



Contents lists available at ScienceDirect

## Intern. J. of Research in Marketing

journal homepage: [www.elsevier.com/locate/ijresmar](http://www.elsevier.com/locate/ijresmar)

## Linking marketing capabilities with profit growth

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## ARTICLE INFO

## Article history:

First received in 19 February 2009  
and was under review for 1 month

Area editor: Aric Rindfleisch

## Keywords:

Marketing strategy  
Branding  
CRM

## ABSTRACT

Profit growth is one of the primary drivers of a firm's stock price and therefore is a clear priority for managers. Yet little is known about how a firm's marketing capabilities may be linked with its profit growth. In this study, we use data from a cross-industry sample of 114 firms to investigate how market sensing, brand management, and customer relationship management (CRM) capabilities determine firms' revenue growth and margin growth—the two components of profit growth. Our results reveal that these marketing capabilities have direct and complementary effects on both revenue and margin growth rates. Critically, we find that brand management and CRM capabilities have opposing effects on revenue and margin growth rates, such that a failure to examine these two underlying components would mask the relationships between these marketing capabilities and ultimate profit growth rates.

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## 1. Introduction

Linking marketing activities and resource deployment with financial performance and firm value has become a clear priority among marketing scholars (Rust, Ambler, Carpenter, Kumar, & Srivastava, 2004). Firms expend significant resources on building, maintaining, and leveraging marketing capabilities, and recent research has greatly enhanced knowledge concerning the link between marketing capabilities and firm performance (e.g., Krasnikov & Jayachandran, 2008; Slotegraaf & Dickson, 2004; Vorhies & Morgan, 2005). While researchers agree that firm performance is a complex multi-dimensional phenomenon, growth is clearly a top priority for managers (Day, Reibstein, & Shankar, 2009). Profit growth in particular is widely viewed as being of fundamental importance to investors and managers alike (e.g., Brealey, Myers, & Allen, 2008; Day & Fahey, 1988), not least because investors value firms on the basis of their expected future cash flows (Rappaport, 1997; Srivastava, Shervani, & Fahey, 1998). Despite this, profit growth is an infrequently used measure of firm performance in marketing, and we have limited knowledge concerning the link between marketing capabilities and a firm's profit growth.

In this research, we address this knowledge gap by examining how specific marketing capabilities can influence a firm's profit growth. Our study makes two contributions to the advancement of knowledge in this important domain. First, building on endogenous growth theory from economics as well as resource-based (RBV) and dynamic capabilities (DC) theories from strategic management, we develop a theoretical framework linking a firm's market sensing, brand

management, and CRM capabilities with the two primary components of profit growth—revenue growth and margin growth. Using a data set comprised of both primary and secondary data, we show that a firm's CRM and brand management capabilities have significant but directionally different direct effects on its revenue and margin growth rates. Examining the interaction effects of these three marketing capabilities, we also find that market sensing is primarily important as a complementary capability in determining a firm's growth rate.

Second, we provide new insights into the nature and the marketing capability drivers of firm profit growth. Importantly, we show that the two primary components of profit growth rates—revenue and margin growth rates—tend to move in opposite directions. This suggests that in most circumstances, managers pursuing profit growth are forced to make trade-off decisions. This has important implications for managers seeking to grow their firms' profits in order to maximize their stock value. It also has critical implications for researchers seeking to examine relationships between marketing resources, capabilities, activities, and profit growth. In particular, we reveal that directionally different effects on revenue and margin growth rates mask the effects of a firm's CRM and brand management capabilities on its rate of profit growth.

## 2. Theoretical framework

Much of the research seeking to understand the financial impact of marketing is theoretically anchored in the RBV. This resource-based theory views heterogeneity in resources among firms as fundamental in explaining firm performance, with valuable, rare, inimitable, and non-substitutable resources considered most beneficial (Barney, 1991; Wernerfelt, 1984). However, while the RBV has been an influential theoretical framework in contributing to our understanding of firm

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performance (Peteraf, 1993), it has also been criticized for its inability to explain how firm resources are developed and deployed to achieve competitive advantage (e.g., Lengnick-Hall & Wolff, 1999; Priem & Butler, 2001). To address such limitations, theorists have achieved a number of developments that are collectively labeled dynamic capabilities (DC) theory. DC theory posits that the most significant and enduring source of competitive advantage, rather than being located in the simple possession of idiosyncratic resources, is constituted by the capability of firms to acquire, integrate, and deploy resources in ways that match each firm's market environment (Eisenhardt & Martin, 2000; Morgan, Vorhies, & Mason, 2009; Teece, Pisano, & Shuen, 1997).

From this perspective, a firm's capabilities involve complex, coordinated patterns of skills and knowledge that become embedded as routines over time (Grant, 1996) and are distinguished from other organizational processes as they are performed better than those of their rivals (Bingham, Eisenhardt, & Furr, 2007; Ethiraj, Kale, Krishnan, & Singh, 2005). To the extent that such capabilities are valuable, they may be sources of advantage that are particularly difficult for rivals to compete away, since they are difficult to observe and embedded within the firm (Day, 1994; Grewal & Slotegraaf, 2007). The literature suggests that marketing capabilities in particular may be immobile (Capron & Hulland, 1999), inimitable (e.g., Bharadwaj, Varadarajan, & Fahy, 1993), and largely non-substitutable value-creation mechanisms (e.g., Moorman & Rust, 1999).

As firms strive to improve their financial position and stock value, profit growth becomes a key objective (Brealey et al., 2008). To achieve profit growth, firms can increase sales revenue, margins, or both. When operating within a munificent environment, demand may often exceed supply, creating the potential for simultaneous growth in sales revenue and margins (Dickson, 1992; Keats & Hitt, 1988). However, absent strong market-level growth, a firm can grow its sales revenue and/or margins in only two ways: i) by growing its market share through some combination of increasing unit sales to current customers and acquiring new customers and ii) by raising margins through some combination of raising prices realized for each unit of output sold and/or lowering costs. However, there are often trade-offs between sales revenue and margins, such that these two components of profit growth rarely increase simultaneously (e.g., Markman & Gartner, 2002; Steffens, Davidsson, & Fitzsimmons, 2009). For this reason, we focus on the extent to which marketing capabilities influence revenue and margin growth separately, while accounting for any potential synergies.

