Predicting the Presence of Chief Marketing Officers (CMOs) on Top Management Teams and the Moderating Influence of CMO Presence on the Relationship Between Firm Visibility, Market Power, and Industry Orientation and Firm Performance

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PREDICTING THE PRESENCE OF CHIEF MARKETING OFFICERS (CMOs) ON TOP MANAGEMENT TEAMS AND THE MODERATING INFLUENCE OF CMO PRESENCE ON THE RELATIONSHIP BETWEEN FIRM VISIBILITY, MARKET POWER, AND INDUSTRY ORIENTATION AND FIRM PERFORMANCE

by

Laurie Renee Hodge

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ABSTRACT

In response to increasing demands on firm performance, organizations have attempted to become more consumer and market responsive by adopting industry conventions, such as appointing a chief marketing officer (CMO) to the top management team (TMT). However, scholarly research on the presence or absence of a CMO, and the relationship between the presence of a CMO on the TMT and firm performance is nascent and conflicting. Thus, the purpose of these studies was to address these issues. First, using institutional theory I empirically examined the conditions of firm visibility, firm market power, and industry orientation to predict CMO presence / absence on a firm’s TMT. Second, using signaling theory I examined the same conditions under which CMO presence / absence leads to enhanced firm performance. Empirical testing was performed on a sample of U.S. based public firms over a two year period. Firm visibility and market power were found to help predict and explain the presence of a CMO on the TMT. While no direct effect of CMO presence on firm performance was observed, empirical support was found that suggests moderating relationships exist between CMO presence and firm performance, for example, the moderating influence of CMO presence on the relationship between firm visibility and firm performance. These findings add to and expand on limited knowledge about CMO presence on the TMT. In addition, prior CMO research utilized two definitions of a CMO – a “titled” CMO and someone with “marketing” in their title. By comparing both definitions in my analysis, the outcome of
each study suggests important differences exist between the two. Understanding these differences could further aid firms in decisions about TMT structure.
TABLE OF CONTENTS

Title ......................................................................................................................... i
Copyright ................................................................................................................ ii
Signatures ............................................................................................................. iii
Acknowledgements ............................................................................................. iv
Abstract .............................................................................................................. v
Table of Contents ............................................................................................... vii
List of Tables ....................................................................................................... viii
List of Figures ...................................................................................................... ix
Chapter 1 – Introduction ..................................................................................... 1
Chapter 2 (Paper 1) – Predicting the Presence of Chief Marketing Officers (CMOs) in Top Management Teams .................................................................................. 3
Paper 1 References .............................................................................................. 40
Paper 1 Appendixes ............................................................................................ 53
Paper 2 References .............................................................................................. 99
Paper 2 Appendix ............................................................................................... 112
<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Paper 1 Descriptive Statistics and Correlations</td>
<td>28</td>
</tr>
<tr>
<td>2 Predicting CMO Presence on TMTs</td>
<td>30</td>
</tr>
<tr>
<td>3 CMO Presence by Industry</td>
<td>77</td>
</tr>
<tr>
<td>4 Paper 2 Descriptive Statistics and Correlations</td>
<td>83</td>
</tr>
<tr>
<td>5 Moderating Effect of CMO Presence on Firm Performance</td>
<td>85</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paper 1 Model of Direct Relationships ........................................... 11</td>
</tr>
<tr>
<td>2</td>
<td>Interaction between Industry Orientation and Market Power on CMO Presence .......................................................... 34</td>
</tr>
<tr>
<td>3</td>
<td>Paper 2 Model of Moderating Relationships ........................................ 67</td>
</tr>
<tr>
<td>4</td>
<td>Interaction between CMO Presence and Firm Visibility on Firm Performance ........................................................................... 87</td>
</tr>
<tr>
<td>5</td>
<td>Interaction between CMO Presence and Industry Orientation on Firm Performance ........................................................................... 89</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

In response to increasing demands on firm performance, organizations have attempted to become more consumer and market responsive by adopting industry conventions such as appointing a chief marketing officer (CMO) to the top management team (TMT) (McGovern, Court, Quelch, & Crawford, 2004). However, despite the frequent addition of CMOs to the C-level suite, two troublesome observations regarding CMOs remain. First, why do only 23% of Fortune 1000 companies have a CMO in place (Spencer Stuart, 2013). Second, scholarly research on (1) the presence or absence of a CMO and (2) the relationship between the presence of a CMO on the TMT and firm performance is nascent.

Thus, the purpose of this dissertation is to address these concerns. First, I theoretically and empirically examine the environmental conditions under which a CMO is present on a firm’s TMT. Second, I theoretically and empirically examine the conditions under which CMO presence leads to enhanced firm performance. More specifically, I examine two primary questions: (1) What factors influence a CMO’s presence on a firm’s TMT? and (2) Under what conditions does CMO presence moderate the impact of firm performance? In doing so, my examination seeks to help explain why some firms may have a CMO on the TMT and why prior research has reported conflicting results regarding a CMO’s impact on firm performance.
The primary theory employed for Essay 1 is institutional theory. Though limited in its appearance in conventional marketing literature, this theory is instrumental in shaping the rationale and hypothesis for firm structure, behavior, and performance with regard to the presence of a CMO on the TMT (Cyert & March, 1963; DiMaggio & Powell, 1983). Institutional theory provides a solid framework on which to build and recognize the power of isomorphism to shape organizational behavior in an effort by the organization to gain legitimacy and, ultimately, drive firm performance (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). This theory recognizes that organizations conform to the rules and belief systems prevailing in the external environment (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) and, as such, provides explanatory power for the forces and rationale behind the presence of a CMO on a TMT. Institutional theory is also particularly helpful when making comparisons between firms because external factors, such as industry characteristics and industry orientation, are central to the reasons differences in the TMT structure may exist.

The theory employed for Essay 2 is signaling theory. Signaling theory describes the process decision makers use to resolve information asymmetry in competitive environments (Spence, 1973). Signaling theory recognizes that individuals as well as firms send signals to reduce information asymmetry because signals convey information to outsiders and influence their perceptions (Clarkson, 1995; Connelly, Certo, Ireland, & Reutzel, 2011; Freeman, 1984; Jones & Murrell, 2001). Thus, my two essay dissertation seeks to build on the limited body of TMT research that examines the value of a CMO by offering empirical data to help identify conditions under which a CMO is present on the TMT and conditions under which a CMO impacts firm performance.
CHAPTER 2

PREDICTING THE PRESENCE OF CHIEF MARKETING OFFICERS (CMOs) ON TOP MANAGEMENT TEAMS

ABSTRACT

Institutional theory proposes that it is in an organization’s best interest to conform to the rules and belief systems prevailing in the external environment (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Institutional theory applies these rules and belief systems to the composition of top management teams (TMTs) (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Williamson & Cable, 2003). However, not all TMTs are the same in terms of a firm’s functional or managerial structure. This is especially true when examining the presence or absence of a chief marketing officer (CMO) on the TMT. The presence of a CMO on the TMT may be beneficial to the firm because the appointment of a CMO has been viewed as (1) an indicator of the corporate status of marketing at the firm level, (2) signifying corporate adoption of the marketing concept, and (3) a proxy for the market power of the firm (Hise, 1965; Kerin, 2005; Mann, 1971; Nath & Mahajan, 2008; Piercy, 1986; Webster, Malter, & Ganesan, 2003).

This study theoretically and empirically demonstrates the environmental conditions under which a CMO is most likely to be present on a firm’s TMT.
More specifically, I hypothesize and empirically examine key factors that serve as antecedents to the presence of a CMO on the TMT in an attempt to explain why some TMTs have a CMO presence while others do not. Prior research has shown that firms’ structural choices of the TMT are largely functional in nature and even utilitarian in purpose. For example, Hambrick and Cannella (2004) found that TMT composition draws a distinction between strategy formulation and implementation. More specifically, Zorn (2004) found an increased prevalence of Chief Financial Officers on TMTs when firms were faced with financial reporting complexity. However, structural choices within the TMT can provide other highly desirable benefits. For example, structural choices in the TMT have been shown to favorably influence investors’ perceptions of future firm performance to the extent that they garner prestige and influence organizational legitimacy (Certo & Hodge, 2007). Thus, the structure of the TMT is a way of presenting attributes of the firm that are legitimizing (Zott & Huy, 2007). However, scholarly marketing research that explains the presence or absence of a CMO on the TMT is scarce and has yet to address Moorman and Rust’s (1999) call to examine the reasons and rationale for the presence of senior management with specialization in marketing on the TMT.

The CMO position embodies the highest position of leadership within the marketing function of a corporation and, as such, has direct responsibility for providing strategic leadership in the marketing activities of a firm (Boyd, Chandy, & Cunha, 2010). The informational, decisional, and relational roles of the CMO help firms increase their competitive capabilities in ways that can lead to enhanced firm value (Boyd et al., 2010), while reducing complexity and uncertainty in the TMT (Court, 2007; Nath & Mahajan,
In addition, the CMO is often considered the “voice of the consumer” on the TMT (Court, 2007). For example, Kashmiri and Mahajan (2010) suggest that family-named firms are more likely to have a CMO on the TMT where the voice of the consumer is greater because family-named firms place a greater emphasis on maintaining a favorable image of the firm and a positive perception of the corporate brand among consumers. Nath and Mahajan (2008) empirically identify several internal organizational factors or central tendencies (e.g., firm innovativeness) that predict CMO presence on the TMT. However, as with most extant research on the management structure of the TMT (Pettigrew, 1992), their work does not address the environmental context of the firm, which may influence whether or not a TMT has a CMO. The purpose of this research is to advance the scholarly literature by theoretically predicting and empirically examining the environmental conditions under which a CMO is most likely to be present on a TMT. Previous research on CMO presence has largely focused on the internal dynamics of the firm. In contrast, I examined environmental antecedents of CMO presence on the TMT for 572 publicly traded U.S. firms from 2010 and 2011 using the theoretical prism of institutional theory.

Literature Review and Research Hypotheses

Institutional Theory

Institutional theory recognizes that organizations conform to the rules, structures, practices, and belief systems prevailing in the external environment and within social networks (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Organizations do so
because they believe that institutional isomorphism earns them legitimacy (Dacin, 1997; Deephouse, 1996; Suchman, 1995). Suchman (1995, p. 574) defines legitimacy as a “perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.” Kostova and Zaheer (1999) further define organizational legitimacy as the acceptance of an organization by its external environment, such as when an organization is deemed proper and appropriate (Meyer & Rowan, 1977; Meyer & Scott, 1983).

Prior research (Aldrich & Fiol, 1994; Roberts & Greenwood, 1997) has conceptualized two forms of organizational legitimation—cognitive and sociopolitical—but they are not necessarily mutually exclusive (Ensley & Hmieleski, 2005). Cognitive legitimization refers to the level of public knowledge about the firm, while sociopolitical legitimization is the extent to which key stakeholders and governing bodies accept a firm as appropriate with respect to existing norms and laws (Ensley & Hmieleski, 2005).

Researchers have linked the importance of organizational legitimacy to firm growth and survival (e.g., Meyer & Rowan, 1977); when enhanced, organizational legitimacy reduces uncertainty about institutional environments (Selznick, 1957), both informationally and symbolically (Finkelstein, 1992). Institutional theory is particularly applicable to investigating TMTs because their prestige influences organizational legitimacy (Certo & Hodge, 1997; D’Aveni, 1991) and even the potential of the firm, as viewed by external markets (Bharadwaj, Bharadwaj, & Konsynski, 1999; Spence, 1973). In seeking legitimacy, firms often look to other firms they perceive as successful and imitate their strategies as a way to achieve legitimacy (DiMaggio & Powell, 1983).
Firms imitate competitive strategies in a process DiMaggio and Powell (1983) call “mimetic isomorphism.” Mimetic isomorphism is both a process and a state in which firms seek and achieve conformity. Firms achieve this through imitation of structures, practices, and belief systems that prevail in the external environment and within social networks, which are considered sources of legitimacy (DiMaggio & Powell, 1983; Haveman, 1993; Meyer & Rowan, 1977). Mimetic isomorphism is most prevalent when organizations are faced with ambiguity or environmental uncertainty (Cyert & March, 1963; DiMaggio & Powell, 1983; Mizruchi & Fein, 1999; Williamson & Cable, 2003). Firms undertake mimetic isomorphism because it can be an advantageous and an economical path to a viable problem solution (Cyert & March, 1963; DiMaggio & Powell, 1983). Institutional theory and mimetic isomorphism help explain why firm managers look to industry norms, firm traditions, and management trends, among other things, to formulate organizational structures and policies (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Zucker, 1987). Such policies may include the TMT structure and the presence or absence of a CMO on the TMT.

Role of the CMO in the TMT

The sheer volume of scholarly examination over the past 50 years is evidence of the importance that both academics and practitioners ascribe to the functionality of the TMT. The definition of a TMT in most extant research is directionally based on Cyert and March’s (1963) theoretical construct “dominant coalition,” which recognizes that executives set firm direction and influence organizational performance through the decisions they make (Hambrick & Mason, 1984). As previously noted, structural choices
in the TMT are largely functional, but they can provide organizational legitimacy (Certo & Hodge, 2007; D’Aveni, 1991; D’Aveni & Kesner, 1993) through structural isomorphism (Dacin, 1997; Deephouse, 1996; Suchman, 1995).

Top managers with functional expertise are viewed as experts in that area and are deemed in the best position to deal with environmental dependencies and critical contingencies (Finkelstein, 1992). When managerial structures include a CMO on the TMT, the CMO is viewed as providing (1) strategic leadership for the marketing activities performed by the firm (Boyd et al., 2010) and (2) assistance to the TMT when faced with market complexity (Court, 2007; Nath & Mahajan, 2008). The leadership ability and character of the top marketing executive are also empirically associated with the overall success of the marketing function of the firm (Vafeas & Vlittis, 2009).

The title “chief marketing officer” was first bestowed in the 1950s, but its widespread use is a reasonably recent occurrence (Koleszar, 2009). Hopkins and Bailey (1984) were among the first scholars to identify and empirically verify antecedents of the presence of marketing leadership on the TMT in their analysis of 294 large companies. Their measure was the presence or absence of a chief marketing executive (CME) on the TMT. This person often held the title of “vice president of marketing” or “director of marketing” and reported directly to the chairman, president, or chief executive officer (CEO) 68% of the time (Hopkins & Bailey, 1984). Hopkins and Bailey further reported that a CME presence stemmed from the homogeneity of business units or markets due to the need for differentiation while the heterogeneity of business units or markets resulted in CME absence.
More recently, Nath and Mahajan (2008) empirically identified six internal organizational factors that influence the adoption of TMT structures that included a CMO. They found that innovativeness, differentiation, branding strategy, diversification, functional experience of the TMT, and whether the CEO is an outsider each contributed to the presence of a CMO on the TMT. When disparate organizations in the same line of business are structured into an actual operational field, powerful forces emerge that lead them to become even more similar to one another (DiMaggio & Powell, 1983). The force of structural isomorphism, according to DiMaggio and Powell (1983), also extends to personnel flows and paths within an organizational field. The existence of common career titles is but one example of structural isomorphism that DiMaggio and Powell cite.

