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This article reviews the theory and empirical evidence of myopic management as it pertains to marketing practice. It documents empirically the stock market's inability to properly value marketing and innovation activity in the face of the potential for myopic management. The author assesses the total financial consequences of myopic management (the practice of cutting marketing and research-and-development spending to inflate earnings) and finds that myopia has a long-term net negative impact on firm value. Myopic management is contrasted with accounting accruals-based earnings inflation, and the author shows that the real activities (i.e., myopic management), and not the accounting numbers manipulation, have the greater negative impact on future financial performance. These results are consistent across alternative abnormal return measures and alternative benchmarks. The author argues that shareholders, managers, and marketing researchers can play a role in limiting myopic management practices.

*Keywords*: myopia, myopic management, earnings management, accounting accruals, real activities

# The Theory and Practice of Myopic Management



Managers have a wide array of alternative strategies they can undertake in running a business. These different alternatives yield differing cash flow streams. Effective management requires a long-term focus and choosing strategic alternatives that yield an overall highest expected net present value (i.e., strategies that maximize the sum of the expected discounted future profits). Thus, the strategic alternatives managers select depend both on the expected cash flow stream and on the discount rate they use. The discount rate is what determines the appropriate balance between current- and future-term benefits. Increased managerial discount rates can lead to inefficient decision making and can adversely affect a firm's future performance. Specifically, managers focusing on short-term goals overemphasize strategies with immediate payoffs at the expense of strategies with superior but more distant payoffs—that is, they engage in myopic management.

In theory, under perfect information and with efficiently designed incentives, managerial discount rates depend only on the cost of capital, and managers make decisions in the best interest of the owners. In reality, however, managers are often better informed than the owners, and their incentive structures are not perfectly aligned with owners' objectives. Managers often face incentives and feel pressures that increase their effective discount rates and lead to an overemphasis on short-term goals. For example, managers feel pressure to meet earnings projections because the financial markets punish companies (e.g., driving down their stock price) that fail to meet analysts' expectations. At times, managers' personal motivation (e.g., career advancement considerations) and compensation structure might also increase the discount rates they use. For example, when managers approach retirement or the expiration of their stock option grants, they desire a higher stock price and might try to manipulate the signals they send to the stock market in an attempt to inflate the stock price and maximize their personal income from the options sale.

In practice, manipulation of performance signals can be undertaken through myopic management (manipulation of real activities) and accounting-based earnings management (discretionary accruals manipulation). Because managers can use judgment in financial reporting (e.g., accelerating recognition of revenues, capitalizing rather than expensing some costs, delaying write-offs, understating bad debt) and

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in structuring transactions, they can manipulate discretionary accruals (i.e., components of earnings subject to accounting discretion) to alter earnings numbers in financial reports (Healy and Wahlen 1999). While such practices can have negative consequences for a firm when uncovered (DuCharme, Malatesta, and Sefcik 2004), they do not affect the foundations of firm business performance and do not alter either the amount or the temporal flow of true economic profits.

Conversely, myopic management, such as underinvesting in research and development (R&D), advertising, and employee training for the purpose of meeting short-term goals, will affect economic profits. Myopic management involves altering operational practices and directly affects the business process. When initiated at the top organizational level, myopic management poses particular challenges to marketers. Both anecdotal and empirical evidence suggest that marketing is often treated as discretionary. For example, marketing spending is commonly the first line item cut in an economic downturn or when managers fear they might not be able to meet their earnings targets (Deleersnyder et al. 2009; Graham, Harvey, and Rajgopal 2005; Lamey et al. 2007). Indeed, many marketing activities affect intangible assets with long-term effects on business performance (e.g., brand equity, customer loyalty), which often also require substantial immediate costs to support them.

The situation is further exacerbated because relatively little is known about the full impact of marketing assets and strategies on financial performance and firm value. Rust and colleagues (2004) comment that marketers have not been held accountable for showing how marketing expenditures add to shareholder value. The inability to quantify and communicate marketing's contribution to the bottom line and the long-term survival of the firm creates the unfortunate state in which marketing is undervalued and is viewed as a discretionary activity. Recent research has begun to explore empirically some myopic marketing management practices (e.g., Chapman and Steenburgh 2009; Mizik and Jacobson 2007; Moorman and Spencer 2008). Thus far, however, the empirical research into managerial myopia has been sparse, has rarely focused on the consequences of myopia, and is often based on a narrowly defined specific context (e.g., quarterly sales targets, seasoned equity offerings [SEOs]). Many questions remain unanswered and provide an exciting and important area for research.