Our underlying theoretical logic for expecting a link between marketing capabilities and profit growth is based on endogenous growth theory from economics. Specifically, endogenous growth theory posits that market- and economy-level growth can be affected by firm and government actions that create and disperse "useful knowledge" (e.g., Lucas, 1988; Romer, 1986). Marketing scholars have recently begun to build on endogenous growth theory to link market-based assets and the capabilities by which they are created and deployed with economy-level (Fornell, Rust, & Dekimpe, in press) and market-level (Bharadwaj, Clark, & Kulviwat, 2005) growth. At the firm level, to the extent to which marketing capabilities can be used to create and disseminate useful knowledge (Bharadwaj, et al., 2005), and have the characteristics of value, inimitability, immobility, and non-substitutability (e.g., Vorhies & Morgan, 2005), firms with stronger marketing capabilities should be better positioned to create demand growth and appropriate the accompanying growth in economic rents.

The marketing literature identifies a number of conceptualizations of different marketing capabilities. Here we focus on capabilities that are consistent with both Day's (1994) marketing capability model and Srivastava et al.'s (1998) framework linking market-based assets with cash-flow growth. Day's (1994) focus is on market sensing and the firm's ability to link with end-user and channel customers. Srivastava

et al. (1998) also emphasize the importance of developing market knowledge but distinguish between the creation and leveraging of brand- and customer-based assets. As a result, we focus here on three capabilities<sup>1</sup>. First, *market-sensing capability* reflects a firm's systematic, thoughtful, and anticipatory ability to "learn about customers, competitors, and channel members in order to continuously sense and act on events and trends in present and prospective markets" (Day, 1994: 43). This capability generates superior market knowledge, which is posited to be critical for any dynamic capability (Eisenhardt & Martin, 2000; Grant, 1996). Second, *CRM capabilities* underlie a firm's ability to create and manage close and strong customer relationships (Rust et al., 2004), which have been posited as a key market-based resource that should be linked with cash-flow growth (Srivastava et al., 1998). Third, *brand management capabilities* concern the processes and activities that enable a firm to develop, support, and maintain strong brands (Aaker, 1994; Hulland, Wade, & Antia, 2007), which in turn have been identified as another key resource linked with firms' ability to grow cash-flows (Srivastava et al., 1998).

We investigate the extent to which these three marketing capabilities are directly linked to a firm's profit growth, and also whether there are complementary effects among these capabilities that help to explain profit growth. In examining profit growth, we follow the conventional economic and financial approach and focus on growth rates. As outlined above, while profit growth is desirable, it is difficult to achieve because its primary components—revenue growth and margin growth—often move in opposite directions. We therefore focus our predictions on the direct and complementary linkages between marketing capabilities and rates of growth for the two components of profit growth.

## 2.1. Hypotheses

### 2.1.1. Market-sensing capability

Market-sensing capability concerns a firm's ability to learn about customers, competitors, channel members and the broader market environment in which it operates (Day, 1994). The literature suggests numerous reasons to expect that market-sensing capabilities may be linked with firms' revenue and margin growth rates. From a revenue growth perspective, superior market-sensing capabilities allow a firm to identify underserved segments and those where its rivals' offerings may not be fulfilling customer and channel requirements (Slater & Narver, 2000). These underserved and/or unsatisfied segments provide good targets for the firm's efforts to grow revenue by attracting new customers. The customer intelligence aspects of market sensing should also provide insights for managers concerning opportunities within the existing customer base to expand the share of customer requirements that the firm can exploit (Morgan, Anderson, & Mittal, 2005).

From a margin growth rate perspective, superior market-sensing capabilities provide market insights that enable firms to lower their average costs through more productive resource use by better matching the firm's resource acquisitions and deployments with customer and prospect opportunities (e.g., Hult, 1998; Morgan et al., 2009). Firms that do so are also better able to accurately forecast the value of different resources, which enables them to avoid overpaying for resource acquisitions (Makadok, 2001). Firms with strong market-sensing capabilities are also better able to identify the least price-sensitive customers and prospects, which enables them to charge higher prices. These capabilities should also provide new insights into how a firm's product and service offerings may provide the greatest non-price value to customers and channel members (Slater and Narver, 2000). Finally, superior market sensing allows a firm to learn more and learn faster about customer and competitor reactions to its

<sup>1</sup> Since channel bonding capabilities apply only to firms that sell indirectly to end-user customers, we do not consider this capability here.

past revenue and margin growth enhancement efforts, providing insights that are necessary to allow the firm to increase the rate at which such growth outcomes are achieved (Dickson, 1992). As a result, we expect that:

**H1.** The stronger a firm's market-sensing capabilities, the higher its (a) revenue growth rate and (b) margin growth rate.

### 2.1.2. CRM capability

CRM capabilities are built on two key conceptual foundations. First is a recognition that relationships with customers are more than a series of discrete transactions, with a relationship-level view being more likely to create profitable outcomes for suppliers and greater need satisfaction for customers (Dwyer, Schurr, & Oh, 1987; Verhoef, 2003). Second is an understanding that not all prospective and existing customers are equally attractive from the perspective of a firm's ability to profitably satisfy their needs and requirements (e.g., Mulhern, 1999; Niraj, Gupta, & Narasimhan, 2001). We therefore define CRM capabilities as the firm's ability to identify attractive customers and prospects, initiate and maintain relationships with attractive customers, and leverage these relationships into customer-level profits (e.g., Boulding, Staelin, Ehret, & Johnston, 2005; Day & Ven den Bulte, 2002; Reinartz, Kraft, & Hoyer, 2004).