Therefore, I propose that structural isomorphism (Dacin, 1997; Deephouse, 1996; Suchman, 1995) is a significant determinant of the adoption of managerial structures that include a CMO on the TMT when firms want to obtain, maintain, or increase firm legitimacy. This perspective is directly supported by institutional theory and indirectly by the findings of Williamson and Cable (2003), who demonstrate that TMT mimetic isomorphism shapes TMT hiring patterns. By leveraging the explanatory power of institutional theory, I am able to examine and predict how the theoretical constructs of firm visibility, market power, and industry orientation (i.e., differentiation) directly affect the likelihood of CMO presence on the TMT. The model in Figure 1 shows the relationships to be tested.
Firm Visibility and CMO Presence in the Firm

Visibility is important to firms for several financial reasons, including that it helps reduce the risk associated with uncertainty (Barry & Brown, 1986), reduces the cost of capital (Merton, 1987), and helps attract a wider following by investors and information intermediaries (Bushee & Miller, 2012). Baker, Powell, and Weaver (1999) suggest that firm visibility can be defined as the degree to which analysts follow, and institutions hold, a firm’s stock. A firm that is followed by many professional financial analysts is likely to be highly visible to investors (Ackert & Athanassakos, 2001).

In addition to providing information and investment recommendations to investors (Zuckerman, 1999), analysts strive to enhance their perceived value in the marketplace by identifying mispriced securities (O'Brien & Bhushan, 1990). As a result, there is growing realization among analysts that intangible assets such as brand equity, technology applications, customer loyalty, and customer satisfaction are important determinants of firm value (Barth, Clement, Foster, & Kasznik, 1998). However, this
type of information is not typically captured or reported in formal financial disclosure statements. As such, the analyst must seek out other reliable sources to aid in more accurate firm valuation.

Prior research has also shown that analysts influence managers’ and firms’ behaviors and strategies (Rao & Sivakumar, 1999; Zuckerman, 1999). Analysts’ recommendations can affect firms’ strategies and actions indirectly through their influences on investors’ behaviors and resulting stock prices and more directly by exerting pressure on managers through interactions during earnings conference calls and meetings (Benner, 2010). Therefore, because TMTs constitute the boundary between an organization and its environment (Keck & Tushman, 1993), a key managerial task is to select organizational structures and strategies that strike a balance between competitive and institutional demands (Chen & Hambrick, 1995; Deephouse, 1999).

Thus, for publicly traded firms, institutional theory (DiMaggio & Powell, 1983) predicts that as firms seek cognitive legitimization (Ensley & Hmieleski, 2005; Suchman, 1995), analyst and capital market actors will respond in kind to their quest for legitimacy and demand greater information and apply increased coercive pressure as a result of the legitimization process. As such, I propose that this will lead firms to adopt a TMT structure that includes a CMO because the presence of a CMO will provide analysts and capital market actors access to unique insights and information about the firm’s intangible assets, such as marketing strategies, or higher levels of customer satisfaction (Barth et al., 1998; Luo, Homburg, & Wieseke, 2010), ultimately meeting the analysts’ demands for greater information. Thus, I propose the following:

**H1**: Firm visibility is positively related to firm adoption of a TMT structure that includes a CMO.
Market Power and CMO Presence in the Firm

Market power reflects a firm’s ability to influence the actions of others in a product-market (Harrigan, 1983; Makhija, 2003; Shervani, Frazier, & Challagalla, 2007). A firm’s market power is a joint function of its horizontal and vertical clout and the capabilities of its internal departments (Steiner, 2008). Market power can be acquired simply by virtue of size; by definition, large organizations enjoy greater market power than small firms (Boone, Carroll, & Van Witteloostuijn, 2004; Haveman, 1993). Market power can result from the presence of structural barriers that deter entry for new competition or target markets derived from industry characteristics (Bain, 1956; Morris, 1996). Fewer producers also result in a concentration of market power (Alvarado, Overbye, & Sauer, 1999).

To enhance firm market power, firms must (1) differentiate their product offerings (Porter, 1980) and (2) effectively communicate their product’s unique advantage to customers (Andras & Srinivasan, 2003). These two tasks call for skill and experience in segmentation, targeting, and positioning (Nath & Mahajan, 2008), key domains of the marketing function.

Ultimately, market power is the ability of firms to elevate price above marginal cost to earn economic profits in excess of competitive levels (Cotterill, Franklin, & Ma, 1996), or what economists call “rents.” According to the U.S. Department of Justice and Federal Trade Commission (1992), a firm possesses market power when it can maintain prices above competitive levels and profitably keep them elevated for a significant period.
To do this, Kerin, Mahajan, and Varadarajan (1990) suggest firms selectively choose markets in which to compete and strategically deploy their resources, such as advertising, to exploit their market power to achieve effective product differentiation. Advertising intensity is widely acknowledged as an effective and efficient method to achieve product differentiation, increasing firm profit levels (Connor & Mueller, 1982). Porter (1976) empirically demonstrates the capacity of advertising to differentiate products, elevate profits, and create barriers to entry.

Likewise, research and development (R&D) is a valuable strategic asset that enables firms to generate superior return on investments (Chesbrough, 2003). However, it is the simultaneous investment in higher levels of R&D and advertising relative to industry norms that enables firms to engage in effective product differentiation, generating superior organizational performance (Krishnan, Tadepalli, & Park, 2009).

Thus, the literature suggests that market power is related to the firm’s ability to achieve differentiation (Hay, 2008; Matraves & Rondi, 2007; Morris, 1996), and differentiation is related to the likelihood of CMO presence on a firm’s TMT (Nath & Mahajan, 2008). Moreover, the strategic and tactical deployment of the firm’s valuable resources falls within the domain of the marketing function (Hyde, Landry & Tipping, 2004) but is best leveraged by “corporate-level distinctive competencies” (Hitt & Ireland, 1985, p. 289). Thus, I propose the following:

\[ H2: \text{Firm market power is positively related to firm adoption of a TMT structure that includes a CMO.} \]
Industry Orientation and CMO Presence in the Firm

DiMaggio and Powell (1983) assert that isomorphism is promoted through intensified interaction within an organizational field, commonly an industry. From this perspective, industry characteristics become constraints within which firms adapt or perish (Aldrich, 1979; Christensen & Montgomery, 1981; Lawrence & Lorsch, 1967). Meyer and Rowan (1977) propose that a significant amount of organizational structure is due to environmental pressures and/or the desire for legitimacy (which is achieved through conformity with institutional and cultural environments of the firm). Lees (1997) extends the perspective that the major determinants of organizational structure lie outside (rather than inside) the organization and proposes that as organizations become more isomorphic, eventually they must behave as their environment dictates to maintain legitimacy. Evidence also suggests that institutional pressures to organize in certain ways are stronger in some industries than in others (Boeker, 1989; Eisenhardt, 1988; Palmer, Jennings, & Zhou, 1993).

Industry orientation, relative to the degree of differentiation inherent within an industry, can lead to environmental pressure that, in turn, influences firm choices. For example, highly differentiated industries, such as high-technology, provide the firm more avenues for competition and a broader array of possible competitive actions (Porter, 1980), but they are also more dependent on discretionary consumer consumption than others (McGahan & Porter, 1997). Firms competing in highly differentiated industries tend to seek ways to differentiate their offerings; as such, they often concentrate their resources like R&D on product innovations (Plehn-Dujowich, 2009) rather than on improving efficiencies.
Industry effects also exist at the corporate level (Hitt & Ireland, 1985). However, only a few studies (Datta, Guthrie, & Rajagopalan, 2002; Datta & Rajagopalan, 1998; Guthrie & Olian, 1991; Pfeffer & Leblebici, 1973; Rajagopalan & Datta, 1996) have examined the role of industry in executive staffing decisions such as those of the TMT. Researchers have long suggested and supported the importance of functional diversity in the TMT (Michel & Hambrick, 1992; Pegels, Song, & Yang, 2000; Weinzimmer, 2000; Weinzimmer, Bond, Houston, & Nystrom, 2003; Wiersema & Bantel, 1992). Functional diversity on the TMT has been shown to stimulate wider discussion and debate about the different ways to focus the activities of the company and leads to more innovative, higher-quality solutions (Bantel & Jackson, 1989; Hambrick, Cho, & Ming-Jer, 1996). Functional diversity and expertise serve as the lens through which the TMT views, interprets, and makes sense of the business environment (Day & Lord, 1992).

Leveraging functional expertise in the TMT, particularly marketing expertise, has been linked to the creation of shareholder value (Weinzimmer et al., 2003). The presence of marketing expertise on the TMT is believed to play a unique role by focusing firm attention and resources on the consumer, assessing market attractiveness, and developing strategic assets through innovation (Bantel & Jackson, 1989; Day, 1992; Kerin, 2005; Webster, 1992; Weinzimmer et al., 2003). The success of firms competing in differentiated industries is dependent on producing products that stand out from competitors’ products on product features, quality, and design (Guthrie & Datta, 2008). Marketing’s role is to create differentiation, preference, and loyalty (Webster, 1992). These factors fall within the purview of a CMO because marketing is the corporate area that best knows and understands the firm’s customers (Kumar & Shah, 2009). The
Industry Orientation, Market Power, and CMO Presence on TMTs

In addition to a direct effect, industry orientation (i.e., differentiation) may also affect the firm’s decision of whether the TMT structure should include a CMO through moderation of a firm’s market power. Findings in previous research suggest at least three reasons to believe so. First, differentiated industries provide the firm a broader range of competitive actions (Porter, 1980) than market power alone. Second, a host of endogenous and exogenous variables may influence the ability of firms within differentiated industries to generate market power. Examples of these variables include profit margin, market size, frequency of purchase, buyer knowledge ability, number of brands, barriers to entry, and the manner in which goods are sold (Andras & Srinivasan, 2003; Farris & Albion, 1981; Porter, 1980). Third, as the degree of differentiation increases and innovation spreads, powerful forces emerge in the form of isomorphism that cause firms to become more similar in their output and structure (DiMaggio & Powell, 1983).

Furthermore, previous research suggests that differentiated industries provide an environment that may enhance market power. Marketing expertise is more valuable in
industries with greater competition (Kohli & Jaworski, 1990) and when industry
instability increases (Pasa & Shugan, 1996), such as in highly differentiated industries.
For example, Lawrence and Lorsch (1967) find that the marketing function provides a
greater contribution to firm outcomes in the differentiated food processing industry than
in the commoditized plastics industry. Fornell and Johnson (1993) empirically find that
differentiated industries rate systematically higher in perceived product performance and
subsequent consumer satisfaction. Product performance and consumer satisfaction are
antecedents of a firm’s ability to earn higher-than-normal profit margins, thereby creating
market power (Fornell, Mithas, Morgeson, & Krishnan, 2006; Reichheld & Sasser,
1990). Within the differentiated soft-drink industry, Cotterill et al. (1996) conclude that
market power is largely due to product differentiation, a primary domain of marketing,
and the CMO position (Nath & Mahajan, 2008). Moreover, industries with high product
differentiability also provide greater managerial discretion and value experimentation and
are a proving ground for new strategies (Datta et al., 2002). Of note, Nath and Mahajan
(2008) find that a differentiation strategy at the firm level is also related to the likelihood
of a CMO presence on the TMT.

Prior research also suggests that in differentiated industries, TMTs include a
CMO to (1) increase legitimacy (DiMaggio & Powell, 1983), (2) attract greater and
higher-quality resources (Baum & Oliver, 1991; Heugens & Lander, 2009), and (3)
increase the likelihood that the firm will select the primary differentiating attribute that
most buyers in the industry perceive as important and unique, which in turn will garner
the firm above-average profits (Porter, 1985), further enhancing market power.
For these reasons, I hypothesize the following:
H4: The positive relationship between firm market power and presence of a CMO on the TMT is moderated by industry orientation such that within highly differentiated industries the positive relationship is stronger, but in lower differentiated industries, the relationship is weaker.

METHODOLOGY

Design

This paper uses hierarchical logistic regression to examine both continuous environmental variables that predict the presence of a CMO on the TMT. The time frame selected for this sample is calendar year 2010 and 2011. In selecting these two full year periods, I avoid observed noise and financial turmoil associated with issues arising from the 2007–2009 economic crises while providing a current reflection of the TMT structure among U.S. firms.

Data Sources

The data for Hypothesis H1, H2, H3 and H4 was drawn from the secondary data source Capital IQ, in accordance with prior research examining TMT and environmental conditions (Haleblian & Finkelstein, 1993; Rajagopalan & Prescott, 1990; Vergne, 2011). Additional data was obtained from annual reports, 10K reports, and other public sources, including Morningstar.com. This data included TMT size in accordance with prior research (Nath & Mahajan, 2008) and verification of the presence or absence of a CMO on the TMT within the periods examined.
The use of secondary data, public databases, and business press to acquire information on publicly traded firms is consistent with prior TMT and organizational literature (e.g., Anderson & Reeb, 2004; Boyd et al., 2010; Cannella, Park, & Lee, 2008; Nath & Mahajan, 2008; Pearce & Zahra, 1992; Reichert, Lockett, & Rao, 1996; Sullivan, Haunschild, & Page, 2007). Consistent with other studies using similar data sources (McGahan & Porter, 1997), this analysis excludes private firms because the data necessary to conduct the analysis as modeled, such as advertising investment or sales revenue, is not in the public domain.

Sample and Sample Size

The data set consists of a random sample of firms with and without a titled CMO present on the TMT from among 11,017 public U.S. firms one year or older. This sample includes firms across 10 different industry groups from the Capital IQ database, using two-digit Global Industry Classification System (GICS) codes, developed jointly by Standard & Poor’s and Morgan Stanley’s Capital International. Bhojraj, Lee, and Oler (2003) suggest that GICS is significantly better than the other three classification schemes at explaining cross-sectional variations, forecasted and realized growth rates, R&D expenditures, and other key financial ratios across large-cap, mid-cap, and small-cap firms. Thus, GICS is employed for this examination because it is more homogeneous than older Standard Industrial Classification codes, the North America Import Database, and the Fama–French classification system (Fama & French, 1997). Furthermore, prior research has shown that GICS codes are more parsimonious, better improve explanatory
power, and have a greater correlation across industry peer firms than the Fama–French algorithm (Chan, Lakonishok, & Swaminathan, 2007).

However, unlike prior research that limits sample size to firms reporting total sales revenue of at least $250 million (Hambrick & Cannella, 2004; Nath & Mahajan, 2008), my sample was drawn from all publicly traded U.S. firms, regardless of sales volume, and provided all necessary data points so as not to constrain the data set artificially or ignore the presence of CMOs in smaller or newly established firms.

In accordance with Hair, Black, Babin, and Anderson (2010), a random sub-set of firms were created to both ensure that the primary data set is representative of the population and provide a manner for validating the logistic models tested. For example, the mean natural log of firm age for the population of U.S. public companies between 2010 and 2011 was 1.43 compared to a mean of 1.48 for the analysis sample data set and for the validating sample set.

Because the nature of analysis for H1, H2, H3, and H4 is logistic regression, a larger sample size was required (Hair et al., 2010). Thus, 1,218 observations were obtained. Twenty seven observations with missing data were discarded, including all 5 observations in the Utilities industry. The Schweinle method was then used to identify outliers (2.5 standard deviations from mean), 44 were discarded, resulting in a total sample size of 1,147.1

A random sample of approximately 50% of the observations containing a CMO was combined with a random sample of 50% of the observations without a CMO,

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1 The composition of the analysis sample by industry using two-digit GICS codes was 10 firms in Energy (GICS 10), 31 in Materials (GICS 15), 84 in Industrials (GICS 20), 138 in Consumer Discretionary (GICS 25), 32 in Consumer Staples (GICS 30), 115 in Health Care (GICS 35), 18 in Financials (GICS 40), 139 in Information Technology (GICS 45), and 5 in Telecommunication Services (GICS 50).
resulting in 572 observations designated as the analysis sample. The remaining 575 observations were designated as the validation sample in accordance with Hair et al. (2010) to establish external validity, assess the predictive accuracy, and provide insight into generalizability of the logistic model. In line with prior research, each sample exceeds the recommended size for logistic regression analysis (greater than 400) (Hosmer & Lemeshow, 2000) and the minimum size (375) necessary to be representative of the total population of U.S. firms (Krejcie & Morgan, 1970).