The key objective of the current study is to assess the market's ability to properly value marketing and innovation activity in the face of the potential for myopic management and to quantify financial consequences of myopia. Specifically, this study examines the consequences of cutting support for core marketing and innovation capabilities at the time a firm experiences enhanced financial performance. The study also examines the role of accounting accruals-based earnings management and shows that the long-term negative effects of myopia are significantly more severe. Prior research on myopic practices is advanced in two notable aspects: (1) The current study is a large-sample attempt to assess consequences of firm-level myopic management (i.e., in contrast to prior research, this study uses a very general context), and (2) it examines the relative impact of myopia versus accounting-based earnings management. The context-free firm-level setting allows for broad generalizations about the financial market's ability to properly value firm strategies and about the consequences of myopia.

This article proceeds as follows: First, the theory of myopic management is reviewed; the empirical evidence of the phenomenon available to date, as it applies to marketing theory and practice, is discussed; and the hypotheses are presented. Second, empirical modeling and data are discussed, and the results are presented. The article concludes with a discussion of the unique challenges marketing managers face in dealing with myopia and argues that shareholders, managers, and marketing researchers can play a role in limiting myopic practices.

## *THE THEORY OF MYOPIC MANAGEMENT*

The phenomenon of myopic management has long attracted significant academic interest. Extensive theoretical inquiry into the principal–agent problem has generated valuable insights into the conditions that encourage managerial myopia. Grant, King, and Polak (1996) survey the theoretical work related to the managerial myopia problem. Two major frameworks—hidden action models and hidden information models—explain the mechanisms leading to myopic practices.

### *Hidden Action Models*

Under perfect information conditions, basing managerial compensation and incentives on the stock price results in efficient managerial decision making. This theoretical finding explains the attractiveness of using stock options and stock grant incentives in employee compensation schemes. However, after information asymmetries are introduced into the modeling, the economic outcomes differ significantly from the outcomes of the perfect information models. When managerial compensation is linked to stock market performance, managers might attempt to manipulate the share price rather than strive to maximize the firm value.

Narayanan (1985) and Stein (1989) develop theoretical models in which managers can take actions the principal cannot observe perfectly. Specifically, managers have the ability to manipulate the earnings flow (and thereby influence their stock price) at the expense of future long-term earnings. They can shift future income to the present at a certain cost. The principal/owner can observe the distorted earnings in each period but cannot decompose reported numbers into the "true" and "distortion" components. In other words, the principal cannot determine whether reported earnings are good predictors of future financial performance or whether they come at the expense of future performance. Managerial incentives to engage in myopia and manipulate current earnings increase with the importance managers attach to their current-period earnings and current stock price.

### *Hidden Information Models*

Myopic management can also occur when managers (1) care about their stock price and (2) have private information unavailable to the stock market. Under these conditions, myopic management takes place even if the principal is able to perfectly observe the manager's actions. Because the stock market may try to infer the private information managers

have from firm actions, some managers might manipulate their actions to create a favorable market reaction.

*Signaling*. Signaling models, first introduced by Spence (1973), provide a private information framework that demonstrates how myopic outcomes can occur. In a signaling framework, firms face good or bad prospects (or are more or less efficient) that are unobservable by the market. To inform the market about their advantageous prospects, firms can send a signal to the market about their state, for example, by choosing a higher (lower in the case of better efficiency) investment level (Bebchuk and Stole 1993; Bizjak, Brickley, and Coles 1993; Trueman 1986) or by choosing a specific project type (Hirshleifer, Chordia, and Lim 2001). Depending on the cost and payoff conditions, a separating equilibrium may result, in which managers make efficient investment decisions and the market values them properly.

However, this outcome does not always occur. Under certain conditions, firms with poor prospects might try to mimic the behavior of good-type firms in hopes of fooling the stock market into believing that they are facing good prospects. Such signal-jamming behavior breaks the optimal separating equilibrium and may force good firms to invest at an even greater (lower in the case of better efficiency), nonoptimal level to separate themselves from the bad firms. Bizjak, Brickley, and Coles (1993) argue that the greater the value managers place on current stock price relative to future profits and future stock price, the more likely they are to engage in signal jamming. They also argue that myopic behaviors are more likely to occur the more managerial remuneration depends on current stock price and the higher the probability that the manager will depart the firm (retire) in the near term.

Depending on model specifications, signaling models can yield outcomes in which myopic incentives lead to over- or underinvestment or result in a suboptimal choice of a particular project type. Milgrom and Roberts (1992, p. 471) comment that, in general, managers "put too much emphasis on activities that boost short-term performance compared to those whose benefits will be hidden."