From a revenue growth rate perspective, strong CRM capabilities focus the firm's attention on the profitability of acquiring prospective customers and retaining existing customers (Bolton, Lemon, & Verhoef, 2004; Reinartz, Thomas, & Kumar, 2005). In focusing only on attracting "high-potential" prospects, firms with strong CRM capabilities are likely to attract fewer new customers (e.g., Mulhern, 1999; Ryals, 2005), which thereby weakens their revenue growth rates. Furthermore, firms with strong CRM capabilities seek to satisfy only those existing customers who are similarly profitable or likely to become so, so that they are continually "weeding out" other less attractive customers (Reinartz et al., 2005). Increases in revenue growth rates caused by raising the share of attractive customers' requirements may not offset the decreases in revenue growth rates that come from divesting less attractive customers (e.g., Verhoef, 2003), thus reducing overall revenue growth rates.

From a margin growth rate perspective, however, CRM capabilities should be more valuable. Firms with strong CRM capabilities should focus their resources on those customers who are the most profitable and those who represent a high potential for future profits (Bolton et al., 2004). Such firms continuously increase their knowledge of and experience with these customers, lowering the cost of serving them over time (Reinartz & Kumar 2000). This may be reinforced by higher customer retention among firms with strong CRM capabilities, leading them to have more experienced users of the firm's products and services, which further lowers the cost of servicing their customers over time (e.g., Ryals 2005). As a result, such firms should be able to increase their margins at a higher rate by continually lowering the average cost of serving customers. In addition, by continuously focusing on customers for whom price is not the only purchase driver, firms with strong CRM capabilities should also be better able to increase realized prices for their products and services (e.g., Cao & Gruca, 2005). This leads us to hypothesize that:

**H2.** The stronger a firm's CRM capability, the (a) lower its revenue growth rate and (b) higher its margin growth rate.

### 2.1.3. Brand management capability

Brand management capabilities reflect the ability not only to create and maintain high levels of brand equity but also to deploy this resource in ways that are aligned with the market environment. Brands with high equity have achieved high levels of brand awareness and brand associations that positively affect customer attitudes and purchase behavior (e.g., Keller, 1993; Netemeyer et al., 2004). Such

strong brands can deliver significant value to the firms that own them (Aaker & Jacobson, 1994). For example, promotions have a greater influence on long-term sales for high-equity brands than for lower-equity brands (Slotegraaf & Pauwels, 2008).

From a revenue growth rate perspective, firms with strong brand management capabilities are able to establish and maintain awareness among prospective and existing customers and to differentiate their products and services in ways that lower their customers' search costs and perceived risk (Berthon, Hulbert, & Pitt, 1999; Hulland et al., 2007). As a result, firms with strong brand management capabilities are likely to enjoy higher revenue growth rates through the attraction of new customers. In addition, by continuously creating perceived differentiation from rivals in ways that add value for customers, such firms should also be better placed to protect their existing revenues from customer "churn" (e.g., McAlister, Srinivasan, & Kim, 2007; Mela, Gupta, & Lehmann, 1997). This means that more of such firms' new customer revenue contributes directly to revenue growth, as opposed to offsetting revenue loss from defecting customers.

From a margin growth rate perspective, building and using the capabilities required to create, maintain, and leverage high levels of brand awareness and strong, positive, and unique brand associations in the minds of target customers is expensive (Keller, 2003). Unfortunately, there are a number of growing impediments to effective brand management that are continually raising costs for firms relying on their ability to develop, maintain, and leverage strong brands. For example, an ever increasing number of different marketing communication messages are creating more and more "clutter" through which firms have to "cut" to effectively reach customers with brand awareness and association messages (e.g., Aaker, 2004). In addition, growing media choices and fragmentation mean that the media costs associated with reaching the same number of customers are rising every year (e.g., Keller, 2003). As a result, firms that rely on brand management capabilities to attract and keep customers are likely to face year-over-year brand building and maintenance cost increases. As a result of higher perceptions of quality (e.g., Aaker & Jacobson, 1994; Erdem, 1998), strong brands should encounter lower price sensitivity among customers (e.g., Allenby & Rossi, 1991). However, unless the average unit prices realized can be continuously raised to cover these cost increases, strong brand management capabilities are likely to be associated with lower rates of margin growth. We therefore hypothesize that:

**H3.** The stronger a firm's brand management capabilities, the (a) higher its revenue growth rate, and (b) lower its margin growth rate.

### 2.1.4. Capability complementarities

Beyond the independent effects of these three capabilities, we are also interested in examining whether capability complementarities exist that may help to explain rates of revenue and margin growth. Capabilities are complementary when the returns to one capability are affected by the presence of another (e.g., Milgrom & Roberts, 1990; Moorman & Slotegraaf, 1999). Such complementarities can be valuable because the interaction between the two capabilities can increase the firm's effectiveness and/or efficiency, as well as limit rivals' ability to successfully imitate the source of this advantage. However, it is also possible that the presence of one capability may attenuate the effectiveness or efficiency of another (King, Slotegraaf, & Kesner, 2008). In light of the potential trade-offs involved in pursuing revenue growth and margin growth, we examine the possibility that the three marketing capabilities on which we focus may produce either positive or negative interaction effects on growth rates.

In terms of a firm's market-sensing and CRM capabilities, we expect a growth-enhancing complementary relationship. CRM capabilities may enhance market-sensing capabilities by providing direction for external market information search efforts (Day, 1994). Moreover, CRM processes are likely to be more effective when

combined with an in-depth knowledge of existing and prospective customers (e.g., Srinivasan & Moorman, 2005), channel members (e.g., Payne & Frow, 2005), and competitors (e.g., Boulding et al., 2005). There are two particular reasons to expect that strong market-sensing capabilities will limit the hypothesized negative impact of CRM capabilities on a firm's revenue growth rate. First, firms with stronger market-sensing capabilities are likely to have a more externally focused orientation (e.g., Day, 1994). This should help to ameliorate the commonly observed internal focus of CRM implementation and its negative impact on the revenue outcomes of CRM investments (Mithas, Krishnan, & Fornell, 2005; Rigby, Reichheld, & Scheffer, 2002). Firms with strong market-sensing and CRM capabilities should also be better able to locate growing market segments and, by understanding latent needs, better serve customers in these segments than do their rivals. Secondly, strong market-sensing capabilities can enable CRM managers to more accurately forecast changes in customer needs and requirements (e.g., Day and Van den Bulte, 2002). This should enable a firm to use its CRM capabilities to more quickly and appropriately adjust the ways in which it serves attractive customers and thereby enhance the firm's ability to grow its share of customer requirements.