The analysis sample contained 131 observations with a CMO present comprising 22.9% of the sample, while the validation sample contained 130 observations with a CMO present, or 22.6% of the total sample. These proportions were directionally similar to reported findings by Nash and Mahajan (2008) of 19.6% for firms that had a titled CMO on the TMT.

Dependent Variable

The dependent variable of interest is the presence or absence of a CMO on the TMT. In keeping with prior research (e.g., Boyd et al., 2010), this condition was identified through use of titled positions that expressly stated “chief marketing officer.” Hambrick and Mason (1984) suggest that researchers can identify members of the TMT simply by equating executive titles with membership in the TMT. For the purpose of this study, CMO presence on the TMT was coded as 1, and CMO absence was coded as 0.
Explanatory Variables

The predictor variables examined were firm visibility (FV), market power (MP), and industry orientation (IO). In addition, one moderating variable was created to test the moderating influence of industry orientation on the relationship between market power and CMO presence on the TMT.

Firm Visibility

In line with prior research (Ackert & Athanassakos, 2001; Baker et al., 1999; Barron, Byard, Kile, & Riedl, 2002), the construct of firm visibility (FV) used two measures: the number of institutional shares outstanding (NOI) and the number of institutional shareholders (NOS). Baker et al. (1999) define firm visibility as the extent, to which analysts follow, and institutions hold, a firm’s stock. Ackert and Athanassakos (2001) suggest that these measures are relevant and widely accepted proxies for firm visibility. Thus, in line with prior research (Baker et al., 1999), the construct of firm visibility was measured as the number of institutional shares outstanding (NOI) and the number of institutional shareholders (NOS) at the close of each year observed. Because H1 examines a theoretical construct composed of multiple inputs of different numeric ranges, the geometric mean was calculated to reflect firm visibility.

Market Power

The construct of firm market power (MP) was examined by combining two measures: advertising intensity (AI) and R&D intensity (RI). Advertising intensity (AI) was measured by annual advertising expenses divided by annual sales revenue less

Research intensity (RI) was measured by annual R&D expenses divided by annual sales less industry median R&D expenses (Nath & Mahajan, 2008). Prior studies examining (RI) have found that R&D expenditures affect systematic risk of the firm and analyst recommendations (Barth, Kasznik, & McNichols, 2001; McAlister et al., 2007). Andras and Srinivasan (2003) suggest that advertising intensity is greater in consumer product firms but research intensity (RI) is greater in manufacturing product firms; they also find that both (AI) and (RI) are positively related to firms’ profit margins (Krishnan, Tadepalli, & Park, 2009). Thus, in line with prior research (Andras & Srinivasan, 2003; Krishnan, Tadepalli, & Park, 2009), the construct of market power was measured as the combination of a firm’s (AI) and (RI) for each year observed because both have been found to contribute to a firm’s market power. Because H2 examines a theoretical construct composed of multiple inputs of different numeric ranges, the geometric mean was calculated to reflect firm market power.

Industry Orientation

Finally, industry orientation was examined by measuring the degree of differentiation within each industry. Differentiated industries typically provide a wide variety of products or services that meet the needs and desires of heterogeneous customers (Grönroos, 1983). Conversely, lesser differentiated industries refer to industries that provide primary goods or services that are perceived as close substitutes
for one another (Bannock & Baxter, 2011). Industries with higher advertising intensity are deemed to be highly differentiated while those with lower advertising intensity are characterized as having low differentiation. Firm membership was ascertained by means of the six-digit industry code representing each firm’s dominant line of business, as classified by GICS. Consistent with Hull & Rothenberg (2008), industry orientation was measured using the average advertising intensity in each firm’s industry for the period examined. Thus, industry orientation as reflected by the degree of differentiation was measured by the geometric mean of two years of advertising intensity by industry then standardized using Z-score transformation to reflect the degree of differentiation among industries within the sample.

Control Variables

In accordance with prior research (Collins & Clark, 2003; Eaton & Rosen, 1983; Finkelstein & Hambrick, 1996; Nath & Mahajan, 2008), five control variables were used: firm size, firm age, TMT size, whether a CEO was an outsider or an insider before appointment to the position, and industry membership. Firm size was included as a control variable because it addresses the likelihood that large firms enjoy more resource advantages than small firms (Collins & Clark, 2003), which may influence both human resource policies and firm performance (Jackson & Schuler, 1995). The construct of firm size is widely represented in extant research, which has operationalized it using several quantitative methods, including total sales (Ciscell & Carroll, 1980; Murphy, 1985) and book value of net assets (Eaton & Rosen, 1983; Prasad, 1974; Rajagopalan & Prescott, 1990). However, the construct of firm size is most commonly measured by the number of
employees (Eaton & Rosen, 1983; Murphy, 1985). In line with previous research (Boyd et al., 2010; Covin, Green, & Slevin, 2006; Nath & Mahajan, 2008; Newbert, 2007), I measured firm size as the total number of firm employees.

Prior research has also found that firm age influences a firm’s capabilities (e.g., Autio, Sapienza & Almeida, 2000; Finkle, 1998; Park, Mezias, & Song, 2004), so it was included as a control variable. Controlling for firm age can also help address differences in ownership structure (Eisenberg, Sundgren, & Wells, 1998) and firm growth rates (Delmar, Davidsson, & Gartner, 2003; Loderer & Waelchli, 2010). Firm age was measured by the number of years a firm has been in business (Ensley & Hmieleski, 2005).

Top management team size has been operationalized by prior researchers in many ways, as observed by Carpenter, Geletkanycz, and Sanders (2004). It typically reflects the top two tiers of the organization’s management—that is, CEO, chairman, COO, and chief financial officer and the next-highest management tier (Carpenter, 2002; Finkelstein & Hambrick, 1996; Wiersema & Bantel, 1992). TMT size helps determine the nature of a TMT’s information-processing and decision-making capabilities (Haleblian & Finkelstein, 1993) and pertains to the complexity TMT executives encounter (Henderson & Fredrickson, 1996). Following prior research (Nath & Mahajan, 2008), TMT size was defined as the number of executive officers specified by a firm in the 10-K or proxy, its annual mandatory filings with the Securities Exchange Commission. The mean size of the TMT in the analysis sample was 9.37, and the standard deviation was 2.7, which was consistent with prior research findings (Nath & Mahajan, 2008). Controlling for TMT size is also in accordance with Carpenter, Geletkanyez, and Sanders’s (2004) call for
research to examine the effects of the TMT on firm outcomes by controlling for team size. Failure to control for TMT size may confound results, making it difficult to discern whether the results should be attributed to heterogeneity or team size (Carpenter & Fredrickson, 2001; Carpenter et al., 2004).

Whether a CEO was an outsider or an insider before appointment was also included as a control variable because this factor has been associated with the likelihood of CMO presence in the TMT (Nath & Mahajan, 2008). Firm-specific operational experience has helped explain other TMT staffing decisions. For example, Hambrick and Cannella (2004) find that CEOs who lack firm-specific experience are more likely to have a COO than insider CEOs. Therefore, in accordance with prior research, a dummy variable was created and coded as 1 if the CEO had firm tenure longer than a year and 0 if the CEO had spent less than one year with the firm before appointment to CEO.

Finally, prior research (Lees, 1997; Meyer & Rowan, 1977) contends controlling for industry membership is necessary to capture the effects of industry-level variables on organizational structure such as whether or not a CMO is present on the TMT. For this reason, my study included industry dummy variables, coded as 1 for industry membership and 0 for non-membership. Industry membership was ascertained by means of the two-digit industry code as classified by GICS. Industries represented in the sample include: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, and Telecommunication Services. However, the Energy and Telecommunications industries were excluded as control variables because there were 10 or fewer observations in both the validation and analysis sample (Hair et al., 2010).
Analysis

Because H1, H2, H3, and H4 examine the relationship between the explanatory variables and a qualitative dependent variable to determine the likelihood of CMO presence on the TMT, hierarchical logistic regression was used. Logistic regression assumes a categorical dependent variable with a binomial distribution. Prior research has deemed this manner of analysis appropriate (Hair et al., 2010; Matta & Beamish, 2008; Press & Wilson, 1978). Table 1 provides descriptive statistics and correlations.
Table 1 Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>s.d.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 CMO Presence</td>
<td>0.000</td>
<td>1.000</td>
<td>0.230</td>
<td>0.421</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Firm Size</td>
<td>1.000</td>
<td>440885.000</td>
<td>14348.390</td>
<td>49865.554</td>
<td>.271***</td>
<td>.086*</td>
<td>.283***</td>
<td>.299***</td>
<td>.339***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Firm Age</td>
<td>1.000</td>
<td>251.000</td>
<td>43.190</td>
<td>37.224</td>
<td></td>
<td>.071*</td>
<td></td>
<td>.005</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 TMT Size</td>
<td>1.000</td>
<td>20.000</td>
<td>9.370</td>
<td>2.731</td>
<td></td>
<td>.059</td>
<td></td>
<td>.005</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 CEO Appointment History</td>
<td>0.000</td>
<td>1.000</td>
<td>0.690</td>
<td>0.463</td>
<td></td>
<td>.059</td>
<td></td>
<td>.071*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Firm Visibility</td>
<td>31.623</td>
<td>3508317.815</td>
<td>150688.264</td>
<td>312044.409</td>
<td>.406***</td>
<td>.380***</td>
<td>.266***</td>
<td>.510***</td>
<td>.032</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Firm Market Power</td>
<td>0.441</td>
<td>215.432</td>
<td>9.695</td>
<td>15.011</td>
<td>.033</td>
<td>- .051</td>
<td>- .136**</td>
<td>.009</td>
<td>- .025</td>
<td>- .021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Industry Orientation</td>
<td>0.000</td>
<td>0.009</td>
<td>0.001</td>
<td>0.001</td>
<td>.91*</td>
<td>.048</td>
<td>.069*</td>
<td>.133**</td>
<td>- .067</td>
<td>.119**</td>
<td>.036</td>
<td></td>
</tr>
<tr>
<td>9 Industry Orientation x Firm Market Power</td>
<td>-0.049</td>
<td>0.177</td>
<td>0.001</td>
<td>0.010</td>
<td>.085*</td>
<td>.053</td>
<td>.001</td>
<td>.038</td>
<td>- .028</td>
<td>.034</td>
<td>.068</td>
<td>- .037</td>
</tr>
</tbody>
</table>

n = 572

*p < .05

**p < .01

***p < .000

CMO Presence: 1 = Present, 0 = Absent.

CEO appointment history: 1 = Insider, 0 = Outsider.

To minimize positive skewness, variables 6, and 7 were logarithmically transformed prior to analysis. Geometric mean and standard deviation are reported in Table 1.

To reflect relative degrees of differentiation within industry orientation, variable 8 was converted to a Z-score prior to analysis.

Firm market power and industry orientation less industry median ratios.
Before the hierarchical logistic regression was conducted, bivariate correlations were examined in the analysis sample. Except for the correlation between the control variable TMT size and the independent variable firm visibility ($r = .510$), no other bivariate correlations approached the .70 threshold when collinearity begins to distort model estimation (Dorman et al., 2013; Hair et al., 2010). A similar correlation ($r = .525$) was observed between the same variables in the validation sample. However, the analysis sample and the validation sample each exceeded 250 observations; Mason and Perreault (1991) suggest bivariate correlations greater than .70 have minimal effect on the ability of a model to draw correct inferences. Variance inflation factor (VIF) scores for both the analysis sample and the validation sample were then compared with the suggested cutoff threshold of 10 (Hair et al., 2010; Tull & Hawkins, 1990; Lehmann, Gupta, & Steckel, 1988). The independent variables were examined for multicollinearity; no variable had a standard error larger than 1.0, and no variable was found to have a VIF score above 3, well below the suggested cutoff value of 10 (Hair et al., 2010). Because logistic regression was employed, heteroskedasticity was not a concern (Hair et al., 2010).

Table 2 reflects the hierarchical logistic regression results from the analysis sample. Model 1A contains the test results from the control variables on CMO presence/absence. Model 1B contains the results from the independent variables firm visibility, market power, and industry orientation (Model 1B) on CMO presence/absence. Model 1C contains the results of the hypothesized moderating relationship of industry orientation on the relationship between market power and CMO presence/absence. Variables used in the creation of the interaction terms were centered before analysis (Cohen, Cohen, West, & Aiken, 2003).
As Table 2 shows, the first part in the hierarchical logistic regression (Model 1A) included only the control variables. Goodness-of-fit as measured by -2 log likelihood for Model 1A was 499.648. Among the control variables, firm size ($\beta = .000$, $p = .005$), TMT size ($\beta = .238$, $p = .000$), the industry dummy variable for materials ($\beta = 2.027$, $p = .015$), industrials ($\beta = 1.974$, $p = .002$), and healthcare ($\beta = 2.595$, $p = .000$) were found to be significant using a one-tailed test. Model 1A, including the constant and the control variables.
variables, had a classification accuracy rate of 79.4% of the cases and Nagelkerke pseudo-R-square of .278.

The second part of the hierarchical logistic regression (Model 1B) measured the direct effects of the independent variables. The addition of firm visibility, market power, and industry orientation to the model resulted in a significant change in the classification accuracy from 79.4% to 81.8% compared to Model 1A, reflecting the enhanced predictability of Model 1B compared to Model 1A. Goodness-of-fit as measured by -2 log likelihood for Model 1B was 427.245, a lower value than Model 1A, representing a better model fit (Hair et al., 2010). Regarding the direct effect of the independent variables on CMO presence/absence on the TMT, firm visibility was positive and statistically significant ($\beta = 2.175, p = .000$), market power was positive and statistically significant ($\beta = 1.503, p = .004$), while industry orientation was positive but not statistically significant ($\beta = .080, p = .466$). Model 1B had a Nagelkerke pseudo-R-square of 0.426. The increase of the value of Nagelkerke pseudo-R-square closer to 1.0 also indicates Model 1B is a better fit than Model 1A (Hair et al., 2010).

The third part of the hierarchical logistic regression (Model 1C) measured the interaction effect of industry orientation on market power and CMO presence/absence on the TMT. The addition of the moderating variable represented no meaningful improvement in model fit as measured by -2 log likelihood (424.623) or classification accuracy (81.6%) over the main effects Model 1B. Model 1C had a Nagelkerke pseudo-R-square of 0.431. The interaction was positive but non-significant ($\beta = .748, p = .123$). Thus, the addition of the moderating variable industry orientation on the relationship between market power and CMO presence did not enhance model fit.
The logistic regression coefficients reported in Model 1B show that firm visibility was positive and significant ($\beta = 2.175, p < .001$). Thus, the findings support H1: *Firm visibility is positively related to firm adoption of a TMT structure that includes a CMO.* For H2, the logistic regression coefficients show that market power was positive and significant ($\beta = 1.503, p < .010$). Thus, this finding supports H2: *Firm market power is positively related to firm adoption of a TMT structure that includes a CMO.* For H3, the logistic regression coefficients show that industry orientation was positive but non-significant ($\beta = .080, p > .050$). Thus, this finding does not support H3: *Firm industry orientation (differentiation) is positively related to firm adoption of a TMT that includes a CMO.*

The logistic regression coefficients reported in Model 1C were non-significant ($\beta = .748, p > .050$). Thus, H4, which predicted: *The positive relationship between firm market power and presence of a CMO on the TMT is moderated by industry orientation such that within differentiated industries the positive relationship is stronger, but in non-differentiated industries, the relationship is weaker,* was not supported.
Figure 2 indicates the interaction effect between industry orientation and market power on CMO presence on the TMT. The coefficient for this interaction term is non-significant ($p > .050$). However, the interaction charted suggests that in situations where market power is high and industry orientation is highly differentiated, industry orientation amplifies the relationship between market power and CMO presence, but when industry orientation is undifferentiated, it does not.