*Lemons problem*. At the extreme, when good firms do not have the ability to credibly signal their quality and separate themselves from the bad-quality firms, the lemons problem occurs. Akerlof (1970) first described the lemons market mechanism, and when applied to firms, it predicts that firms with good prospects might completely forgo a profitable opportunity and stay out of the market (e.g., Myers and Majluf 1984). This outcome might occur, for example, when firms need equity financing to undertake a lucrative project. This result occurs because high-quality firms cannot get a fair price for their new equity and would end up cross-subsidizing and diluting the value of their existing equity, thus making a profitable opportunity result in an overall negative payoff for the firm.

*Information neglect*. Information neglect is yet another private information framework in which myopic managerial behavior might occur. Information neglect models do not rely on existence of good and bad firm types but require management to have better information than outsiders or better ability to evaluate available strategic options. In information neglect models, myopia occurs because (1) the stock market uses available public information and forms a general opinion about the best course of actions for a firm and (2) managers cannot credibly reveal their better private information about the firm prospects. When managers care about their stock price, rather than acting on their better private information and making optimal investments for the firm, they may instead choose projects the stock market believes are in the best interest of the firm (e.g., Brandenburger and Polak 1996).

### *Implications for Marketing*

Theoretical models show that managerial myopia can take many shapes and forms depending on the context. It can manifest in an underinvestment in long-term assets, an overinvestment in short-term assets, a choice of specific projects, or conformism with the market's belief. All these strategies can involve marketing assets and strategies. Stein (1989) argues that in an attempt to manipulate earnings, myopic managers sacrifice assets that are not on the balance sheet and are not directly related to production. In many firms, marketing assets fall into this category. Furthermore, Paul (1994) comments that managers are not systematically biased toward short- or long-term projects, but rather are biased toward projects the stock market can best evaluate in the short run. Here again, marketing is at a disadvantage because relatively little is known about marketing's long-term financial impact (Rust et al. 2004).

These considerations highlight the particular importance for marketing researchers to address the value of marketing assets and quantify their contribution to long-term performance. It is also important for all stakeholders to understand the phenomenon of managerial myopia and appreciate its sources, manifestations, and consequences.

## *THE EVIDENCE ON THE PRACTICE OF MYOPIC MANAGEMENT*

While much research effort has focused on studying accounting-based earnings management (for a review, see Dechow and Schrand 2004), few studies in the accounting and marketing literature have examined management practices associated with the myopic management phenomenon. The most comprehensive, perhaps, is the exploratory survey by Graham, Harvey, and Rajgopal (2005), who conducted interviews and surveyed top company executives (chief financial officers) about their attitudes toward and strategies for earnings management. Graham, Harvey, and Rajgopal find that when faced with a possibility of falling below their desired quarterly earnings target, 80% of chief financial officers (the highest-rated option) reported that they would decrease discretionary expenditures, such as advertising and R&D; 55% reported that they would delay a start of a new project, even if such a delay led to a sacrifice in value; and 39% reported that they would provide incentives for customers to buy more products in the current quarter. These results suggest that managers are willing to disrupt normal operating processes and harm future cash flows for the sake of achieving short-term goals. These results also show that marketing activities, assets, and funding commonly provide the means and resources for achieving such myopic goals.

Myopic practices can occur at all levels of the organization—at the very top, where resource allocation and investment decisions are made, and at the very end of the channel, where consumer interactions occur. Dechow and Sloan (1991) examine managerial behavior around the end of the

top managers' tenure (i.e., hidden information setting) and find that firms tend to reduce R&D spending in the final year before the top executives' retirement. Bushee (1998) investigates the role of institutional investors and managerial incentives for myopic behavior; specifically, he examines the use of R&D cuts as a means to reverse a decline in earnings and finds that firms with high institutional ownership have a lower probability of cutting R&D spending to reverse earnings decline because monitoring by institutions reduces pressures for myopic behavior. However, he also finds that when a large proportion of institutional investors exhibit transient ownership characteristics, consistent with reduced monitoring of the management team, firms have a greater probability of decreasing R&D. Roychowdhury (2006) reports evidence of firms overproducing and giving price discounts to temporarily boost sales to increase earnings when they are close to a zero-earnings benchmark.

Marketing literature also provides ample examples of myopic behaviors at the product–market level in pricing, branding, and product management contexts. For example, Hauser, Simester, and Wernerfelt (1994) discuss a general trade-off employees face in allocating their effort between actions that influence current sales and actions that influence future sales. They note that employees are typically more focused on the short term than what is optimal for the firm and advocate increased use of customer satisfaction–based performance evaluation measures as a means of motivating focus on long-term profits. Lehmann (2004) points to a widespread overconcern about short-term results, proposing that multiple performance metrics should be used at all levels of the organization to remedy the short-term bias.