Meanwhile, from a margin growth rate perspective, we expect strong market-sensing capabilities to facilitate CRM capabilities by continuously enabling firms to better distinguish high profit potential prospects from others, leading to increasingly higher margin new customers being attracted to the firm (Cao & Gruca, 2005). They may also facilitate CRM by providing superior knowledge about competitors, especially with respect to their value offerings and prices, which should enable firms with strong CRM capabilities to continuously identify the highest price points at which attractive existing customers can be retained (e.g., Boulding et al., 2005). Meanwhile, CRM capabilities may also facilitate the efficient use of market-sensing capabilities by effectively directing external search efforts. Market-sensing capabilities also provide competitor and channel insights that enable managers to more accurately gauge customers' value-offering referents and therefore make better decisions concerning how to allocate resources in serving attractive prospects and existing customers. This should allow firms with strong market-sensing and CRM capabilities to continuously optimize their CRM resource deployments in serving attractive customers. This leads us to expect that:

**H4a.** Stronger market-sensing capabilities will attenuate the negative effect of CRM capabilities on a firm's revenue growth rate.

**H4b.** Stronger market-sensing capabilities will elevate the positive effect of CRM capabilities on a firm's margin growth rate.

We also expect a firm's market sensing and brand management capabilities to exhibit valuable complementarities that may affect firm growth. For example, a firm's brand management capabilities may enhance its market sensing by directing search efforts towards emerging market trends that are most relevant to the firm's desired brand positioning and existing brand associations. From a revenue growth rate perspective, a firm with strong market-sensing capabilities is continuously better able to identify prospective new customers and generate insights concerning their latent needs so that the firm can better position its brands relative to those of its rivals in order to attract these new customers (Aaker, 2004; Hulland et al., 2007). In addition, having more in-depth knowledge of competitors and greater understanding of rival brands also enables a firm with strong brand management capabilities to more effectively position its brands to win a greater share of existing customer requirements (e.g., Keller, 2003). Greater knowledge of marketplace events should also enable managers to more accurately forecast changes in customer needs and requirements, rival offerings, and channel developments (Slater & Narver, 1998). This allows a firm with strong brand management

capabilities to be more proactive in its brand strategy than its rivals and to continuously enhance customer perceptions of the relevance of its brands (Mizik & Jacobson, 2008).

In terms of margin growth rate, we expect market-sensing capabilities to attenuate the negative effects of brand management capabilities in two ways. First, superior market sensing fosters the ability to observe events and trends ahead of competitors, as well as to more accurately anticipate competitive reactions (Day, 1994). It also facilitates the identification of customers' reference prices and fosters an understanding of channel members' strategies, costs and revenue drivers. Such knowledge allows firms to continuously leverage their brand management capabilities by enabling them to raise their brands' realized unit prices wherever and whenever appropriate. Secondly, the superior market knowledge associated with strong market-sensing capabilities allows for better targeting of the resources deployed in building a firm's brands. For example, greater knowledge of changing media usage among customers and prospects should enable better targeting of a firm's media spending as the firm builds and maintains brand awareness and relevant brand associations. This should help to alleviate the negative impact that firms' efforts to build, maintain, and leverage their strong brands has on firm costs. Therefore, we expect that:

**H5a.** Stronger market-sensing capabilities will elevate the positive effect of brand management capabilities on a firm's revenue growth rate.

**H5b.** Stronger market-sensing capabilities will attenuate the negative effect of brand management capabilities on a firm's margin growth rate.

Finally, CRM and brand management capabilities may also exhibit complementary effects that affect firms' growth rates, as brands and customer relationships have both been identified as key market-based assets by which firms generate cash-flows (Srivastava et al., 1998). From a revenue growth rate perspective, strong CRM capabilities should enable firms to continually better distinguish attractive customers (e.g., Cao & Gruca, 2005). These insights may be leveraged via the firm's brand management capability into more successful efforts to increase the firm's share of requirements among the attractive customers identified. Conversely, firms with superior brand management capabilities create and leverage strong brands, and it is likely that synergies are generated when these capabilities and the brand assets they create are used to enhance CRM programs designed to attract new customers, retain existing customers, or recapture prior customers (Ambler et al., 2002).

From a margin growth rate perspective, the efficiencies surrounding better identification and selection of the most attractive customers and prospects in firms with superior CRM capabilities may spill over to other internal processes, enabling more productive resource deployments (e.g., Ryals, 2005). In particular, greater productivity-enhancing insights concerning the most appropriate brand-related resource deployments in these firms should translate into more efficient use of marketing resources and thereby reduce the hypothesized negative effect of brand management capabilities on the ability to lower costs. For example, firms with strong CRM capabilities should have a better developed profile of those prospective customers that the firm should seek to capture. This should allow brand managers to more finely target their brand campaigns and lower the costs associated with using the firm's brand management capabilities to attract the more profitable new customers. We therefore hypothesize that:

**H6a.** Stronger CRM capabilities will elevate the positive effect of brand management capabilities on a firm's revenue growth rate.

**H6b.** Stronger CRM capabilities will attenuate the negative effect of brand management capabilities on a firm's margin growth rate.