While prior literature has not offered specific rules that are applicable to reporting logistic regression (Peng, Lee, & Ingersoll, 2002), reporting validation results is an important test of internal validity (Bagley, White, & Golomb, 2001). Thus, the results from analysis of the validation sample are provided in Appendix 1. As reported, the validation sample confirmed each of these findings.
Finally, my study operationalized CMO presence on the TMT (someone expressly holding the title of Chief Marketing Officer) differently than Nath and Mahajan (2008).² As such, additional analysis was conducted on both the analysis and validation sample to examine each hypothesis using the broader definition of a CMO. Using this broader definition and the analysis sample, I found that the classification accuracy of Model 1A was 68.2%, Model 1B was 70.1%, and Model 1C was 69.9%. Of the variables of interest, I found only firm visibility to be positive and significant, (β = .557, p = .001). Firm market power was positive but non-significant (β = .337, p = .316) while industry orientation was negative and non-significant (β = -.121, p = .238). The moderating variable industry orientation on the relationship between market power and CMO presence was negative and non-significant (β = -0.70, p = .844). Analysis of the validation sample using the broader definition of a CMO also confirmed findings from the analysis sample. Firm visibility was positive and significant (β = .599, p = .000), market power was positive but non-significant (β = .281, p = .476), and industry orientation was negative and non-significant (β = -.043, p = .700). The moderating variable industry orientation on the relationship between market power and CMO presence was negative and non-significant (β = -.020, p = .965). As a result, only hypothesis H1 was supported using the broader definition of a CMO. Findings from the analysis sample and the validation sample using the broader definition of a CMO are reported in Appendixes 2 and 3, respectively.

² Nath and Mahajan (2008) operationalize CMO presence as any executive on the TMT with the term “marketing” in his or her title. In addition to chief marketing officer, titles included vice president marketing, senior vice president marketing, or executive vice president marketing (Nath & Mahajan, 2008).
DISCUSSION

This study began in an attempt to explain why some firms have a CMO on the TMT while others do not. Prior research (Nath & Mahajon, 2008) has identified several internal factors that predict CMO presence; however, little to no empirical evidence existed examining the firm’s external environment. As suggested by scholarly literature (Cyert & March, 1963; DiMaggio & Powell, 1983), the application of institutional theory is deemed to be appropriate in both examining the external environment of the firm as well as predicting managerial structures of the firm, such as the presence of a CMO in the TMT.

Thus, this study leverages the explanatory power of institutional theory in theorizing that structural isomorphism is a significant determinant of the adoption of managerial structures that include a CMO on the TMT when firms seek to obtain, maintain, or increase firm legitimacy. Specifically, this study examines three environmental constructs under which a CMO may be more likely to be present in the TMT of a firm: firm visibility, firm market power, and industry orientation (i.e., differentiation).

The study hypothesized (H1) that firm visibility was positively related to firm adoption of a TMT structure that includes a CMO. It hypothesized (H2) that firm market power is positively related to firm adoption of a TMT structure that includes a CMO. It hypothesized (H3) that industry orientation (differentiation) was positively related to firm adoption of a TMT structure that includes a CMO. Finally, the study hypothesized (H4) that the relationship between firm market power and the presence of a CMO on the TMT was moderated by industry orientation (differentiation) such that within differentiated
industries the positive relationship is stronger, but in non-differentiated industries, the relationship is weaker. The lack of significance of this finding may have occurred because a threshold had been reached beyond which mimetic behavior failed to provide the firm incremental benefits, such as legitimacy or firm performance (Meyer & Rowan, 1977).

This study found that a CMO was more likely to be present on the TMT of firms that have greater firm visibility, thus hypothesis 1 was supported. This study also found that a CMO was more likely to be present on the TMT when firms have greater market power; thus, hypothesis 2 was supported. However, this study found no support that a CMO was more likely to be present on the TMT when firms operated in differentiated industries or when firms with high market power operated in differentiated industries. Thus, hypotheses 3 and 4 were not supported.

Contributions

The contribution of this study is that it extends the scope of scholarly inquiry, from a marketing and management perspective, to provide significant new insights as to the conditions under which a CMO is most likely to be present on a firm’s TMT. In doing so, I was able to identify two previously unexamined conditions—firm visibility and market power—that individually and collectively help predict and explain why some TMTs have a CMO presence while others do not. Furthermore, by comparing TMTs containing different marketing titles, I have demonstrated that there may be important differences between a titled CMO and someone with “marketing” in their title on the TMT.
This finding suggests that future research examining the role and influence of a CMO should examine both broad and narrow definitions of a CMO.

Managerial Implications

From this examination, three implications for managers arise. Foremost, managers must recognize that the external environment of a firm can play an influential role in shaping the managerial structure of a firm. Firm visibility and firm market power are just two factors managers should consider. Secondly, managers should recognize that the inclusion of a CMO on the TMT provides another way for the firm to meet the on-going demand for firm-level information by capitol market actors. Third, these findings empirically support prior research that suggested strategic and tactical deployment of a firm’s valuable resources, such as market power, not only come under the marketing function (Hyde, Landry, & Tipping, 2004) but are best leveraged by “corporate-level distinctive competencies” (Hitt & Ireland, 1985, p. 289). Thus, the presence of a CMO on the TMT provides unique functional support to the TMT that leads to empowerment of the firm to better address market-related complexity.

Limitations

One of the primary limitations of this study was the limited presence of a CMO across all industries equally. Another limiting factor was that many firms did not publicly report all measures necessary to conduct this analysis. As a result, I omitted firms that did not fully report key metrics such as those that did not report at least one measure for market power. Similarly, the degree of differentiation captured by industry was
constrained by the total number of firms within the industry reporting advertising investment. By virtue of the variables studied, such as the number of shares outstanding, the sample was limited to publicly traded firms. The data set was also limited to U.S. firms and observations taken within a two year period. Overcoming the limitations of this study such as conducting similar research in other countries or surveying similar measures from private firms could prove beneficial in extending the generalizability of this model.

Future Research

The findings of this study lead to additional questions for future research. Foremost, what other environmental factors besides firm visibility and market power might influence CMO presence on the TMT? Market complexity might be one such factor to be examined. Does the managerial structure of international firms mirror that of U.S. firms when faced with similar environmental pressure? Another area that warrants further examination is the perceived and operational differences between a CMO and other senior marketing titles such as Vice President of Marketing. The outcome of this study suggests differences do exist between a titled CMO and someone with “marketing” in their title on the TMT. Understanding these differences could further aid firms in decisions about TMT structure. Last, would a different theory, such as contingency or signaling theory, suggest other factors that might influence the presence or absence of a CMO on the TMT?
Conclusion

Institutional theory applied in a marketing context provides a solid framework upon which to examine environmental factors that may influence managerial structure and behavior such as the adoption of a CMO on the TMT. Firm visibility and market power are two such factors that help predict and explain the presence of a CMO on the TMT.
REFERENCES


knowledge; a study of coercive, mimetic, and normative isomorphism.  


Spencer Stuart (2013). Proprietary CMO survey among Fortune 1000 companies.


expertise on the top management team and strategic aggressiveness to financial performance and shareholder value. *Journal of Strategic Marketing, 11* (June), 133-159.


PAPER 1 APPENDIXES
Appendix 1 - Validation Sample
Predicting CMO Presence on TMTs
Hierarchical Logistic Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 1C</th>
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<tbody>
<tr>
<td>Step 1: Constant</td>
<td>β</td>
<td>eβ</td>
<td>β</td>
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<tr>
<td></td>
<td>-3.343</td>
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<tr>
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<td>(0.000)</td>
<td>.000</td>
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<tr>
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<td>(0.003)</td>
<td>-.004</td>
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<tr>
<td>TMT Size</td>
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<td>.044</td>
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<td>CEO Appointment History</td>
<td>-.393</td>
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<td>-.293</td>
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<tr>
<td>Industry Dummy - Materials</td>
<td>.716</td>
<td>(0.811)</td>
<td>.863</td>
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<tr>
<td>Industry Dummy - Industrials</td>
<td>.790</td>
<td>(0.661)</td>
<td>.743</td>
</tr>
<tr>
<td>Industry Dummy - Consumer Discretionary</td>
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<td>(0.554)</td>
<td>-.931</td>
</tr>
<tr>
<td>Industry Dummy - Consumer Staples</td>
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<td>(0.707)</td>
<td>-.710</td>
</tr>
<tr>
<td>Industry Dummy - Healthcare</td>
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<td>(0.694)</td>
<td>1.835*</td>
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<tr>
<td>Industry Dummy - Finance</td>
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<td>(0.808)</td>
<td>-.975</td>
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<tr>
<td>Industry Dummy - IT</td>
<td>-.953</td>
<td>(0.560)</td>
<td>-.876</td>
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<td>Step 3: Main Effects</td>
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<tr>
<td>Firm Visibility</td>
<td>1.662***</td>
<td>(.270)</td>
<td>1.673***</td>
</tr>
<tr>
<td>Market Power</td>
<td>1.228*</td>
<td>(.597)</td>
<td>1.195*</td>
</tr>
<tr>
<td>Industry Orientation</td>
<td>.094</td>
<td>(.130)</td>
<td>.106</td>
</tr>
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<td>Step 4: Moderated Variables</td>
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<td></td>
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</tr>
<tr>
<td>Industry Orientation X Firm Market Power</td>
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<td></td>
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<td>Negelkerke R Square</td>
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<td>.412</td>
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<td>Percent correctly classified</td>
<td>82.1%</td>
<td>83.0%</td>
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n = 575
77.2% Predicted percentage classification without model inputs.
Primary sample reported.
CMO Presence: 1=Present, 0=Absent.
CEO Appointment History: 1=Insider, -1=Outsider
Unstandardized coefficients and standard error reported.
*=.05,**=.01, ***=.001 one-tailed test
## Appendix 2 - Analysis Sample

### Predicting CMO Presence on TMT Defined as Any Marketing Title on TMT

Hierarchical Logistic Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 1C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Constant</td>
<td>-9.839** (3.734)</td>
<td>-8.321** (3.779)</td>
<td>-8.311** (3.779)</td>
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<tr>
<td>Step 2: Control Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm Size</td>
<td>.000** (0.00)</td>
<td>.000 (0.00)</td>
<td>.000 (0.00)</td>
</tr>
<tr>
<td>Firm Age</td>
<td>-.007* (0.03)</td>
<td>-.008* (0.03)</td>
<td>-.008* (0.03)</td>
</tr>
<tr>
<td>TMT Size</td>
<td>.193*** (0.041)</td>
<td>.145** (0.044)</td>
<td>.145** (0.044)</td>
</tr>
<tr>
<td>CEO Appointment History</td>
<td>-.273 (2.09)</td>
<td>-.265 (2.14)</td>
<td>-.265 (2.14)</td>
</tr>
<tr>
<td>Industry Dummy - Materials</td>
<td>2.647** (0.795)</td>
<td>2.595** (0.804)</td>
<td>2.593** (0.804)</td>
</tr>
<tr>
<td>Industry Dummy - Industrials</td>
<td>1.079 (0.647)</td>
<td>.978 (0.651)</td>
<td>.975 (0.652)</td>
</tr>
<tr>
<td>Industry Dummy - Consumer Discretionary</td>
<td>.885 (0.632)</td>
<td>.722 (0.641)</td>
<td>.716 (0.641)</td>
</tr>
<tr>
<td>Industry Dummy - Consumer Staples</td>
<td>.216 (0.744)</td>
<td>-.162 (0.772)</td>
<td>-.150 (0.774)</td>
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<tr>
<td>Industry Dummy - Healthcare</td>
<td>2.048** (0.646)</td>
<td>1.947** (0.650)</td>
<td>1.939** (0.652)</td>
</tr>
<tr>
<td>Industry Dummy - Finance</td>
<td>1.900* (0.769)</td>
<td>1.626* (0.781)</td>
<td>1.622* (0.781)</td>
</tr>
<tr>
<td>Industry Dummy - IT</td>
<td>.406 (0.628)</td>
<td>.359 (0.633)</td>
<td>.355 (0.634)</td>
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<td>Step 3: Main Effects</td>
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<td></td>
</tr>
<tr>
<td>Firm Visibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Power</td>
<td>.337 (0.336)</td>
<td>.346 (0.340)</td>
<td></td>
</tr>
<tr>
<td>Industry Orientation</td>
<td>-.121 (1.03)</td>
<td>-.122 (1.02)</td>
<td></td>
</tr>
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<td></td>
<td></td>
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<tr>
<td>Industry Orientation X Firm Market Power</td>
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<td></td>
<td>-.070 (0.356)</td>
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<td>Chi square</td>
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<td>.296</td>
<td>.296</td>
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<tr>
<td>Percent correctly classified</td>
<td>68.2%</td>
<td>70.1%</td>
<td>69.9%</td>
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</table>

n = 572

50.0% Predicted percentage classification without model inputs.

Primary sample reported.

CMO Presence: 1=Present, 0=Absent.

CEO Appointment History: 1=Insider, -1=Outsider

Unstandardized coefficients and standard error reported.