Aaker (1991) discusses myopic management practices related to brand equity. He focuses on the practice of milking brand equity by reducing brand-building support and by increasing sales promotions. He notes that though a decline in brand equity is not immediately noticeable, these strategies allow managers to provide immediately observable improvements in financial results. Chapman and Steenburgh (2009) document myopia at the retail level. They find that some firms attempt to increase sales by offering price discounts on nonperishable groceries at the end of a fiscal quarter, though no such discounting occurs for perishables in their product portfolio. The motivation is to promote goods that consumers can stockpile, thus shifting sales and earnings from the future to the current fiscal period. Markovitch, Steckel, and Yeung (2005) present evidence of an information neglect phenomenon. They report that firms change their strategy in response to the stock market reaction: While well-performing firms focus on long-term R&D and marketing strategies, poorly performing firms undertake acquisitions aimed to produce immediate revenue improvement.

Although the evidence on the existence of myopic management practices is more established, the long-term financial consequences of myopic management have received relatively little empirical study. Research in marketing has examined and documented the mechanisms and negative consequences of several short-term-focused marketing strategies myopic managers might utilize. For example, much attention has been devoted to the study of reference price effects and the negative consequences of teaching the consumer lower reference price through promotions or discounting (e.g., Erdem, Mayhew, and Sun 2001; Mazumdar, Raj, and Sinha 2005; Mela, Gupta, and Lehmann 1997; Mela, Jedidi, and Bowman 1998; Pauwels, Hanssens, and Siddarth 2002; Pauwels, Silva-Risso, et al. 2004).

Lamey and colleagues (2007) examine the dynamics of the store and national brand shares over the business cycle and find that national brands lose share during recessions and do not fully recover their positions in expansion periods. They argue that, in addition to weaker demand and greater consumer price sensitivity, the tendency of the national brands to cut marketing support exacerbates their share loss. Deleersnyder and colleagues (2009) present similar evidence: Too much contraction in advertising spending during recessions is associated with lower stock price performance. Mizik and Jacobson (2007) focus on cuts to marketing spending by firms issuing SEOs and report that firms engaging in myopic marketing management at the time of an SEO have significantly lower long-term performance than other SEO firms. Moorman and Spencer (2008) examine the patterns of new product introduction timing by private and public firms and document evidence consistent with an information neglect phenomenon: Some public firms are playing a ratchet game, slowing down introduction of innovations to manage down stock market expectations and to manage up market reaction. Although the ratchet game strategy appears to work (stock market reaction to ratchet strategy is positive), it is costly because firms realize greater potential revenue losses.

## *HYPOTHESES*

Theoretical models of asymmetric information show that incentives for myopic behavior increase with the market's inability to recognize and evaluate the long-term consequences of managerial actions. The choice of specific tools and strategies managers use to achieve myopic goals is also driven by the market's ability to assess the value and impact of these tools and strategies on firm long-term performance. This situation presents a challenge for marketers because most marketing assets are intangible, and until recently, relatively little effort has been devoted to understanding how marketing assets affect financial performance (Srinivasan and Hanssens 2009).

How informed are market participants about the benefits of marketing and R&D, and do they appreciate the inherent trade-off between high profits and the need to invest in long-term marketing and innovation capabilities? Is the market able to distinguish and appreciate considerations related to myopia? In other words, does it *properly* (i.e., fully and timely) value myopic management strategies as they occur, or does it take time, until after the benefits of these strategies are reflected in the bottom-line financial performance, for the market to fully appreciate their value? To assess whether the market is properly valuing marketing capabilities, it is necessary to assess (1) the immediate market reaction and (2) whether an additional valuation adjustment occurs in the future. Any evidence of future adjustment would mean that the strategy was not properly valued initially.

### *Immediate Market Response*

Because investors use multiple signals to form expectations about a firm's future performance, they are expected to appreciate the possibility that firms cutting marketing and

R&D spending at the same time as they are reporting increased earnings might be engaging in myopic management and that these increased earnings might not be indicative of improved future prospects but might instead be coming at the expense of future performance. If market participants indeed appreciate this possibility and realize that the "quality" of reported earnings might be lower for firms cutting marketing and R&D spending, they will value such earnings systematically lower than those of other firms with increased profitability. This leads to the first hypothesis:

$H_1$: Same-year stock returns for potentially myopic firms—that is, firms with increased profitability and decreased support for marketing and R&D activities—will be lower than returns for other firms with increased profitability.