### 2.1.5. Overall profit growth effects

Firms are often forced to accept a trade-off between revenue growth and margin growth, so that pursuing growth in one may hamper the firm's ability to simultaneously grow the other. Any examination of profit growth that does not account for this trade-off may therefore mask important effects. Considering the different directions of our hypothesized effects of marketing capabilities on the two components of profit growth, their direct effects on the firm's overall profit growth rate may not be significant. In essence, we anticipate that the hypothesized opposing effects on revenue growth and margin growth will largely cancel one another out, so that a test of the link between marketing capabilities and overall profit growth will likely reveal no significant effects. This may not be the case if some of the marketing capability effects about which we hypothesize are significantly larger than others, but we have no a priori reason to expect such differences. This expectation with regard to the link between overall profit growth rate and the three marketing capabilities is in effect a null hypothesis. As a result, while we examine these relationships in our analyses, we do not offer any formal hypotheses.

## 3. Methodology

### 3.1. Data description

To investigate our hypotheses, we collected primary survey data on the three marketing capabilities from top marketing executives, as well as objective financial data from each firm's annual reports. We focused our survey administration on publicly traded, single-business dominant U.S. companies in seven industries: computer hardware, computer software, electronic equipment, specialty retail, pharmaceuticals, consumer packaged goods, and business services. This approach allowed us to combine primary data estimates of each firm's marketing capabilities with their objective growth performance. To develop our sampling frame, we searched available records for contact information for each publicly traded, single-business dominant firm in each of these industries within the U.S. We then contacted each firm to determine the identity of the top marketing executive and pre-notified each executive concerning the objectives and nature of the research. From this protocol, we were able to acquire contact information for 507 executives at the targeted firms. Following the collection of the primary data, we collected secondary data regarding firm size and financial performance from COMPUSTAT.

We used this multi-data source approach for two key reasons. First, we wanted to limit common method bias by collecting data on independent marketing capability variables and dependent growth variables from different sources. Second, no obvious proxies of our three focal marketing capabilities were available from secondary sources. In addition, standard measures of firm capabilities using archival data adopt input:output conceptualizations (e.g., Dutta, Narasimhan, & Rajiv, 1999) that only capture the efficiency aspect of firm capabilities. This would likely skew results, in that a focus on only the efficiency aspect of capabilities may affect revenue growth and margin growth differently.

We received a total of 121 surveys from primary contact informants, of which 7 were deleted due to excessive omitted data, yielding 114 usable surveys (a response rate of 23.5%). An analysis of non-response bias was performed using the extrapolation approach recommended by Armstrong & Overton (1977). Tests revealed no significant differences between early and late respondents on any of the survey constructs, suggesting that non-response bias is unlikely to be present in the sample. We also conducted *t*-tests on our non-respondent versus respondent firms using secondary data on firm size and revenue. Again, no significant differences were found, thus confirming a lack of non-response bias in the sample.

### 3.2. Measures

We first conducted a pre-test to assess the psychometric properties of the marketing capability measures using data collected from a sample of marketing managers participating in executive education courses at three major U.S. universities. Measure purification was conducted via confirmatory factor analysis (CFA), and modifications were made as necessary. A scale to measure social desirability bias was also included on the pre-test survey. No significant correlations were found between the social desirability construct (Crowne & Marlowe, 1960) and the marketing capability constructs in the pre-test study, thus indicating that socially desirable responses are unlikely to play a role in respondent assessments of the three focal capabilities.

Each of the three marketing capabilities was measured with multi-item measures based on primary survey data. The measures were constructed so that the individual items refer to various necessary and related areas of the unobserved construct (Cohen, Cohen, Teresi, Marchi, & Velez, 1990). The specific measures for each capability used scale items adapted from Vorhies and Morgan (2005) and were designed to tap how well a business undertakes market-sensing, customer relationship management, and brand management activities in comparison to the firm's closest competitors. Each of these measures is provided in the Appendix, with measurement results discussed in Section 4.1.

To measure a firm's profit growth rate, revenue growth rate, and margin growth rate, we first collected data from COMPUSTAT regarding the firm's annual gross profit (DATA12–DATA41), annual total sales (DATA12), and annual gross margin ((DATA12–DATA41)/DATA12). We obtained financial performance data for the year of our primary data collection and the following year for each respondent firm (e.g., Boulding, Lee, & Staelin, 1994) to calculate growth. Specifically, we calculated the growth rate ( $G_{ji}$ ) for profit, revenue, and margin using Eq. (1).

$$G_{ji} = (P_{ji,(t+1)} - P_{ji,(t)}) / P_{ji,(t)} \quad (1)$$

where  $P_{ji}$  refers to performance outcome  $j$  (profit, revenue, and margin) of firm  $i$  in year  $t$ .

We controlled for potential firm-specific and industry-specific extraneous effects in the following ways. First, we controlled for firm size using a log transformation of the number of employees in the firm (COMPSTAT DATA29) (e.g., Moorman & Slotegraaf, 1999). Second, we controlled for the firm's base-year performance. Specifically, when estimating the revenue, margin, and profit growth models, we controlled for the revenue, margin, and profit level of the firm, respectively, in base year ( $t$ ). Finally, since environmental munificence may impact the potential for firm-level profit growth, we also controlled for industry growth rate. To measure industry-level growth, we followed Keats and Hitt (1988) and first calculated industry sales performance for five years using Eq. (2):

$$y_t = \lambda_0 + \lambda_1 t + u_t, \quad (2)$$

where  $y_t$  is a linear transformation ( $\text{Log}_e[\text{Industry sales}]$ ) for year  $t$ ,  $t$  refers to the year, and  $u$  is the residual term. We then used the regression slope coefficient from Eq. (2) for each of the five years to calculate the *industry growth rate* by estimating Eq. (3).

$$IG_t = \ln(\lambda_1) \quad (3)$$

where  $IG_t$  refers to industry growth and  $\lambda_1$  is the regression coefficient from Eq. (2). Using this approach, industry growth reflects a smoothed measure of the average growth rate over the previous five years (Keats & Hitt, 1988).

Descriptive statistics and correlations among key measures are presented in Table 1.