*=.05,**=.01, ***=.001 one-tailed test
Appendix 3 - Validation Sample
Predicting CMO Presence on TMT Defined as Any Marketing Title on TMT
Hierarchical Logistic Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 1C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>( e^\beta )</td>
<td>( \beta )</td>
</tr>
<tr>
<td>Step 1: Constant</td>
<td>.778  (2.803)</td>
<td>-1.707  (2.910)</td>
<td>-1.705  (2.842)</td>
</tr>
<tr>
<td>Step 2: Control Variables</td>
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<td></td>
</tr>
<tr>
<td>Firm Size</td>
<td>.000* (.000)</td>
<td>.000  (0.000)</td>
<td>.000  (.000)</td>
</tr>
<tr>
<td>Firm Age</td>
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<td>-.005  (0.003)</td>
<td>-.005  (0.003)</td>
</tr>
<tr>
<td>TMT Size</td>
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<td>.121** (0.046)</td>
<td>.121** (0.046)</td>
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<td>CEO Appointment History</td>
<td>.002 (.205)</td>
<td>.055  (0.211)</td>
<td>.054  (0.211)</td>
</tr>
<tr>
<td>Industry Dummy - Materials</td>
<td>.908 (.664)</td>
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<td>.999  (0.678)</td>
</tr>
<tr>
<td>Industry Dummy - Industrials</td>
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<td>-.054  (0.515)</td>
<td>-.054  (0.515)</td>
</tr>
<tr>
<td>Industry Dummy - Consumer Discretionary</td>
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<td>-1.062* (0.479)</td>
<td>-1.062* (0.479)</td>
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<tr>
<td>Industry Dummy - Consumer Staples</td>
<td>-1.338* (.640)</td>
<td>-1.496* (0.668)</td>
<td>-1.496* (0.668)</td>
</tr>
<tr>
<td>Industry Dummy - Healthcare</td>
<td>.291* (.487)</td>
<td>.371  (0.494)</td>
<td>.370  (0.494)</td>
</tr>
<tr>
<td>Industry Dummy - Finance</td>
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<td>-.831  (0.760)</td>
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<tr>
<td>Industry Dummy - IT</td>
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<td>-1.435** (.490)</td>
<td>-1.435** (.490)</td>
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<td>Step 3: Main Effects</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Firm Visibility</td>
<td>.599*** (.154)</td>
<td>.599*** (.154)</td>
<td>.599*** (.154)</td>
</tr>
<tr>
<td>Market Power</td>
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<td>.280  (0.394)</td>
<td>.280  (0.394)</td>
</tr>
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<td>Industry Orientation</td>
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<td>-.043  (0.112)</td>
<td>-.043  (0.112)</td>
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<tr>
<td>Step 4: Moderated Variables</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Industry Orientation X Firm Market Power</td>
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<td>- .020  (.444)</td>
<td>- .020  (.444)</td>
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<td>Negelkerke R Square</td>
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<td>.285</td>
</tr>
<tr>
<td>Percent correctly classified</td>
<td>68.3%</td>
<td>71.5%</td>
<td>71.5%</td>
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\( n = 575 \)

53.9% Predicted percentage classification without model inputs.
Primary sample reported.
CMO Presence: 1=Present, 0=Absent.
CEO Appointment History: 1=Insider, -1=Outsider
Unstandardized coefficients and standard error reported.
*=.05,**=.01, ***=.001  one-tailed test
CHAPTER 3

THE MODERATING INFLUENCE OF CMO PRESENCE ON THE RELATIONSHIP BETWEEN FIRM VISIBILITY, MARKET POWER, AND INDUSTRY ORIENTATION AND FIRM PERFORMANCE

ABSTRACT

Over time, firms that match their top management team (TMT) structure to their environmental context are more financially successful (Keck, 1997). Michel and Hambrick (1992) suggest that marketing expertise on the TMT is critical to creation of shareholder value. The appointment of a chief marketing officer (CMO) to the TMT is one such way firms have attempted to address the needs of their environment to enhance firm performance. Yet, an overarching limitation in the research literature stream examining the importance of a CMO on the TMT is the scarcity of empirical research on the value relevance of the presence of a CMO on firm performance. Addressing this gap is important because of the long-standing debate on the financial relevance of the marketing function (Frazier, 2007; Kerin, 2005; McGovern, Court, Quelch, & Crawford, 2004; Moorman & Rust, 1999; Webster, Malter, & Ganesan, 2003; Zinkhan & Verbrugge, 2000). This is particularly true when the marketing function is represented on the TMT (Abernathy, Kubick, & Masli, 2013; Boyd, Chandy, & Cunha, 2010; Nath &

The decision to include a CMO on the TMT is complex (Nath & Mahajan, 2008). This study provides insight into why prior empirical studies attempting to link the presence of a CMO to firm performance have yielded mixed results. In doing so, this study examines the moderating role of CMO presence on the relationship between firm performance and firm visibility (H1), market power (H2), and industry orientation (H3) through the lens of signaling theory.

Most prior research examining the relationship between a CMO’s presence on the TMT and firm performance has adopted an intra-firm perspective examining the CMO’s impact on internal firm processes. For example, Weinzimmer et al. (2003) suggest that the inclusion of functional marketing expertise in the TMT, such as the CMO’s capabilities, contributes to sales growth, firm profitability, and shareholder value. Boyd et al., (2010) examine CMO managerial discretion in the firm. Nath and Mahajan (2008) examine the relationship between CMO presence and firm-level innovation, differentiation, branding strategy, and diversification. Kashmiri and Mahajan (2010) examine the relationship between CMO presence and strategic behavior among family-named firms. Nath and Mahajan (2011) examine CMO power in the TMT and domains of control in the firm.

Two studies (i.e., Boyd et al. 2010; Vafeas & Vlittis, 2009) have examined the impact of CMO appointment/announcement on firm performance, with contextual/contingent results surrounding favorable changes in firm performance, using announcement-induced stock market returns (event study methodology). In each study,
the authors focus on the conditions that help explain variation in the shareholder reaction, specifically firm-level conditions, such as managerial control, internal versus external appointment, and individual-level characteristics (i.e., prior executive-level experience). The authors suggest that the appointment or announcement itself does not improve firm value but rather that the context of those appointments strongly influence perceived firm performance. More specifically, Boyd et al. (2010) identify individual and firm-specific conditions in which the CMO contributed more or less to firm performance. Similarly, Abernathy et al. (2013) use performance attribution analysis to measure stock valuation of firms with and without a CMO. They also found that enhanced firm value was contextual.

Regardless of the approach, the relationship between a CMO’s presence on the TMT and firm performance has yielded mixed results. For example, Boyd et al. (2010) find only moderated effects on firm performance when examining the shareholder effect of a CMO appointment using abnormal stock price movement of the appointing firm. Nath and Mahajan (2011) report no direct effect of CMO presence on firm performance but suggest conditional effects when CMO power is greater and when CMO responsibility includes the firm’s sales function. Nath and Mahajan (2008) suggest no direct effect when measuring CMO presence and firm performance. Kashmiri and Mahajan (2010) also report no direct effect of CMO presence in their examination of firm performance among family-named firms. Vafeas and Vlittis (2009) suggest that though the market, on average, does not interpret the appointment of a CMO as a signal of improving firm value, certain conditions surrounding their CMO appointment do. For example, CMO experience and background can act as a signal resulting in enhanced firm
value. Conversely, Abernathy et al., (2013) suggest there is a direct effect between CMO presence and firm performance making the presence of a CMO on the TMT “economically relevant.” They report that a portfolio of stocks with a CMO present yields a greater annualized return (approximately 3%) compared to a stock portfolio of firms without a CMO present on the TMT after adjusting for risk. In addition, they also suggest that the effect of a CMO on the TMT is contextual upon firm strategic positioning, profitability, innovation, and magnitude of advertising investment. Thus, unlike prior research examining the direct relationship between CMO presence and firm performance, the main contribution of this study is the examination of the moderating effect of CMO presence on firm performance. Examining the moderating effect is important because inconsistent findings from prior research could be due to a focus on CMO presence as a direct effect rather than on how CMO presence moderates other relationships.

In this study, I use signaling theory to examine the signaling power of CMO presence on firm performance. Signaling theory describes the process decision makers, such as shareholders, use to resolve information asymmetry in competitive environments (Spence, 1973, 1974). Firms intentionally convey information, often about intangible qualities or important non-financial information, to external stakeholders to influence their perceptions (Jones & Murrell, 2001) and manage stakeholder relationships (Clarkson, 1995; Connelly, Certo, Ireland, & Reutzel, 2011; Freeman, 1984).

Appointment of a CMO has been viewed as a signal of increased emphasis on market orientation, and potential improvements in business profitability (Kumar & Petersen, 2005; Lamberti & Noci, 2009; Narver & Slater, 1990).
Using signaling theory, I theoretically and empirically examine the moderating influence of the presence/absence of a CMO on the TMT on three firm-level factors—firm visibility, firm market power, and firm industry orientation (differentiation)—known to influence firm performance (Andras & Srinivasan, 2003; Chung & Jo, 1996; Farris & Buzzell, 1979; Kashmiri & Mahajan, 2010; Kotabe, 1990; Mansfield, 1981; McGahan & Porter, 1997). Thus, the contribution of my study expands the scope of inquiry to examine moderating relationships that no other CMO study has specifically or empirically explored. Furthermore, by examining the signaling power of CMO presence among stakeholders in a non-event context, my study introduces alternative ways CMO presence may contribute to firm performance, thus potentially making unique contributions to the academic and practitioner dialogue on the role of a CMO on the TMT as well as the manner in which firms can enhance firm performance.

In addition, the design of my study explores the operational definition differences of a CMO used by Nath and Mahajan (2008) and Abernathy et al., (2013) and expands the scope of inquiry. Namely, my study narrowly defines the variable of interest “CMO presence” (i.e., someone who expressly holds the CMO title vs. anyone with the term “marketing” in their title). In addition, my study uses a much broader sample, both in breadth of industries and size/number of firms, not subject to the constraints of previous research that allows for a better perspective of the impact of a CMO on the TMT and their relationship to firm performance. Furthermore, instead of employing accounting-based measures or event-based changes in stock value to measure firm performance, I use Tobin’s Q to measure firm performance because it is a market-based measure of firm value that reflects information from signals (Xue, 2005).
Literature Review and Research Hypotheses

Signaling Theory

Prior research suggests that perceptions of firm quality can be enhanced through symbolic sources of information (Sanders & Boivie, 2004). Therefore, firms knowingly use symbols (Rao, 1994) and attributes to signal firm quality (DiMaggio & Powell, 1983; Sanders & Boivie, 2004). A signal can convey a socially constructed meaning beyond its intrinsic content or obvious functional use (Morgan, Frost, & Pondy, 1983).

The act of using symbols and/or adopting formal structures, such as TMT composition (Certo & Hodge, 2007; Zott & Huy, 2007), conveys a signal to the marketplace about the quality, productivity, and viability of the firm. Firms undertake the act of signaling to influence shareholders’ impressions (Rynes, 1991), which Certo (2003) suggests garners greater shareholder interest and results in higher levels of firm performance.

Information that conveys key attributes of the firm shape the impression individuals form of a firm (Reyes, 1991). Signaling theory describes the process individual decision makers use to resolve information asymmetry (Spence, 1973, 1974). Information asymmetry is present when a firm knows its intrinsic quality but outsiders (e.g., lenders, investors) do not (Connelly et al., 2011; Stiglitz, 2002). Firms with greater information asymmetry have more incentive to signal (Xue, 2005). Information asymmetry in various dimensions of the firm can result in unclear perceptions of the firm’s capabilities (Jones & Murrell, 2001). Reducing information asymmetry minimizes both adverse selection and moral hazard (Nayyar, 1990; Stiglitz, 1985).
Higgins and Gulati (2006) suggest that the composition of the TMT can have a symbolic meaning beyond the functional nature of the TMT position. Certo (2003) suggests that the board of directors and board structure assume symbolic roles that are independent of the board’s tangible or functional activities; that is, each role can act as a symbol, signaling important non-financial information to investors when making purchase decisions about shares of initial public offerings.

For these reasons, signaling theory focuses on the actions or attributes insiders intentionally use to communicate positive but otherwise imperceptible qualities (Connelly et al., 2011) about a firm’s products (Kirmani & Rao, 2000) or the firm itself (Ross, 1977). Firms signal to shape the impressions people form about the quality, productivity, and viability of the firm (Rynes, 1991) because impressions lead to investment decisions (Certo, 2003; Certo, Covin, Daily, & Dalton, 2001; Lester, Certo, Dalton, Dalton, & Cannella, 2006). Connelly et al. (2011) define firm quality as the underlying, unobservable ability of the signaler (firm) to fulfill the needs and demands of an outsider (stockholder) observing the signal.

TMT characteristics used to convey firm quality include prestige of TMT members and their educational background (Lester et al., 2006), TMT heterogeneity (Zimmerman, 2008), TMT functional background (Hitt & Tyler, 1991), TMT experience (Cohen & Dean, 2005), and TMT composition (Higgins & Gulati, 2006). Levy and Lazarovich-Porat (1995) suggest that investors are willing to pay a higher price for a firm that signals its quality, ceteris paribus. The question I address here is: does CMO presence/absence on the TMT send a signal about firm quality that affects firm performance?
CMO Presence and Firm Performance

From prior results, is it reasonable to predict that the presence/absence of a CMO on the TMT will directly affect firm performance? On the one hand, empirical research (i.e., Nath & Mahajan, 2008, 2011) specifically examining the direct effect of CMO presence on firm performance suggests that there is no direct effect. On the other hand, Abernathy et al., (2013) and Weinzimmer et al. (2003) suggest that firm performance is directly related to marketing’s inclusion on the TMT.

Kashmiri and Mahajan (2010) and Nath and Mahajan (2008, 2011) report no significant relationship in their empirical examinations of the impact of CMOs on firm performance. When examining strategic behavior and firm performance among family-named firms, Kashmiri and Mahajan (2010) determine that the presence of a CMO on the TMT has no direct effect on firm performance. Nath and Mahajan (2008) find that CMO presence on the TMT has neither a direct positive nor a negative impact on firm performance despite other researchers finding a positive association between CMO presence and firm-level innovativeness (Klomp & Van Leeuwen, 2001), differentiation (Kale & Arditi, 2003), branding strategy (Morgan & Rego, 2009; Rumelt, 1982), and diversification (Varadarajan & Ramanujam, 1987), all firm traits previously associated with firm performance.

Possible limitations in Nath and Mahajan’s (2008) study, however, may have led to inconclusive results. Limitations that may have reduced the statistical power of the analysis include the operational definition of a CMO (anyone with the term ”marketing” in their title), an artificial constraint of the data sample (included only firms with sales greater than $250 million), restriction of the study to industries that were not sufficiently
diverse (heavily skewed toward undifferentiated industries, such as large equipment manufacturing, and raw materials), and use of small sample size among the selected industries (50% of selected industries had fewer than seven observations each). In subsequent research focusing on CMO power in TMTs, Nath and Mahajan (2011) again find no direct relationship to firm performance but suggest that CMO presence can enhance firm performance under certain conditions. These conditions include when TMTs have a relatively high proportion of divisional heads, in which centralized efforts would yield greater performance, or when CMOs have additional responsibility for the sales function.

A different perspective is that the presence of a CMO on the TMT is perceived as a signal of the corporate adoption and corporate status of the marketing concept (Piercy, 1986; Webster, 1981; Webster et al., 2003). Weinzierl et al. (2003) empirically find that the inclusion of marketing expertise, as measured by the presence of a marketing executive (not necessarily a CMO) on the TMT, uniquely contributes to three key financial outcomes: sales growth, firm profitability, and shareholder wealth.

Appointment of a CMO to the TMT is viewed as signaling a potential improvement in firm profitability (Kumar & Peterson, 2005; Narver & Slater, 1990). Although empirical research suggests that a CMO announcement is met in financial markets with positive results, this effect occurs only in the presence of moderating variables (Boyd et al., 2010; Vafeas & Vlittis, 2009). For example, Boyd et al. (2010) empirically find that the impact of a CMO announcement on firm value (stock price) is highly contingent on the managerial discretion afforded CMOs; when customer power is
low (absence of a major customer), perceived managerial discretion is high and linked to higher stock values.

Using signaling theory, Vafeas and Vlittis (2009) find that a favorable change in share price occurs for firms after a CMO announcement but is contingent on the profile of the appointee and the financial situation of the appointing firm rather than the announcement event itself. They observe abnormal stock returns when (1) the newly appointed CMO had prior marketing executive experience, (2) the CMO provided information on the firm’s future marketing strategy, and (3) the firm experienced poor stock price performance in the year before the appointment. Vafeas and Vlittis (2009) also find that financial markets view the appointment of a CMO unfavorably in highly differentiated industries, such as high-technology firms, because such an appointment is perceived as a negative signal about the present quality and future innovativeness of the firm’s product line.