*Delayed Market Response*

To the extent that the stock market participants do not fully and immediately appreciate the trade-off between marketing and R&D spending and the reported earnings, or do not fully appreciate the long-term consequences of marketing and R&D, there will be a systematic future-term negative adjustment in the valuation of myopic firms. Empirical and anecdotal evidence on the prevalence of cutting marketing and R&D-related spending to achieve short-term performance goals (e.g., Bushee 1998; Deleersnyder et al. 2009; Mizik and Jacobson 2007) indicates that, indeed, the market might be underreacting to myopic marketing and R&D cuts and that it might take time for the market to fully appreciate these myopic strategies. Thus, the second hypothesis is as follows:[1]

$H_2$: The future stock returns will be lower for firms that decreased support for marketing and R&D at the time they reported increased earnings than the future stock returns for other firms.

*Total Financial Returns to Myopia*

$H_2$ predicts that investors do not realize a myopic strategy is in place and/or do not fully appreciate long-term consequences of myopic marketing and R&D cuts as they occur and do so only in the future, when the consequences of spending cuts have affected future profits. An important question, however, is whether the net outcome of myopia is negative, positive, or neutral. In other words, does the potential future negative adjustment outweigh the benefits of higher valuation in the initial period? Srivastava, Shervani, and Fahey (1998) argue that marketing is responsible for developing and managing market-based assets (customer, channel, and partner relationships) that influence market outcomes (new product adoption, referrals, pricing power, and customer loyalty and retention). Marketing effort increases shareholder value by accelerating or enhancing cash flows and lowering volatility of cash flows. Even a temporary disruption in the flow of resources into marketing assets can adversely affect the firm's competitive position in the market, customer perceptions and attitudes, and the stream of revenues. As such, the future negatives might outweigh the initial gains in firm valuation; thus, an additional hypothesis is tested:

$H_3$: The total long-term consequences of myopic management (i.e., cutting support for marketing and R&D activities by firms with enhanced financial performance) will be negative.

*Myopic Management Versus Accounting Accruals-Based Earnings Inflation*

Manipulation of accounting accruals and myopic management are alternative ways to inflate reported earnings. Although these two methods are different means to achieve the same goal, they have different organizational costs and implications for the operating processes of the firm. When managers manipulate discretionary accruals, they only affect the timing of earnings recognition (Dechow and Schrand 2004) and do not alter either the amount or the temporal flow of true economic profits. Conversely, myopic management alters operational practices and can diminish true economic profits. In other words, although the outcome might be the same (inflated earnings), the organizational costs of undertaking these strategies differ and are significantly greater for myopic management. As such, the negative long-term performance consequences of myopia are expected to be more severe. Thus:

$H_4$: The total long-term consequences of myopic management will be more negative than the total long-term consequences of accounting accruals-based earnings inflation.

## EMPIRICAL MODELING

*Identifying Myopic Management*

When firms achieve improved financial performance, they have an opportunity and the resources to invest in the future long-terms assets at a higher level. Alternatively, the improved financial performance, as it is reflected in contemporaneous accounting performance measures, might be realized *because* a firm is cutting costs and keeping these savings in its reported income. That is, the appearance of improved financial performance is due to the strategy of decreasing investments in long-term assets. Thus, firms simultaneously reporting greater-than-normal profits, lower-than-normal marketing, and lower-than-normal R&D spending are more likely to have engaged in myopic management than other firms. The incorporation of R&D as the third dimension into the screening metric for myopic management extends Mizik and Jacobson's (2007) two-dimensional screen and helps better identify instances of myopia. That is, a firm might have legitimate reasons for and might be making optimal reductions to marketing spending at the same time as it is realizing increased profitability (Bayus, Erickson, and Jacobson 2003), or it might be simply shifting resources from marketing to R&D. This shift might occur, for example, when the firm is dealing with technological breakthroughs in the industry, when it is facing new market opportunities, or when its core "cash cow" products are approaching the end of their life cycle and the firm needs to focus on developing and strengthening its product pipeline. In such cases, the three-dimensional metric will be able to correctly infer that these firms are not myopic but

[1]An alternative hypothesis is that the market overvalues marketing and R&D and overestimates their impact on future performance. If so, the future valuation adjustment for firms cutting marketing and R&D would be positive. The tests allow for this possibility.

rather are simply shifting their strategic emphasis and resources.[2]

Thus, this study focuses on the group of firms that simultaneously report greater-than-normal operating profits (return on assets [ROA]) and lower-than-normal marketing spending (Mktg) and R&D intensity—that is, firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$, $(Mktg_{it} - \widehat{Mktg}_{it|it-1}) < 0$, and $(R\&D_{it} - \widehat{R\&D}_{it|it-1}) < 0$, where $\widehat{ROA}_{it|it-1}$, $\widehat{Mktg}_{it|it-1}$, and $\widehat{R\&D}_{it|it-1}$ reflect the normal or expected level of profitability, marketing, and R&D intensity for firm i in period t, respectively. These are the firms that might be decreasing their marketing and R&D spending with the intention to inflate reported earnings.