**Table 1**  
Descriptive statistics.

Variable	Mean	Std. dev	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Profit growth rate	0.11	0.62	–							
(2) Revenue growth rate	0.23	0.60	0.48	–						
(3) Margin growth rate	0.01	0.26	0.37	–0.33	–					
(4) CRM capabilities	5.00	1.03	–0.05	–0.06	–0.05	<b>0.60</b>				
(5) Brand management capabilities	4.51	1.17	–0.14	0.14	–0.29	0.51	<b>0.58</b>			
(6) Market-sensing capabilities	4.77	0.83	0.06	0.16	0.00	0.47	0.46	<b>0.51</b>		
(7) Firm size	1.54	2.72	–0.23	–0.32	0.05	0.07	0.17	–0.11	–	
(8) Industry growth rate	1.03	0.07	–0.15	0.13	–0.22	0.15	0.17	0.03	–0.16	–

Note: Descriptive statistics represent unstandardized variables, with correlations exceeding 0.20 significant at  $p < 0.05$ . The average variance extracted (AVE) for the three latent constructs are reported along the diagonal.

#### 4. Analysis and results

##### 4.1. Measurement

An analysis of the psychometric properties of the three marketing capability constructs was first performed using reliability analysis and confirmatory factor analysis (CFA). All measurement items were modeled to load on their corresponding latent variables, and all latent variables were allowed to correlate. This analysis resulted in a final CFA with five items each representing market-sensing capabilities, CRM capabilities, and brand management capabilities ( $\chi^2 = 94.33$ , 62 d.f.,  $p = 0.005$ ; CFI = 0.954; NNFI = 0.942; RMSEA = 0.068). In all cases, the items loaded strongly (loadings range from 0.54 to 0.93) on the constructs they were intended to measure, with little evidence of cross loadings.

To assess convergent validity and reliability, we calculated the composite reliability (CR) and average variance extracted (AVE) for each measure. As shown in the Appendix, the results indicate that the CR for all three marketing capability measures exceeds the 0.7 benchmark and that the AVE exceeds the 0.50 benchmark (Fornell & Larcker, 1981). Discriminant validity was tested by setting the inter-factor correlation equal to one and comparing this result with that of the unconstrained measurement model. A further check of discriminant validity was performed by comparing the AVE to the squared inter-factor correlations. In all cases, discriminant validity was supported. The coefficient alpha, CR, and AVE for each construct are presented in the Appendix.

##### 4.2. Model estimation

To test our predictions, we used seemingly unrelated regression (SUR) for a number of reasons. First, SUR estimation takes into account that the models used to estimate endogenous variables are not based on separate samples and allows for the possibility that the errors across equations are correlated (see Zellner, 1962). This is helpful given the significant negative correlation between revenue growth and margin growth rates ( $r = -0.33$ ) and the significant positive correlations between each of these variables and overall profit growth rate (see Table 1) in our data. Secondly, given that SUR accounts for the correlation between the errors, it produces more efficient estimates than does an ordinary least squares approach (Pindyck & Rubinfeld, 1998). Third, SUR handles the interactions required to test our complementary capability predictions better than does an alternative structural equation modeling (SEM) approach. Moreover, our sample size did not provide sufficient power to test a full-information SEM using the standard 10 observations to 1 indicator guideline (Bentler & Chou, 1987).

We test our hypotheses by estimating a 3-equation SUR model. Specifically, we simultaneously regress firm  $i$ 's rate of revenue growth ( $RG_i$ ), margin growth ( $MG_i$ ), and profit growth ( $PG_i$ ) on the

hypothesized marketing capabilities as specified in the set of Eqs. (4a)–(4c):

$$RG_i = \alpha_0 + \sum_{k=1}^3 A_{ki}MC_k + \sum_{k=1}^3 A_{ki}(MC_i \times MC_k) + \alpha_{7i}R_{it} + A_{gi}X_{gi} + \varepsilon_i \tag{4a}$$

$$MG_i = \beta_0 + \sum_{k=1}^3 B_{ki}MC_k + \sum_{k=1}^3 B_{ki}(MC_i \times MC_k) + \beta_{7i}M_{it} + B_{gi}X_{gi} + \varepsilon_i \tag{4b}$$

$$PG_i = \gamma_0 + \sum_{k=1}^3 \Gamma_{ki}MC_k + \sum_{k=1}^3 \Gamma_{ki}(MC_i \times MC_k) + \gamma_{7i}P_{it} + \Gamma_{gi}X_{gi} + \varepsilon_i \tag{4c}$$

where  $MC_i$  represents firm  $i$ 's marketing capability (CRM, brand management, and market sensing);  $A(k)$ ,  $B(k)$ , and  $\Gamma(k)$  are the coefficient matrices;  $R_{it}$  is revenue of firm  $i$  in base year  $t$ ;  $M_{it}$  is margin of firm  $i$  in base year  $t$ ;  $P_{it}$  is the profit of firm  $i$  in base year  $t$ ; and  $X_g$  is the matrix of remaining firm- and industry-specific control variables.

##### 4.3. Results

We entered the variables into the models by first including only the control variables (Model 1), then adding the main effects of the three marketing capabilities (Model 2), and finally adding the complementary effects across the three capabilities (Model 3). The results indicate that Model 3 explains the highest degree of variance across the three models, and we interpret the results based on this Model.

First, as expected, we find no evidence to suggest that market-sensing, CRM, and brand management capabilities have a significant effect on overall profit growth rates (all three  $p$  values  $> .10$ ) for the firms in our sample (see Table 2). We also find that the interaction effects capturing complementarities between the three marketing capability pairings have no significant effect on overall profit growth rates (all three  $p$  values  $> .10$ ). As seen in Table 2, only firm size ( $\gamma = -0.37, p < .01$ ) and firm profit ( $\gamma = 0.19, p < .10$ ) influence profit growth rate in our data, and the overall variance explained is modest ( $R^2$  of .13).