Thus, when present, the CMO position on the TMT has a moderating effect on firm-level outcomes, such as firm performance, and in accordance with signaling theory, the CMO position serves as a symbolic role as well as a functional role on the TMT. This conclusion is supported by prior research that suggests that the presence of a CMO on the TMT helps reduce information asymmetry (Brammer & Millington, 2006) by signaling important non-financial information, such as the presence of intangible assets or rare capabilities in the firm, to firm outsiders. In turn, this action reduces information asymmetry and influences the decisions of stockholders and investors (Connelly et al., 2011) because investors are able to more accurately distinguish between high- and low-quality firms (Connelly et al., 2011; Elitzur & Gavious, 2003; Stiglitz, 2000). Therefore,
rather than considering whether CMOs have a direct influence on firm performance, which has yielded mixed results in previous research, I propose that an indirect or moderating relationship exists between the presence/absence of a CMO on the TMT on three firm-level factors—firm visibility, firm market power, and firm industry orientation (differentiation)—and firm performance. The model in Figure 3 shows the relationships to be tested.

**Figure 3**

Model of Moderating Relationships

CMO Presence, Firm Visibility, and Firm Performance

Firm visibility reflects the extent to which analysts follow and institutions hold a firm’s stock (Baker, Powell, & Weaver, 1999). Firm visibility is important to firms for at least two financial reasons: (1) it helps reduce the risk associated with information
asymmetry (Barry & Brown, 1986) and (2) it provides expert validation of a firm’s present worth and growth potential (Ikeler, 2007). Extant research has used firm visibility as a proxy for the quality of a firm’s informational environment (Lang, Lins, & Miller, 2003).

Merton (1987) suggests that visibility of a firm and its stock lowers cost of capital resulting in an increase in the market value of the firm’s shares. Using Merton’s model, Baker, Nofsinger, and Weaver (2002) report empirical data that support Merton’s assertion that firm visibility reduces the cost of capital. Trueman (1996) finds a positive relationship between firm visibility and stock price. McConnell and Servaes (1990) report a positive direct effect between greater visibility, as measured by the degree of shareholding of institutions and large block owners, and firm performance. Likewise, Kadlec and McConnell (1994) empirically demonstrate the relationship between firm visibility and market-based firm performance, as measured by abnormal increases in stock price. As such, the inclusion of institutional investors in this study is important because prior research reports that “relative to individual investors, the sophistication of institutional investors enables them to more effectively monitor managerial behavior” (Higgins & Gulati, 2006, p. 6).

Firms can increase visibility in several ways. One way is through the development of social capital. Social capital is an intangible, market-based asset capable of creating a competitive advantage (Bamford, Bruton, & Hinson, 2006). Nahapiet and Ghoshal (1998, p. 243) define social capital as “the sum of actual and potential resources embedded with, available through, and derived from the network of relationship possessed by an
individual or social unit.” Gargiulo and Rus (2002) suggest that the social network of a chief executive officer (CEO) is a good indicator of firm visibility.

Likewise, it is anticipated that the social capital of a CMO on the TMT simultaneously improves the informational environment and enhances firm visibility because external interactions of the TMT inherently create visibility while contributing information (Geletkanycz & Hambrick, 1997). Social capital can be obtained by a CMO through relationships with distributors, retailers, customers, and even government agencies (Griffith & Harvey, 2004; Srivastava, Shervani, & Fahey, 1998). Social capital of a newly hired CMO can also provide opportunities that otherwise may not have been available to the firm (Boyd et al., 2010; Griffith & Harvey, 2004). In addition, a CMO can acquire social capital by virtue of membership in social networks and global online resource groups (Porter, 1998), such as the CMO Council, the CMO Institute, and CMOsite.com, to name just a few.

Thus, in accordance with signaling theory (Spence, 1973, 1974), I propose that firms with a CMO on the TMT are better positioned to facilitate the relationship between firm visibility and firm performance than those without a CMO. This is anticipated because the CMO position signals the presence of intangible assets, such as social capital in the firm (Court, 2007; Nath & Mahajan, 2008). In this way, CMO presence on the TMT helps reduce the degree of information asymmetry between TMT executives and stakeholders (Brammer & Millington, 2006) while amplifying firm visibility. For these reasons, I hypothesize the following:

_H1: The relationship between firm visibility and firm performance is moderated by the presence/absence of a CMO on the TMT such that when a CMO is present the relationship is stronger, but when a CMO is absent, the relationship is weaker._
CMO Presence, Market Power, and Firm Performance

To achieve a competitive advantage in the marketplace, firms selectively choose their markets and strategically deploy valued resources (Kerin, Mahajan, & Varadarajan, 1990). A primary way firms achieve a sustainable competitive advantage is through differentiation (Porter, 1980). Prior research indicates that market power is related to a firm’s ability to differentiate (Hay, 2008; Nevo, 1999; Porter, 1998).

Market power is in part determined by the degree of advertising intensity and R&D intensity of a firm (Andras & Srinivasan, 2003; Bain, 1956). The relationship among advertising intensity, profit margin, and firm performance has been empirically supported (Abernathy et al., 2013; Andras & Srinivasan, 2003; Farris & Buzzell, 1979), as has the relationship among R&D intensity, profit margins, and firm performance (Abernathy et al., 2013; Andras & Srinivasan, 2003; Kotabe, 1990; Mansfield, 1981). Market power enables the firm to better leverage assets, enhance legitimacy, and obtain resources of higher quality (Baum & Oliver, 1991).

CMO presence on the TMT can facilitate the relationship between market power and firm performance in three ways. First, the CMO, by virtue of experience and educational background, helps the firm make better marketing decisions that improve firm performance (Pasa & Shugan, 1996), especially in industries with greater competition (Kohli & Jaworski, 1990). Second, the value of firm-level resources, such as market power, is amplified through expert interpretation (Pasa & Shugan, 1996). Within the firm-level context, an organization’s functional expertise also confers greater power to the CMO to moderate firm performance in situations that provide managerial discretion (Boyd et al., 2010). This leads to the following hypothesis:
**H2:** The relationship between market power and firm performance is moderated by the presence/absence of a CMO on the TMT such that when a CMO is present the relationship is stronger, but when a CMO is absent, the relationship is weaker.

**CMO Presence, Industry Orientation, and Firm Performance**

Hull and Rothenberg (2008) suggest industry orientation, or the differentiation within an industry, positively affects firm performance. Companies that differentiate themselves achieve above-average returns (Porter, 1980, 1996; Selling & Stickney, 1989). Some industries, however, lend themselves to higher levels of differentiation than others, and there is evidence that industry-level factors, such as overall levels of differentiation, also affect performance (McGahan & Porter, 1997). Pasa and Shugan (1996) suggest that marketing capabilities lead to decisions that improve firm performance, especially in industries with greater competition (Kohli & Jaworski, 1990).

Thus, it is anticipated that CMO presence moderates the relationship between industry orientation (differentiation) and firm performance for three reasons. First, marketing activities are a principal instrument for addressing the uncertainty inherent in differentiated industries and the CMO is best positioned to reduce the uncertainty. Second, differentiated industries place greater value on experimentation and new strategies, which are activities that fall within the domain of the CMO. Third, differentiated industries provide a broad range of behavior options that afford the CMO greater managerial discretion to leverage firm resources.

Differentiated industries create environmental uncertainty because of the inherent characteristic of heterogeneity (Milliken, 1987). TMTs facing a differentiated
environment have greater information processing needs than management executives in more stable industries (Dess & Beard, 1984). Khandwalla (1977) suggests that marketing activities are a principal instrument for addressing the uncertainty inherent in uncertain environments. Uncertainty related to new product or new market entries also requires the attention of functional experts, such as a CMO, because they approach potential problems with more understanding and frame problems more comprehensively (Read, Dew, Sarasvathy, Song, & Wiltbank, 2009). Nath and Mahajan (2011) suggest that compared with other TMT members, the CMO is best positioned to reduce TMT uncertainty given the customer-related human, institutional, relational, and organizational resources they control.

Differentiated industries also place greater value on experimentation and new strategies because of the broad managerial latitude of available strategic choices (Datta, Rajagopalan, & Zhang, 2003). Knowledge gained through experimentation and firsthand experience is difficult to replicate and cannot be explicitly expressed or taught; as such, it is an intangible firm asset (Barney, 1991; Vafeas & Vlittis, 2009) and a source for competitive advantage (Capron & Hulland, 1999). Firsthand experience also affects how managers approach and arrive at decisions (Vafeas & Vlittis, 2009). Thus, the ability to pursue experimentation is considered a valuable cognitive trait in top executives (Datta & Rajagopalan, 1998) and one that falls within the domain of the CMO (Aaker & Joachimsthaler, 2000).

Signaling theory also supports the notion that the presence of a CMO on the TMT reduces information asymmetry because the position provides a basis for outsiders to make an inference about the firm’s unobservable capabilities, including those of the
CMO (Vafeas & Vlittis, 2009). These capabilities include marketing expertise (Weinzimmer et al., 2003), market sensing (Day, 1994), and managerial discretion (Boyd et al., 2010), all of which are important when attempting to enhance firm differentiation.

Thus, it is anticipated that CMO presence on the TMT facilitates the relationship between differentiated industries and firm performance for two reasons. First, CMO presence on the TMT enhances the degree of firm differentiation so the firm will be more competitive. Second, the presence of a CMO on the TMT signals information about the firm to both investors and competitors, including firm strength, quality, and resource availability (Vafeas & Vlittis, 2009). Consequently, the presence of a CMO on the TMT should amplify the relationship between differentiated industries and firm performance, more so than firms participating in other, non-differentiated environments (Kohl & Jaworski, 1990; Lawrence & Lorsch, 1967).

I posit that firms in differentiated industries with a CMO on the TMT are better positioned to enhance firm differentiation than those without because differentiated industries provide a broad range of behavior options (Haleblian & Finkelstein, 1993). Differentiated industries also afford the CMO greater managerial discretion to leverage firm resources (Datta et al., 2003; Finkelstein & Hambrick, 1988). Thus, I hypothesize the following:

**H3:** The relationship between industry orientation (differentiated industries) and firm performance is moderated by the presence/absence of a CMO on the TMT such that when a CMO is present, the relationship is stronger, but when absent, the relationship is weaker.
METHODOLOGY

Design

Hierarchical regression was used to examine the moderating influence of CMO presence on the relationship between firm visibility, market power, and industry orientation and firm performance. Hierarchical regression was chosen because it is robust, measures both the relationship and the overall strength of the relationship between two variables (Hair, Black, Babin, & Anderson, 2010), and has been used to test the relationships between organizational structures and environmental factors (e.g., Aldrich & Pfeffer, 1976; Pfeffer & Salancik, 1978).

For this sample, calendar years 2010 and 2011 were selected because this period provides a current reflection of TMT structure among U.S. firms and avoids the 2007–2009 economic crises, noted by Business Wire, a global leader in financial and business news, as the worst financial crisis since the Great Depression of the 1930s.

Data Sources

H1, H2, and H3 were tested using secondary data drawn from Capital IQ. Additional or missing data were obtained from annual reports, 10K reports, and other public sources, including Morningstar.com. This data included TMT size and verification of the presence or absence of a CMO on the TMT during the periods examined. The use of secondary data, public databases, and business press to acquire information on publicly traded firms is consistent with prior examinations of CMO presence and firm performance (Abernathy et al., 2013; Boyd et al., 2010; Kashmiri & Mahajan, 2010; Nath & Mahajan, 2008). Furthermore, use of secondary data is advantageous because it
reduces the likelihood of bias and enhances the generalizability of the research findings. This occurs because the population size from which to draw the sample tends to be larger; thus, the sample itself tends to be larger and more representative of the population than primary data-gathering techniques (Sorensen, Sabroe, & Olsen, 1996). Consistent with other studies (McGahan & Porter, 1997) using secondary data sources, this analysis excluded private firms because key variables of interest do not exist or are not reported by private firms.

Sample and Sample Size

This initial data set consisted of a sample of 1,189 firms across 10 different industry groups randomly selected from more than 11,017 public U.S. firms one year or older available in the Capital IQ database. This study expands the scope of Nath and Mahajan’s (2008) examination of CMO influence on firm performance using two-digit Standard Industrial Classification codes. One of the advantages of this study is that it uses the two-digit Global Industry Classification System (GICS). Prior research has shown that GICS codes enhance explanatory power, have a greater correlation across industry peer firms than the Fama–French classification system, and are more parsimonious (Chan, Lakonishok, & Swaminathan, 2007). Prior research also suggests that GICS is significantly better at explaining stock return co-movements, cross-sectional variations in valuation multiples, forecasted and realized growth rates, R&D expenditures, and other key financial ratios important to external investors across different-sized firms than other classification schemes (Bhojraj, Lee, & Oler, 2003).
In addition to an enhanced classification schema, other advantages of this sample include the diversity and number of observations per industry. At the two digit level, the composition of the total sample was as follows: 20 firms in Energy (GICS 10), 65 in Materials (GICS 15), 169 in Industrials (GICS 20), 293 in Consumer Discretionary (GICS 25), 62 in Consumer Staples (GICS 30), 247 in Health Care (GICS 35), 32 in Financials (GICS 40), 272 in Information Technology (GICS 45), 23 in Telecommunication Services (GICS 50), and 6 in Utilities (GICS 55). At the six digit level, 55 industries are represented. Finally, statistical power is gained from the large sample, which drew from all U.S. publicly traded firms, regardless of sales volume. In doing so, the data set was not artificially constrained and did not ignore small or newly established firms. In the past, research has limited sample composition to firms reporting total sales revenue of at least $250 million (Hambrick & Cannella, 2004; Nath & Mahajan, 2008).

Seventy seven observations were deemed to contain missing data and were discarded. The outlier labeling rule (Hoaglin & Iglewicz, 1987) helped identify data outliers within each continuous variable, and 54 were discarded, resulting in a total sample size of 1,058. The sample size provided more than the five observations per independent metric variable required for hierarchical multiple regression (Hair et al., 2010). A Mahalanobis $D^2$ analysis was conducted to identify multivariate outliers across all independent metric variables. No observations met or exceeded the threshold of .001 or less (Hair et al., 2010, p. 66). The resulting sample included 239 observations with and 819 observations without a titled CMO present on the TMT. The proportion of firms in the sample with a titled CMO on the TMT was 22.6%, slightly higher than the average of
19.6% reported by Nash and Mahajan (2008). Table 1 illustrates the range of CMO presence on the TMT by industry. Five industries (Consumer Discretionary, Consumer Staples, Financial, Information Technology, and Telecom) were over-indexed, while five industries (Energy, Materials, Industrials, Health Care, and Utilities) were under-indexed relative to the presence of a CMO on the TMT.

Table 3
CMO Presence by Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>CMO Absence</th>
<th>CMO Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td></td>
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<tr>
<td>Materials</td>
<td></td>
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<tr>
<td>Industrials</td>
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<tr>
<td>Consumer Discretionary</td>
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<tr>
<td>Consumer Staples</td>
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<tr>
<td>Healthcare</td>
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<tr>
<td>Financials</td>
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<tr>
<td>IT</td>
<td></td>
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<tr>
<td>Telecom</td>
<td></td>
<td></td>
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<tr>
<td>Utilities</td>
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</tbody>
</table>

Dependent Variable

The dependent variable of interest is firm performance as measured by Tobin’s Q. Tobin’s Q refers to market capitalization plus the value of the firm’s preferred stock plus debt divided by total assets (Rao, Agarwal, & Dahlhoff, 2004). This market-based measure has been used extensively in prior financial and marketing literature (Lehmann, 2004; Nath & Mahajan, 2008; Rust, Ambler, Carpenter, Kumar, & Srivastava, 2004; Wernerfelt & Montgomery, 1988). Tobin’s Q is a measure that reflects the value of the firm as perceived by its shareholders (Nath & Mahajan, 2008) and captures the degree to
which the market values a firm relative to its replacement cost (Mehran, 2004). Many researchers prefer Tobin’s Q as a measure of firm performance because it is forward looking, is not susceptible to external influences (e.g., industry-specific accounting standards; Anderson, Fornell, & Mazvancheryl, 2004), and, of most relevance to this study, incorporates information from signals in a firm’s valuation (Xue, 2005).