To identify potentially myopic firms, it is first necessary to determine the "normal" or expected level of profitability and marketing and R&D intensity for each firm for each period. The following fixed-effects autoregressive panel data forecast models are used to compute next-period normal levels of firm earnings, marketing, and R&D intensity:[3]

(1a) Profitability equation:
$$ROA_{it} = \alpha_{roa,i} + \phi_{roa} \times ROA_{it-1} + \sum_{t=1}^{T} \delta_{roa,t} \times Year_t + \sum \lambda_{roa,sic} \times SIC_{sic} + \varepsilon_{roa,it};$$

(1b) Marketing equation:
$$Mktg_{it} = \alpha_{mktg,i} + \phi_{mktg} \times Mktg_{it-1} + \sum_{t=1}^{T} \delta_{mktg,t} \times Year_t + \sum \lambda_{mktg,sic} \times SIC_{sic} + \varepsilon_{mktg,it};$$

(1c) R&D equation:
$$R\&D_{it} = \alpha_{rd,i} + \phi_{rd} \times R\&D_{it-1} + \sum_{t=1}^{T} \delta_{rd,t} \times Year_t + \sum \lambda_{rd,sic} \times SIC_{sic} + \varepsilon_{rd,it},$$

where $ROA_{it}$, $Mktg_{it}$, and $R\&D_{it}$ are profitability, marketing intensity, and R&D intensity, respectively, for firm i in period t, and $ROA_{it-1}$, $Mktg_{it-1}$, and $R\&D_{it-1}$ are their lagged values. $Year_t$ is a set of annual dummy variables; $SIC_{sic}$ is a set of industry dummy variables; $\alpha_{roa,i}$, $\alpha_{mktg,i}$, and $\alpha_{rd,i}$ are the firm-specific intercepts; and $\phi_{roa}$, $\phi_{mktg}$, and $\phi_{rd}$ are the estimates of persistence for each series. These models indicate that each series depends on a firm-specific level, the value of the series in the previous period, the time-specific effect, and the industry-specific effect. The forecast errors in these models provide the estimates of the deviation of the series from the norm in each period. That is, $\varepsilon_{roa,it} = (ROA_{it} - \widehat{ROA}_{it|it-1})$, $\varepsilon_{mktg,it} = (Mktg_{it} - \widehat{Mktg}_{it|it-1})$, and $\varepsilon_{rd,it} = (R\&D_{it} - \widehat{R\&D}_{it|it-1})$. These values are used to classify firms into potentially myopic and nonmyopic groups.[4]

[2]Prior research (e.g., Mizik and Jacobson 2003) has explored the financial implication of such shifts but has not examined the consequences of simultaneous cuts to marketing and R&D, which is the focus of this study.

[3]This parsimonious specification is chosen to preserve a greater number of observations for analyses. The results based on expanded forecasting models are similar to those reported.

[4]To the extent that the forecast models' estimations are inaccurate, the tests would be biased toward finding no group differences. As the results suggest, these parsimonious models are sufficient for proper identification of myopia. To assess sensitivity of the findings to sampling variation, a simulation study was conducted. The estimated parameter distributions were used to simulate 1000 observations of these parameters, to compute errors, and to conduct tests for each draw. Simulation results are closely in-line with the reported estimation results.

*Identifying Accounting-Based Earnings Management: Discretionary Accruals*

Reported earnings are composed of a cash and an accrual component, and current accruals are "reflected as increases or decreases in the balances of various noncash current asset and current liability accounts" (Rangan 1998, p. 108). Accruals enable managers to engage in earnings management because they require managers to make estimates (e.g., expected proportion of nonpaying customers) and forecasts (e.g., useful asset life). Extensive research in accounting has focused on modeling "normal" and "discretionary" (i.e., inconsistent with firm situation) levels of accruals. A high level of discretionary accruals is an indicator that a firm might have engaged in earnings inflation. In line with Kothari, Leoneb, and Wasley (2005), discretionary accruals are computed as the difference between the actual and the predicted value of total accruals:[5]

(2)
$$TA_{it} = \beta_0 + \beta_1 \times (1/Assets_{it-1}) + \beta_2 \Delta Sales_{it} + \beta_3 PPE_{it} + \beta_4 NetIncome_{it} + \upsilon_{it},$$

where $TA_{it}$ is total accruals; $\Delta Sales_{it}$ is change in sales net of accounts receivable scaled by lagged total assets; $PPE_{it}$ is net property, plant, and equipment scaled by lagged total assets; $NetIncome_{it}$ is net income scaled by lagged total assets; and $Assets_{it-1}$ is lagged total assets. Firms with earnings greater than expected (i.e., $ROA_{it} - \widehat{ROA}_{it|it-1} > 0$) and aggressively managing accruals (i.e., falling in the top quartile of abnormal accruals; e.g., Teoh, Welch, and Wong 1998) are designated as firms that potentially engaged in accrual manipulation to inflate current earnings.