While still exhibiting relatively modest  $R^2$  values of .24 and .22, our Model 3 regressions containing the marketing capability main and interaction effects clearly explain greater variance in the revenue and margin growth rates of the firms in our sample. When examining the direct effects of the three marketing capabilities and their complementary interaction effects on revenue and margin growth rates, interesting results emerge that are largely in line with our hypotheses. Specifically, we find that market-sensing capabilities have a significant, positive effect on revenue growth rate (0.21,  $p < .10$ ) yet fail to affect margin growth rate (0.04,  $p > .10$ ), offering support for H1a but not H1b. In

**Table 2**  
SUR results: the effect of marketing capabilities on firm growth rates.

	Revenue growth rate			Margin growth rate			Profit growth rate		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<i>Capabilities</i>									
Market sensing (MS)		0.11	0.21†		0.15	0.04		0.10	0.06
CRM		−0.26*	−0.34**		0.12	0.24*		−0.01	0.04
Brand management (BM)		0.23†	0.27*		−0.41**	−0.47**		−0.13	−0.16
<i>Complementary effects</i>									
MS × CRM			−0.11			0.07			0.12
MS × BM			0.26*			−0.25*			−0.11
CRM × BM			−0.15			0.23†			0.08
<i>Control variables</i>									
Firm size	−0.35**	−0.40**	−0.33*	0.03	0.10	0.10	−0.37**	−0.35**	−0.37**
Firm sales $t_0$	0.07	0.13	0.03						
Firm margin $t_0$				−0.14	−0.10	−0.16†			
Firm profit $t_0$							0.17	0.19	0.19†
Industry growth	0.09	0.09	0.14	−0.25*	−0.18†	−0.27*	−0.17†	−0.14	−0.16
<i>Model fits</i>									
Individual regression $R^2$	.11	.19	.24	.09	.19	.22	.10	.11	.13
Model 1 system $R^2 = 0.09$									
Model 2 system $R^2 = 0.15$									
Model 3 system $R^2 = 0.21$									

Note: standardized estimates.  
\*\* $p < .01$ ; \* $p < .05$ ; and † $p < .10$ .

terms of CRM capabilities, our results reveal a significant, negative effect on revenue growth rate ( $-0.34, p < .01$ ) and a positive effect on margin growth rate ( $0.24, p < .05$ ), offering support for both H2a and H2b. Conversely, we find that brand management capabilities have a significant, positive effect on revenue growth rate ( $0.27, p < .01$ ) and a negative effect on margin growth rate ( $-0.47, p < .01$ ), offering support for H3a and H3b. These results are largely consistent with those when no complementary interaction effects are included (see Table 2). Overall, these results support the expected trade-offs between the revenue and margin growth rate components of profit growth rate.

In terms of the complementary marketing capability effects we hypothesized, our results indicate that market-sensing and CRM capabilities do not generate a significant complementary effect on either revenue or margin growth rates. While the signs for these two effects are in the predicted direction, they are not significant and therefore do not support either H4a or H4b. However, we do find a significant complementary effect between market-sensing and brand management capabilities. Specifically, market-sensing capabilities appear to elevate the positive effect of brand management capabilities on revenue growth rate ( $0.26, p < .05$ ) and attenuate the negative effect of brand management capabilities on margin growth rate ( $-0.25, p < .05$ ), offering support for both H5a and 5b. Furthermore, while we do not find evidence of a significant complementary effect between CRM and brand management capabilities on revenue growth rate ( $-0.15, p > .10$ ), we do find that these capabilities generate a significant complementary effect on margin growth rate ( $0.23, p < .10$ ), supporting H6b but not H6a.

Two noteworthy conclusions may be drawn from the overall pattern of results shown in Table 2. First, while the three marketing capabilities and their complementarities do not directly influence profit growth rates, they do influence its underlying revenue and margin growth rate components.<sup>2</sup> Second, the results for revenue

<sup>2</sup> We also estimated a two-equation SUR with only revenue growth and margin growth, and we found similar results for H1–H6. In addition, to further investigate the potential masking effect for overall profit growth, we also estimated an OLS regression model that regressed each of the marketing capabilities, their interactions, and the specified firm-specific and industry growth covariates of  $PG_i$ . Results from this OLS regression also indicate no support for any significant main (or interaction) effects of marketing capabilities on profit growth.

growth and margin growth rates reveal opposing effects that likely mask the effects of the three marketing capabilities on a firm's overall rate of profit growth.

Finally, since our results indicate that the three marketing capabilities have directionally different effects on the revenue growth and margin growth components of profit growth, we further explored the value of these marketing capabilities to a firm's overall profit growth rate. Specifically, we re-estimated the SUR equations, allowing the revenue growth and margin growth rate components to factor into the overall profit growth rate, to allow us to calculate the direct and indirect effects of the three marketing capabilities and their bivariate interactions, about which we hypothesize. This analysis revealed that even though the marketing capabilities we examine have directionally differing effects on revenue growth and margin growth rates, their total effect on firms' profit growth rates is still positive.

### 5. Discussion and implications

Overall, our results provide evidence that marketing capabilities are connected with firm growth rates. Linking marketing actions and capabilities to financial performance has become an important priority for marketing managers and scholars. Our investigation of the link between marketing capabilities and profit growth rate illustrates that there is indeed a significant relationship, yet we uncover very different effects depending on the type of capability. Thus, managers need to be aware, when focusing on revenue growth or margin growth, that different marketing capabilities may have very different effects. Consequently, our research offers important implications in several areas.

First, our results support previously untested endogenous growth theory-based propositions that firms' marketing capabilities should create useful knowledge and thereby influence demand growth. It also provides support for DC theory arguments that firms with superior and complementary capabilities should be better positioned to garner the economic rents associated with demand growth. Tying a firm's dynamic marketing capabilities with the components of profit growth offers new insight into how these two theories may be connected. Importantly, it suggests that endogenous growth theory can be usefully extended by RBV and DC theory to help us

understand firm-level growth, which is an important area for further research.

Second, our research provides insight into the manner in which complementary marketing capabilities can drive a firms' growth performance. Specifically, our results suggest that while CRM and brand management capabilities can have important direct effects on growth rates in both revenues and margins, market-sensing capabilities have a weaker direct effect on revenue growth rate and no direct effect on margin growth rate. However, market-sensing capabilities do offer synergistic effects with brand management capabilities in influencing both revenue and margin growth rates. In line with recent research, our results are consistent with the notion that the superior market knowledge that may result from strong market-sensing capabilities is primarily valuable in determining firm performance indirectly as an input to firms' other value selection, creation, and delivery processes (e.g., Hult, Ketchen, & Slater, 2005; Morgan, Zou, Vorhies, & Katsikeas, 2003).

