division*, Ottawa, Ontario (Best PhD Student Paper Award)
- Mazutis, D. & Slawinski, N. 2007. The art of conversation: How authentic leaders influence organizational learning, *OLKC 2007,* London, Ontario

TEACHING EXPERIENCE

Year	**Course**	**Level**	**University**
2010	Crisis and Change Management	EMBA	Stockholm School of Economics, Riga
2009	Strategic Management	IMBA	Sun Yat-Sen University, Guangzhou
2006	Marketing (Guest Lecturer)	Undergrad	University of Ottawa, Ottawa
2002	Advertising Strategy	College	Algonquin College, Ottawa

ACADEMIC SERVICE (SELECT)

Date	**Service Role**	**Organization**
2011	Editorial Board (Guest)	Journal of Business Ethics Special Issue
2011	Reviewer	Ivey PhD Sustainability Academy
2007-2011	Reviewer	AOM, ASAC (Best Reviewer Award, ASAC, 2011)
2010	Discussant	CBERN/TADA Winter Conference
2010	Discussant	EGOS
2009-2010	Ombudsperson	PhDA, Richard Ivey School of Business
2009-2010	Facilitator	Leadership on Trial, CEL Center
2009	Organizing Committee	AOM All Academy ICW: POS Scholars Gathering
2009	Newsletter Editor	AOM All Academy ICW: POS Scholars Gathering
2009	Reviewer	AOM, ASAC
2008-2009	Discussant	ASAC
2009	Interviewer	IMBA Admissions, Sun Yat-Sen University
2008-2009	Co-President	PhDA, Richard Ivey School of Business
2008	Reviewer	AOM, ASAC
2008	Facilitator	AOM, All Academy PDW Implementing the PRME
2008	Case Writer & Facilitator	Canadian Business Leader Hall of Fame
2007-2008	VP External	PhDA, Richard Ivey School of Business
2007-2008	Business Council Rep	PhDA, Richard Ivey School of Business
2007	Panel Organizer	ASAC, Practitioner Panel

PROFESSIONAL EXPERIENCE

Manager, Consumer and Small Business Marketing	2005 – 2006
Manager, Consumer Marketing	2004 – 2005
Canada Post Corporation, Ottawa, Ontario	
Brand Manager	2004
Columbia Laboratories Canada Inc., Ottawa, Ontario	
Independent Marketing Consultant	2002 – 2004
Museum of Occupation, Riga, Latvia; Algonquin College, Ottawa, Ontario	
Media Strategist	2001
Corel Corporation, Ottawa, Ontario	
Group Supervisor, Media	1999 – 2001
Ogilvy & Mather/Academie Ogilvy, Montreal, Quebec	
Account Planning Supervisor	1998 – 1999
Senior Media Executive	1997 – 1998
Media Executive	1996 – 1997
Assistant Media Executive	1995 – 1996
The Media Company/Publicité MBS Ltée, Montreal, Quebec	