*Testing $H_1$*

$H_1$ predicts that market participants appreciate the differences in earnings quality of potentially myopic and nonmyopic firms and react less positively to earnings reported by myopic firms. $H_1$ holds if market participants realize that myopic firms' earnings are not as reflective of future-term performance as those of firms not cutting their marketing and R&D effort. Under the null hypothesis, there would be no difference in stock returns. $H_1$ can be tested by examining the differences in stock returns for firms classified as potentially myopic and comparing them with stock returns realized by all other firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$:

(3)
$$abnStkR_{it} = \chi_0 + \chi_1 \times Myopic_{it} + \eta_{it},$$

where $abnStkR_{it}$ is the risk-adjusted (i.e., abnormal) stock return for firm i in year t and $Myopic_{it}$ is a categorical variable that takes the value of 1 if firm i in year t was categorized as potentially myopic and 0 if otherwise. To ensure appropriate benchmarking (i.e., against other firms with equivalent profitability), the estimation data sample includes only firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$ in year t. Under $H_1$, $\chi_1 < 0$, and under the null, $\chi_1 = 0$.

[5]The results of the analyses are not sensitive to alternative abnormal accrual measures (Dechow, Sloan, and Sweeney 1995) and in-sample (using only the sample firms) or out-of-sample (using all firms in COMPUSTAT, excluding the sample firms) estimation.

*Testing $H_2$*

$H_2$ suggests that the financial markets do not distinguish or do not fully appreciate long-term financial consequences of marketing and R&D spending and are not able to properly price myopic spending cuts. This hypothesis implies that market participants may be fixated on earnings reports more than they should be and are not paying sufficient attention to other performance-relevant metrics (i.e., the misvaluation of marketing and R&D contribution to performance is pervasive and widespread). $H_2$ can be tested by assessing the difference in future multiyear risk-adjusted stock returns to a portfolio of potentially myopic firms and a portfolio of nonmyopic benchmark firms:

$$\text{(4)} \qquad \text{abnStkR}_{it+k|t} = \lambda_{0k} + \lambda_{1k} \times \text{Myopic}_{it} + \eta_{it+k}, \quad \text{for } k = 1, 2, 3, \text{ and } 4,$$

where $\text{abnStkR}_{it+k|t}$ is the k-period ahead (i.e., future multiperiod) risk-adjusted stock return for firm i, with classification into myopic and nonmyopic portfolios occurring at time t, and $\text{Myopic}_{it}$ is defined as previously. Under $H_2$, a slow negative adjustment in the valuation of potentially myopic firms should be observed, and $0 \geq \lambda_{11} \geq \lambda_{12} \geq \lambda_{13} \geq \lambda_{14}$. The null hypothesis is that the market is able to properly, and in a timely manner (i.e., immediately), value myopic marketing and R&D cuts. Under the null hypothesis, no difference will exist in future-term performance between myopic and nonmyopic firm portfolios, and it will not be possible to reject $\lambda_{11} = \lambda_{12} = \lambda_{13} = \lambda_{14} = 0$.

An important question in testing $H_2$ is, What is an appropriate benchmark? One view is that to ensure appropriate comparison, it is necessary to ensure equivalence in the firms' financial situations, and the benchmarks should be restricted to firms with $(\text{ROA}_{it} - \widehat{\text{ROA}}_{it|it-1}) > 0$ (i.e., exclude all firms with a negative earnings surprise). The rationale for this view is that for a fair comparison, it is necessary to benchmark against firms that are comparable in all respects (including financial situation) and are different only in terms of their marketing and R&D spending strategy.