Finally, the potential masking effect that occurs for overall profit growth rate has important implications for those seeking to link marketing resources and capabilities with firm growth. Our results suggest that both managers and researchers need to be much more aware of the trade-offs that may be implicit in single aggregate measures of performance. For managers, our results suggest that the precise route by which they seek to achieve profit growth must be made explicit and should be well understood, as it appears to have very important implications for the question of which marketing capabilities the firm should build, maintain, and use. For researchers, our results clearly highlight the need for very careful consideration in the selection of dependent variables when studying firm growth. Our study also suggests that using multiple related dependent variables may provide very different insights than the more common use of a single dependent variable, particularly when there is reason to believe that there may be trade-offs among related dependent variables. While researchers often implicitly assume that different dimensions of firm performance generally move in the same direction, our study shows that this may not be the case when it comes to different aspects of firm growth.

### 6. Limitations and future research

As with all research of this type, our study contains a number of limitations that offer avenues for further research. First, we were only able to test our hypotheses with one-year lagged financial performance data, and we were therefore limited in our ability to empirically assess the sustainability of the marketing capability effects we observe on growth performance. While we found important linkages between marketing capabilities and the two components of profit growth, a natural and interesting extension of this study would be to deploy longitudinal research designs to empirically confirm causality and assess growth performance outcomes over time. Second, our goal was to establish the empirical link between marketing capabilities and profit growth. However, our data do not allow us to examine the underlying processes that drive the direct and complementary effects on profit growth rates. Research designed to uncover these underlying processes would provide a valuable complement to our study.

In addition, the significant trade-offs that we find between revenue growth and margin growth rates offer an important avenue for future research. Research that explores whether and how these trade-offs may be managed to allow firms to simultaneously increase both components of profit growth would be particularly valuable. Clearly, the trade-off may not exist when demand exceeds supply, but a critical question is whether specific actions and investments may mitigate this trade-off for individual firms. There is unlikely to be an obvious answer to this question; otherwise, we would not have seen the significant negative correlation between revenue and margin

growth rates. Nonetheless, RBV theory suggests that executing strategies that successfully manage such complex trade-offs may offer a source of competitive advantage that is particularly difficult to imitate (e.g., Reed & DeFillipi, 1990). However, a competing IO theory viewpoint suggests that when faced with two performance objectives that may have inherent trade-offs with one another, managers should seek to maximize one objective, i.e. either revenue growth or profit growth, or risk getting "stuck in the middle" (e.g., Rust, Moorman, & Dickson, 2002). Research addressing this question would clearly have important implications for both theory and practice.

Finally, we uncovered significant negative effects of CRM capability on revenue growth rates and of brand management capabilities on margin growth rates. An important question for future research is whether there are specific ways in which these negative effects can be ameliorated without damaging the significant positive effects of each capability. Much has been written about inwardly focused execution as a rationale for the common failure of CRM investments to create expected profit growth outcomes (e.g., Rigby et al., 2002). Nevertheless, we fail to find significant effects of market-sensing capabilities in lessening CRM's negative effects on revenue growth. What other types of resources, capabilities, or execution choices lessen these negative effects without simultaneously weakening the observed positive effect of CRM on margin growth? Similar but less well documented is the expense many firms bemoan as being associated with building, maintaining, and using brand management capabilities. While market sensing appears to play a useful complementary role in mitigating brand management capability's negative effect on margin growth, what other complementary resources and capabilities may also help slow cost increases and raise realized price increases without damaging the positive top-line revenue growth benefits of strong brand management capabilities? These are clearly questions of fundamental importance for both researchers and managers.

### 7. Conclusions

This study is the first to examine the linkage between marketing capabilities and firms' revenue growth and margin growth performance. Our results clearly indicate that marketing capabilities can explain significant variance in these two components of firms' profit growth performance. Importantly, however, we find that revenue growth and margin growth rates are significantly negatively correlated. Our results further suggest that CRM and brand management capabilities have directionally opposing effects on revenue and margin growth rates, such that their direct effects on the rate of profit growth are masked. We also find that firms' market-sensing capabilities are primarily valuable in determining financial growth via their complementary effect on firms' CRM and brand management capabilities.

### Acknowledgments

The authors all contributed equally to this work. We wish to thank the Marketing Science Institute for financial support of this project and the Editor and AE for their constructive guidance.

### Appendix A. Primary marketing capability measures

Construct label and items
<b>Market-sensing capabilities</b> (7-pt. scale, relative to competitor anchors) $\alpha = 0.87$ , $CR = 0.85$ , $AVE = 0.51$ Learning about customer needs and requirements. Discovering competitors' strategies and tactics. Gaining insights about the channel. Identifying and understanding market trends. Learning about the broad market environment.

(continued on next page)



## Appendix A (continued)

Construct label and items
<b>Brand management capabilities</b> (7-pt. scale, relative to competitor anchors) $\alpha = 0.89$ , CR = 0.87, AVE = 0.58 Using customer insights to identify valuable brand positioning. Establishing desired brand associations in customers' minds. Maintaining a positive brand image relative to competitors. Achieving high levels of brand awareness in the market. Leveraging brand equity into preferential channel positions.* Tracking brand image and awareness among target customers.
<b>Customer relationship management capabilities</b> (7-pt. scale, relative to competitor anchors) $\alpha = 0.78$ , CR = 0.79, AVE = 0.60 Identifying and targeting attractive customers. Establishing a "dialogue" with target customers.* Getting target customers to try our products/services. Focusing on meeting target customers' long-term needs to ensure repeat business. Maintaining loyalty among attractive customers. Enhancing the quality of relationships with attractive customers. Maintaining positive relationships when migrating unattractive customers. *

\*Item dropped from the scale during measure purification.

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