Explanatory Variables

Three independent contextual firm-level variables were examined: firm visibility, market power, and industry orientation. In addition, one moderating variable, CMO presence, was examined across all three hypotheses.

Firm Visibility

The construct of firm visibility consisted of two measures: the number of institutional shares outstanding and the number of institutional shareholders (Ackert & Athanassakos, 2001; Baker et al., 1999; Barron, Byard, Kile, & Riedl, 2002). Both measures are widely used proxies for firm visibility and were obtained through the Capitol IQ database. Thus, the construct of firm visibility was measured as the sum of the geometric mean of the reported number of institutional shares outstanding (NOI) and the number of institutional shareholders (NOS) reported at the close of each calendar year observed. Use of the geometric mean serves to normalize the ranges of two types of variables being analyzed, avoids the issue that one range or variable dominates the weighting, and accounts for the compounding effect (Spizman & Weinstein, 2008).
Market Power

The construct of market power was operationalized with two measures in accordance with prior literature (Nath & Mahajan, 2008; Slotegraaf & Atuahene-Gima, 2011): advertising intensity and research intensity. Advertising intensity was measured by annual advertising expenditures divided by annual sales revenue (Nath & Mahajan, 2008; Willis & Rogers, 1998; Zhang, Zhu, Yue, & Zhu, 2010). Research intensity was measured by annual R&D expenses divided by annual sales (Nath & Mahajan, 2008; Slotegraaf & Atuahene-Gima, 2011). Research intensity affects systematic risk of the firm and analyst recommendations (Barth, Kasznik, & McNichols, 2001; McAlister, Srinivasan, & Kim, 2007). Because the nature of H2 also examines a theoretical construct, market power, it was measured as the sum of the geometric mean of annual advertising expenditures of the firm divided by annual sales revenue (AI) and the annual R&D expenses of the firm divided by annual sales (RI), reported at the close of each calendar year observed.

Industry Orientation

Industry orientation typically classifies industries as either “differentiated” or “non-differentiated,” but degrees of differentiation actually exist. In line with prior research (Grönroos, 1983), differentiated industries refer to industries that provide a variety of product or service offerings to meet the needs and wants of a heterogeneous population of customers. Differentiated industries are of interest because firms operating in differentiated industries are afforded a broad range of strategic options (Haleblian & Finkelstein, 1993) and TMTs greater managerial discretion (Datta et al., 2003;
Consistent with Hull and Rothenberg (2008), differentiated industries are measured using a multi-year average of the advertising intensity in each firm’s industry. Industries with higher advertising intensity are deemed to be highly differentiated industries while those with lower advertising intensity are deemed to be industries with low differentiation. Industry characteristics were ascertained by means of the six-digit industry code representing each firm’s dominant line of business, as determined by GICS. The degree of differentiation was measured by the geometric mean of two years of advertising intensity by industry then standardized using Z-score transformation to reflect the degree of differentiation among industries in the sample.

**CMO Presence**

Finally, the moderating condition of CMO presence/absence was determined through the use of title classifications that expressly state “chief marketing officer,” in keeping with prior research (Boyd et al., 2010). Examination of this characteristic as a moderating variable is supported by prior research (Abernathy et al., 2013; Boyd et al. 2010; Michel & Hambrick, 1992; Vafeas & Vlittis, 2009; Weinzimmer et al., 2003). The moderating variable in question—CMO presence/absence—is a categorical moderator that is non-metric in nature. For the purpose of this study, CMO presence on the TMT was coded as 1, CMO absence was coded as 0.
Control Variables

In accordance with prior research on TMTs and firm performance (Collins & Clark, 2003; Eaton & Rosen, 1983; Finkelstein & Hambrick, 1996; Michel & Hambrick, 1992; Nath & Mahajan, 2008), three control variables were used: firm size, firm age, and TMT size. In addition, dummy variables were created and used as control variables for each industry. First, controlling for firm size addresses the likelihood that large firms have more resource advantages than small firms (Collins & Clark, 2003). Firm size was measured by the total number of employees (Boyd et al., 2010; Covin, Green, & Slevin, 2006; Nath & Mahajan, 2008; Newbert, 2007).

Second, prior research commonly recognizes firm age as influencing firm performance (Anderson & Reeb, 2004; Miller & Chen, 1996; O’Sullivan & Abela, 2007). Firm age was determined by the number of years a firm has been in business (Anderson & Reeb, 2004; Marimuthu & Kolandaisamy, 2009; O’Sullivan & Abela, 2007).

Third, prior research has shown that TMT size affects firm performance (Certo, Lester, Dalton, & Dalton, 2006; Halebian & Finkelstein, 1993). Controlling for TMT size addresses the belief that TMT size determines the scope of the TMT’s information-processing and decision-making capabilities (Halebian & Finkelstein, 1993) and is in accordance with Carpenter, Geletkanycz, and Sanders’s (2004) call to control for team size when examining the effects of the TMT on firm outcomes. Including TMT size as a control also addresses the tendency of large firms to have a CMO on the TMT (Nath & Mahajan, 2008). In accordance with prior research (Carpenter et al., 2004; Walsh, 1989), TMT size was determined by examining each firm’s 10-K or annual report and counting the number of corporate officers listed.
Finally, controlling for industry membership addresses the effects of industry-level variables on firm performance. These effects include profitability (Beard & Dess, 1981), growth (Porter, 1980; Russo & Fouts, 1997), and volatility (Kotha & Swamidass, 2000). Controlling for industry membership also addresses the likelihood that some industries provide greater firm visibility (Solomon, 2012) and market power (Comanor & Wilson, 1967). For the purpose of this study, industry membership was coded as 1 and non-membership as 0.

Analysis

Because H1, H2, and H3 examine the moderating relationship between internal and firm-level contextual variables and a single dependent interval scale variable, hierarchical moderated regression was used. Prior research has deemed this manner of analysis appropriate (Cohen, Cohen, West, & Aiken, 2003; Hair et al., 2010; Matta & Beamish, 2008; Press & Wilson, 1978). This direction of analysis follows Cohen and Cohen’s (1983) suggestion to use moderating variables to identify and better understand the conditions under which hypotheses and theory hold. To express the direction of the relationship, one-tailed tests were used in each hypothesis (Hair et al., 2010). Skewness and kurtosis levels of the dependent and independent variables firm visibility and market power were logarithmically transformed to address positive skewness before analysis. Table 4 provides descriptive statistics of the final sample.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>s.d.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tobin’s Q</td>
<td>0.0700</td>
<td>9.4900</td>
<td>2.5400</td>
<td>1.7200</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2 Firm size</td>
<td>5.0000</td>
<td>440885.0000</td>
<td>14380.6191</td>
<td>47605.9909</td>
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<td>3 Firm Age</td>
<td>2.0000</td>
<td>192.0000</td>
<td>43.0359</td>
<td>35.8076</td>
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<td>.301**</td>
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<tr>
<td>4 TMT Size</td>
<td>4.0000</td>
<td>19.0000</td>
<td>9.5000</td>
<td>2.5890</td>
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<td>.359**</td>
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<tr>
<td>5 Firm Visibility</td>
<td>323.0000</td>
<td>3508318.0000</td>
<td>161580.0974</td>
<td>336367.5474</td>
<td>.144**</td>
<td>.422**</td>
<td>.262**</td>
<td>.583**</td>
<td></td>
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<tr>
<td>6 Firm Market Power</td>
<td>1.8000</td>
<td>430.8400</td>
<td>11.7370</td>
<td>21.2612</td>
<td>.124**</td>
<td>-.069*</td>
<td>-.170**</td>
<td>-.060*</td>
<td>-.077*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Industry Orientation</td>
<td>0.0000</td>
<td>0.0036</td>
<td>0.0007</td>
<td>0.0007</td>
<td>-0.041</td>
<td>.118**</td>
<td>.081**</td>
<td>.172**</td>
<td>.089**</td>
<td>.093**</td>
<td></td>
<td></td>
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<tr>
<td>8 CMO Presence</td>
<td>0.0000</td>
<td>1.0000</td>
<td>0.2300</td>
<td>0.4180</td>
<td>.069*</td>
<td>.299**</td>
<td>.086**</td>
<td>.256**</td>
<td>.408**</td>
<td>-.021</td>
<td>.120**</td>
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<tr>
<td>9 CMO x Firm Visibility</td>
<td>-1.5889</td>
<td>1.7427</td>
<td>0.1226</td>
<td>0.3422</td>
<td>.020</td>
<td>.538**</td>
<td>.207**</td>
<td>.383**</td>
<td>.539*</td>
<td>-.037</td>
<td>.132**</td>
<td>.663**</td>
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<tr>
<td>10 CMO x Firm Market Power</td>
<td>-0.6140</td>
<td>0.5740</td>
<td>-0.0021</td>
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<td>.032</td>
<td>-.111**</td>
<td>-.005</td>
<td>-.064*</td>
<td>-.062</td>
<td>.288**</td>
<td>.072*</td>
<td>-.056</td>
<td>-.119**</td>
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<tr>
<td>11 CMO x Industry Orientation</td>
<td>0.0000</td>
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<td>0.0002</td>
<td>0.0052</td>
<td>-.098**</td>
<td>.155**</td>
<td>.197**</td>
<td>.167**</td>
<td>.114***</td>
<td>.037</td>
<td>.560**</td>
<td>.166**</td>
<td>.206**</td>
<td>.132**</td>
</tr>
</tbody>
</table>

n = 1,058

CMO Presence: 1 = Present, 0 = Absent.

Geometric mean and standard deviation for variables 5, 6, and 7 are reported in Table 2.

To minimize positive skewness and multicollinearity, variables 1, 5, and 6 were logarithmically transformed prior to analysis.

To reflect relative degrees of differentiation within industry orientation, variable 7 was converted to a Z-score prior to analysis.

Firm market power less industry median ratios.

*=.05, **=.01,  significant correlation using one tailed test.
Before the hierarchical moderated regression was run, bivariate correlations were examined. Except for the correlation between the moderating variable CMO presence ($r = .663$) and the interaction term CMO x Firm Visibility, no other correlations approached the .70 threshold suggested in prior research (Dorman et al., 2013; Hair et al., 2010).

Because H1 and H2 contain a construct within each hypothesis, a geometric mean using two variables were created. For H1, the geometric mean of institutional shares and institutional shareholders was created to measure the reflective construct of firm visibility (Ackert & Athanassakos, 2001; Baker et al., 1999; Barron, et al., 2002). For H2, the geometric mean of advertising intensity and R&D intensity was created to measure the formative construct of market power (Nath & Mahajan, 2008; Slotegraaf & Atuahene-Gima, 2011).

To test H1, H2, and H3 (examining the moderating effects of CMO presence on the relationship between firm visibility, market power, and industry orientation and firm performance) an interaction variable was created for each. For H1, the interaction variable was calculated by multiplying CMO presence and firm visibility (the geometric mean of institutional shares and institutional shareholders). For H2, the interaction variable was calculated by multiplying CMO presence and firm market power (the geometric mean of advertising intensity and R&D intensity). For H3, the interaction variable was calculated by multiplying CMO presence and industry orientation (the standardized Z-score of industry advertising intensity). In line with prior literature (Afshartous & Preston, 2011; Aiken & West, 1991; Dawson, 2014; Marquardt, 1980), continuous variables (e.g. control variables) were mean centered before analysis to increase the interpretability of regression coefficients. Excluding the binary moderating
variable, variables of interest were also mean centered before the calculation of interaction terms and subsequent regression analysis (Cohen, et al., 2003, Dawson, 2014).

Table 5 contains the hierarchical regression results used to test the hypothesized moderating relationships of CMO presence/absence on firm visibility (Model 1C), market power (Model 1D), and industry orientation (Model 1E) on firm performance. Variance inflation factor scores reported in the results were compared with the suggested cutoff threshold of 10 (Hair et al., 2010). All scores were below the suggested threshold.

Table 5
Moderating Effect of CMO Presence on Firm Performance
Hierarchical Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 1C</th>
<th>Model 1D</th>
<th>Model 1E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Constant</td>
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<td>Constant</td>
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<td>Firm Size</td>
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<td>.000 (.000)</td>
<td>.000 (.000)</td>
<td>.000 (.000)</td>
<td>.000 (.000)</td>
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<td>Firm Age</td>
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<td>-.001*** (.000)</td>
<td>-.001*** (.000)</td>
<td>-.001*** (.000)</td>
<td>-.001** (.000)</td>
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<td>TMT Size</td>
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<td>-.018** (.006)</td>
<td>-.018** (.006)</td>
<td>-.018** (.006)</td>
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<td>Ind - Energy</td>
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<td>.07 (.189)</td>
<td>.067 (.189)</td>
<td>.071 (.190)</td>
<td>.061 (.189)</td>
</tr>
<tr>
<td>Ind - Materials</td>
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<td>.056 (.173)</td>
<td>.057 (.173)</td>
<td>.055 (.173)</td>
<td>.041 (.173)</td>
</tr>
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<td>Ind - Industrials</td>
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<td>-.072 (.169)</td>
<td>-.071 (.169)</td>
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<td>-.085 (.169)</td>
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<td>-.021 (.169)</td>
<td>-.023 (.169)</td>
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<td>-.041 (.169)</td>
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<td>.090 (.168)</td>
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<td>Firm Visibility</td>
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<td>.163*** (.024)</td>
<td>.148*** (.024)</td>
<td>.147*** (.024)</td>
<td>.147*** (.024)</td>
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<td>Market Power</td>
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<td>.153** (.054)</td>
<td>.155* (.057)</td>
<td>.152** (.054)</td>
<td>.152** (.054)</td>
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<td>-.015 (.015)</td>
<td>-.016 (.015)</td>
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<td>.005 (.018)</td>
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<td>.050 (.035)</td>
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<td>CMO Presence X Firm Visibility</td>
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<td>CMO Presence X Market Power</td>
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<td>CMO Presence X Industry Orientation</td>
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<tr>
<td>Overall Model R²</td>
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<td>.143**</td>
<td>.139</td>
<td>.142*</td>
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<td>.046</td>
<td>.005</td>
<td>.001</td>
<td>.005</td>
</tr>
</tbody>
</table>

n = 1,058
CMO Presence: 1= Present, 0= Absent.
Dependant variable: Tobin's Q.
Change in R² reported for Model 1C, 1D and 1E over Model 1B.
Unstandardized coefficients and standard error reported.
*=.05, **=.01, ***=.001  One-tailed test.
The first part in the hierarchical regression (Model 1A) included only the control variables. The overall control model is statistically significant ($R^2 = .092, p = .000$). Among the control variables, only firm age ($\beta = -.001, p = .001$) was significant.

The second part of the hierarchical regression (Model 1B) measured the direct effects of the independent variables. The addition to the model of firm visibility, market power, industry orientation, and CMO presence was statistically significant ($R^2 = .138, p = .000$) and represented a significant change in $R^2$ over the inclusion of the control variables alone (change in $R^2 = .046, p = .000$). Regarding the direct effect of the independent variables on firm performance, firm visibility was positive and statistically significant ($\beta = .148, p = .000$), and market power was positive and statistically significant ($\beta = .152, p = .005$). However, industry orientation ($\beta = -.015, p = .325$) and CMO presence ($\beta = .042, p = .225$) were non-significant.

The third part of the hierarchical regression (Model 1C) measured the interaction effect of CMO presence on firm visibility and firm performance. The addition of the moderating variable was negative but statistically significant ($\beta = -.148, p = .010$) and represented a small change in $R^2$ over the main effects Model 1B (change in $R^2 = .005, p = .010$).

The fourth part of the hierarchical regression (Model 1D) measured the interaction effect of CMO presence on market power and firm performance. The addition of the moderating variable was not statistically significant ($\beta = .187, p = .326$) and represented no meaningful change in $R^2$ (change in $R^2 = .001, p = .326$) over the main effects Model 1B. The fifth part of the hierarchical regression (Model 1E) measured the interaction effect of CMO presence on industry orientation and firm performance. The
addition of the moderating variable was statistically significant but negative ($\beta = -0.065$, $p = 0.019$) and represented a small change in $R^2$ over the main effects Model 1B (change in $R^2 = 0.005$ $p = 0.019$).

For H1, the regression coefficients show that the interaction of CMO presence with firm visibility was significant but negative ($\beta = -0.148$, $p = 0.010$). Thus, this finding does not support H1: The presence/absence of a CMO on the TMT moderates the relationship between firm visibility and firm performance such that when a CMO is present, the relationship is stronger, but when a CMO is absent, the relationship is weaker.

Figure 4
Interaction between CMO Presence and Firm Visibility on Firm Performance
Figure 4 illustrates the interaction effect of firm visibility and firm performance when a CMO is present or absent on the TMT. In situations where firm visibility is low, the presence of a CMO enhances the relationship between firm visibility and firm performance. However, when firm visibility is high, they do not.

For H2, the regression coefficients show that the interaction of CMO presence with market power was non-significant ($\beta = .187, p = .326$). Thus, this finding does not support H2: *The presence/absence of a CMO on the TMT moderates the relationship between market power and firm performance, such that when a CMO is present, the relationship is stronger, but when a CMO is absent, the relationship is weaker.*

For H3, the regression coefficients show that the interaction of CMO presence with industry orientation is significant but negative ($\beta = -.065, p = .019$). Thus, this finding does not support H3: *The presence/absence of a CMO on the TMT moderates the relationship between industry orientation (differentiated industries) and firm performance, such that in differentiated industries when a CMO is present, the relationship is stronger, but when a CMO is absent, the relationship is weaker.*
Figure 5 illustrates the interaction effect of industry orientation (differentiation) and firm performance when a CMO is present or absent on the TMT. In situations where industry differentiation is low, the presence of a CMO enhances the relationship between industry differentiation and firm performance. However, when industry differentiation is high, they do not.

Finally, because Nath and Mahajan (2008) broadly define CMO presence as any executive on the TMT with the term “marketing” in his or her title, additional analysis was conducted to examine each hypothesis using the broader definition of a CMO. Findings are reported in Appendix 1. Using the broader definition of a CMO, this study found that the position still fails to directly affect firm performance ($\beta = -.042, p = .129$),

\[3\] In addition to CMO, titles included vice president marketing, senior vice president marketing, or executive vice president marketing (Nath & Mahajan, 2008).
consistent with prior research findings (Kashmiri & Mahajan, 2010; Nath & Mahajan, 2008, 2011). Furthermore, using the broader definition of a CMO, none of the hypotheses were supported or statistically significant.

DISCUSSION

The goal of this study was to add empirical evidence to the emerging scholarly discussion (Abernathy et al., 2013; Boyd et al., 2010; Moorman & Rust, 1999; Nath & Mahajan, 2008; Srivastava et al., 1998; Vafeas & Vlittis, 2009; Webster et al., 2003; Weinzierl et al., 2003) on the financial impact of having a CMO on the TMT. I hypothesized that CMO presence contributes to firm performance by signaling the presence and quality of firm-level resources. The application of signaling theory in this manner recognized and examined the signaling effect of CMO presence on the TMT on firm performance (Connelly et al., 2011; Jones & Murrell, 2001; Spence, 1973, 1974). The use of Tobin’s Q as the measure of performance was based on the notion that it reflects the value of the firm as perceived by its shareholders (Nath & Mahajan, 2008) and incorporates information signals (Xue, 2005).

Thus, this study attempted to examine the explanatory power of signaling theory by theorizing that creating a CMO position acts as a sufficient signal to the marketplace to moderate firm performance. Specifically, this study examined the moderating influence of the presence/absence of a CMO on the TMT on three firm-level factors—firm visibility, firm market power, and firm industry orientation (differentiation)—each hypothesized to significantly influence firm performance (Andras & Srinivasan, 2003;

I hypothesized (H1) that CMO presence would moderate the relationship between firm visibility and firm performance, such that when a CMO is present, the relationship is stronger, but when a CMO is absent, the relationship is weaker. I further hypothesized (H2) that CMO presence would moderate the relationship between firm market power and firm performance, such that when a CMO is present, the relationship is stronger, but when a CMO is absent, the relationship is weaker. Finally, I hypothesized (H3) that CMO presence would moderate the relationship between industry orientation and firm performance, such that in differentiated industries when a CMO is present, the relationship is stronger, but when a CMO is absent, the relationship is weaker.

I found the presence of a CMO on the TMT overall negatively moderated the relationship between firm visibility and firm performance; thus, H1 was not supported. One reason for this finding may be because the social capital of CMO’s are low given the low incidence of the position on TMTs in several industries. However, while H1 was not supported, I discovered an interaction that represents an important finding, one that sheds new light on conditions under which a CMO may favorably influence firm performance and that can be explained through the lens of signaling theory. As suggested in Chart 1, having a CMO on the TMT is one way a firm with low firm visibility can moderate firm performance and, ultimately, firm visibility. By including a CMO on the TMT, a firm with low visibility could be interpreted by the market as signaling that the firm has unique resources and is going to undertake initiatives in the future that enhance its firm performance. Another possible explanation for this effect is that a low visibility firm with
a CMO on the TMT could attract sufficient attention to compel more market analysts to take note of and to initiate coverage of that firm. This would in turn lead to increased firm visibility up to the tipping point at which a firm no longer receives signaling benefits associated with a CMO on the TMT. Both possible scenarios offer an explanation of this interaction through the lens of signaling theory.

This study suggested that the presence of a CMO on the TMT would moderate the relationship between market power and firm performance, but no statistically significant support for H2 was found. One possible explanation for the lackluster firm performance in the presence of high market power may be that marketing strategies were not aligned with overall business strategies (Slater & Olson, 2001). For example, one of the primary tasks of marketing is relationship management and the formation and management of strategic alliances (Webster, 1992). Another possible explanation may be that creating market power is inherently resource intensive and profit dilutive and eventually reaches a point of diminishing returns.

Finally, this study suggested that the presence of a CMO on the TMT would moderate the relationship between industry orientation and firm performance; however, no support for H3 was found. This may be because innate environmental forces within differentiated industries provide a broader array of competitive actions (Porter, 1980), offsetting the impact of functional diversity in the TMT, such as having a CMO. Mauri and Michaels (1998) empirically suggest that industry effects are more important than firm effects on firm performance in two instances: technology and marketing strategies. An industry’s life cycle may also alter the influence of CMO presence on the TMT, such as in the degree of proactiveness adopted by a firm (Lumpkin & Dess, 2001).
Contributions

The intended contribution of this study was to expand the scope of scholarly inquiry to include CMO relationships (firm visibility, market power, and industry orientation) that previous research had not specifically or empirically explored. The primary contribution of this study is that it provides support for the notion that having someone with the CMO title on the TMT can moderate firm performance under certain conditions. One such condition is low firm visibility. In keeping with prior literature, this study provided additional empirical support that the CMO position, defined narrowly or broadly, does not directly enhance firm performance (Kashmiri & Mahajan, 2010; Nath & Mahajan, 2008, 2011). The findings also support the notion that a CMO has signaling power in certain conditions, sufficient to convey to outsiders that the firm may or may not possess intangible assets or will undertake potential actions to enhance firm performance, following the findings of Vafeas and Vlittis (2009).

Managerial Implications

From this examination, five implications for firms arise. First, firms should recognize that external stakeholders may not always perceive some positions on the TMT, such as the CMO, as a signal. This may occur because the CMO position is still relatively new within the C-suite and adoption of the position in TMTs remains low, especially in some industries. This is not to suggest that the contributions of CMOs are less important than those of other functional positions; rather, their ability to communicate positive but otherwise imperceptible firm qualities to outsiders may be limited to certain conditions.
Second, this study provides support for the inclusion of a CMO on the TMT under certain conditions. One such condition occurs when firm visibility is low. Third, managers should recognize that external stakeholders view the title of CMO differently than that of other marketing titles (i.e., vice president marketing, senior vice president marketing, or executive vice president marketing) that may be represented on the TMT. Specifically, my study suggests that unless the TMT includes someone with the specific title of CMO, signaling power sufficient to moderate firm level resources on firm performance may not be achieved. Fourth, managers should recognize that while the inclusion of a CMO on the TMT may not directly affect or moderate firm performance in every situation, the position does enhance functional diversity of the TMT (Michel & Hambrick, 1992; Pegels, Song, & Yang, 2000; Weinzimmer et al., 2003; Wiersema & Bantel, 1992). The CMO position also serves to elevate marketing issues to the corporate level (Kerin, 2005; McGovern et al., 2004) and provides a way for the firm to meet the ongoing demand for firm-level information by capital market actors. Finally, the increased presence of CMOs in industries like Consumer Discretionary, Consumer Staples, Financial, Information Technology, and Telecommunications suggest there may be industry specific benefits other than enhancing firm performance for firms operating in those industries.

Limitations

The primary limitation of this study was the inability to reject the null hypotheses in one of the three instances. It should be noted this study had several other minor limitations. First, given the use of Tobin’s Q as the measure of firm performance, the
sample is limited to being comprised of only publicly traded firms. As a result, my sample may be biased because it did not include smaller or younger firms that typically are not publicly traded. This data set was further limited when publicly traded firms elected, for competitive or other reasons, not to report advertising or R&D expenditures during the period examined. The data set was also limited to U.S. firms and observations taken within a two year period.

Second, most observations from the Energy and Utility industries were not included in the final data set because one or more of the data points were deemed outliers from the overall data set and were discarded. Third, this study did not specifically control for performance variation across firms; rather only firm-level characteristics previously suggested to influence firm performance were included. Similarly, this study did not control for variations in CMO power (Nath & Mahajan, 2011), managerial discretion (Boyd et al., 2010), or alignment of marketing strategies with overall business strategies (Slater & Olsen, 2001), all previously suggested to influence performance variation because this study was limited to secondary data. Clearly, more empirical work is needed to define and understand the nature of the relationship between CMO presence and firm performance. Overcoming the limitations of this study, particularly controlling for performance variation, such as CMO power (Nath & Mahajan, 2011), offers future scholars several areas for further investigation.

Future Research

Within the context of this study, several questions remain. Foremost, why do some industries such as Consumer Discretionary and Information Technology have high
concentrations of CMOs on the TMT while others do not? Does the degree of social
capital of a CMO influence their ability to moderate environmental conditions? This
study suggests that future research comparing firms with and without a CMO on the TMT
within these industries would be worthwhile. The outcome of this study also suggested
differences exist between a titled CMO and someone with “marketing” in their title on
the TMT. Understanding these differences could further aid firms in decisions about
TMT structure.

Given the average tenure of the CMO position is just 45 months (Spencer Stuart,
2013); future research should examine the role of duration of CMO tenure, past and
present, as a signal to external stakeholders. Spencer Stuart (2013) reports that CMO
tenure also varies across industries with the shortest tenure in the automotive, restaurant,
and communications/media sectors, averaging between 27 to 31 months, while the
average CMO tenure in technology industries averages 64 months. Thus, a longitudinal
research design could yield important results. Conversely, future research should also
examine the possibility that CMO presence on the TMT may send negative signals to
stakeholders similar to those observed in this study or after CMO appointments (Vafeas
& Vlittis, 2009). Likewise, future research is warranted to gain a better understanding of
the differences, both perceived and functional, between the CMO position and alternative
marketing titles that frequently appear on the TMT. Revisiting prior study designs may
also be warranted using the narrower definition of a CMO.

Further research examining the relationship between CMO presence and firm
performance should examine the relationship through a different theoretical lens such as
contingency theory. A different theoretical perspective may suggest a different
moderating relationship or measure of firm performance than I examined, shedding much needed light on why some firms or industries value a CMO on the TMT while others do not. Examining conditions such as managerial uncertainty or firm legitimacy in the case of new firms may suggest a more appropriate theory to better illuminate the value of a CMO on the TMT. Research that finds statistically significant relationships in these areas will be of value to scholars, firms, and stakeholders alike.

Conclusion

In conclusion, was it reasonable to predict that the presence/absence of a CMO on the TMT would moderate the relationship between firm visibility, firm market power, and industry orientation and firm performance? Conflicting prior research on the direct effect (i.e., Abernathy et al., 2013; Nath & Mahajan, 2008; Weinzimmer et al., 2003) suggests that further empirical examination was warranted. While no direct effect on firm performance was observed in this study, empirical support was found for the moderating influence of CMO presence on the relationship between firm visibility and firm performance, and industry orientation and firm performance, albeit not as hypothesized. Perhaps more important, my findings suggest moderating relationships exist between CMO presence and firm performance that are conditional in nature. For example, the interaction observed between firm visibility and firm performance when a CMO is present or when industry orientation (differentiation) is low, provides valuable new insights into conditions where a CMO may amplify firm level resources and, ultimately, firm performance.
Analysis using a broader title definition of CMO (any title that included “marketing”) similar to Nath and Mahajan (2008; 2011) failed to find a direct effect of CMO presence on firm performance or reject the null hypotheses proposed in all three models. Thus, regardless of CMO definition, my findings were consistent with prior research that suggested no direct relationship between CMO presence on the TMT and firm performance (Nath & Mahajan, 2008, 2011). Finally, the use of signaling theory may have been premature because the CMO position, relative to other, more established positions on the TMT, such as the chief financial officer, is still in its infancy in many U.S. industries.
REFERENCES


Spencer Stuart (2013). Chief marketing officer tenure remains steady at 45 months. Press release.


Appendix 1

Moderating Effect of CMO Presence Using Broader Definition on Firm Performance
Hierarchical Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 1C</th>
<th>Model 1D</th>
<th>Model 1E</th>
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<tr>
<td>Step 1: Constant</td>
<td>1.097***</td>
<td>(.170)</td>
<td>1.119***</td>
<td>(.167)</td>
<td>1.118***</td>
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<tr>
<td>Step 2: Control Variables</td>
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</tr>
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<td>Firm Size</td>
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<td>(.000)</td>
<td>.000</td>
<td>(.000)</td>
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<tr>
<td>Market Power</td>
<td>.156**</td>
<td>(.054)</td>
<td>.152**</td>
<td>(.054)</td>
<td>.173**</td>
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<td>(.028)</td>
<td>-.041**</td>
<td>(.028)</td>
<td>-.043</td>
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<td>Step 4: Moderated Variables</td>
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<td>Overall Model R²</td>
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<td>Change in R²</td>
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<td>.047</td>
<td>.001</td>
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</table>

n = 1,058

CMO Presence / Any Marketing Title on TMT: 1= Present, 0= Absent.
Dependant variable: Tobin’s Q.
Change in R² reported for Model 1C, 1D and 1E over Model 1B.
Unstandardized coefficients and standard error reported.
*=.05,**=.01, ***=.001 One-tailed test.