An alternative view is that firms reporting positive earnings surprises might have achieved increased profitability because they cut spending on marketing and R&D. Without the spending cuts, these firms could have been either above or below their normal ROA level and therefore should be compared with all nonmyopic sample firms with positive or negative earnings surprises. A third, and more extreme, view would argue that because potentially myopic firms might be inflating their earnings through spending cuts to avoid negative earnings surprises, they should be benchmarked relative to firms with negative earnings surprises (i.e., $\text{ROA}_{it} - \widehat{\text{ROA}}_{it|it-1} < 0$) for a more stringent test. Because all three views have merit, the tests of $H_2$ use all three alternative benchmarks—the performance of myopic firms is assessed relative to (1) all other firms, (2) all other firms with positive earnings surprises, and (3) all firms with negative earnings surprises.

*Testing $H_3$*

$H_2$ assesses the magnitude of adjustment in the valuation of potentially myopic firms in future years. $H_3$ addresses the total value implications of myopia—namely, including the financial market reaction in the initial period, when the myopic firms presumably realized the benefits of myopic management. $H_3$ can be tested by assessing the difference in future multiyear cumulative risk-adjusted stock returns for firms with decreased marketing and R&D spending versus benchmark firms when the initial period is taken into account. That is, the following can be estimated:

$$\text{(5)} \qquad \text{abnStkR}_{it+j|t} = \gamma_{0j} + \gamma_{1j} \times \text{Myopic}_{it} + \eta_{it+j}, \quad \text{for } j = 0, 1, 2, 3, \text{ and } 4,$$

where $\text{Myopic}_{it}$ and $\text{abnStkR}_{it}$ are defined as previously. Under $H_3$, the negative valuation adjustment begins in the future years, and $\gamma_{10} \geq \gamma_{11} \geq \gamma_{12} \geq \gamma_{13} \geq \gamma_{14}$; at some point, the abnormal stock returns become negative, and at the end of the study period, $\gamma_{14} < 0$. Under the null $H_3$, there will not be any systematic adjustment following the initial period: that is, $\gamma_{10} = \gamma_{11} = \gamma_{12} = \gamma_{13} = \gamma_{14}$.

Because the arguments regarding an appropriate benchmark advanced for testing $H_2$ also apply here, three different benchmarks are used to test $H_3$. The different benchmarks help answer the question whether it ever makes sense for a firm to inflate earnings through cuts to marketing and R&D spending. That is, $H_3$ is most likely to be supported against an equivalent financial benchmark portfolio. However, it might be rejected against benchmarks with negative earnings surprises. For example, if the four-year return differential between potentially myopic and benchmark firms with $(\text{ROA}_{it} - \widehat{\text{ROA}}_{it|it-1}) < 0$ is nonnegative (i.e., $\gamma_{14} > 0$), this result would suggest the existence of a long-lasting benefit of myopia for firms engaging in myopic spending cuts to avoid negative earnings surprises.

*Testing $H_4$*

$H_4$ argues that the consequences of myopia are more negative than those of accounting accruals-based earnings management. This hypothesis can be tested by contrasting the relative long-term performance consequences of firms engaging in pure myopic management with firms engaging in pure accruals-based earnings inflation. The differential consequences can be assessed with the following model:

$$\text{(6)} \quad \text{abnStkR}_{it+j|t} = \delta_{0j} + \delta_{1j} \times \text{Myopic\_and\_NoAccruals\_Inflation}_{it} + \eta_{it+j}, \text{ for } j = 0, 1, 2, 3, \text{ and } 4,$$

where $\text{Myopic\_and\_NoAccruals\_Inflation}_{it}$ is a subset of myopic firms not engaging in aggressive accruals inflation (i.e., not falling in the top quartile of discretionary accruals) and $\text{abnStkR}_{it}$ is defined as previously. To ensure appropriate benchmarking, the estimation sample includes the "myopia-only" firms and firms engaged in aggressive accruals inflation with positive earnings surprises, but it excludes firms simultaneously engaged in both myopia and accruals-based earnings inflation. Under $H_4$, lower returns to myopic firms (i.e., $\delta_{1j} < 0$) would be observed, and under the null hypothesis, $\delta_{1j} = 0$.

## DATA

Two databases were used to compile the data set for the analyses. The COMPUSTAT database provided annual accounting information, and the University of Chicago's Center for Research in Security Prices (CRSP) provided monthly stock returns for all firms listed for 1986–2005. The market, size, book-to-market, and momentum risk fac-

tors were obtained from the Kenneth French data library (posted at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). Merging the COMPUSTAT and CRSP data yielded an unbalanced pooled cross-sectional time-series panel of 76,875 firm-year observations for 6642 unique firms. To ensure correspondence in the data reporting across all firms in the sample, the sample was restricted to firms with December fiscal year end. No industries or specific firms were deleted from the sample.

Research-and-development expenditures divided by total assets are used as the measure of innovation intensity. In line with Dutta, Narasimhan, and Rajiv (1999), selling, general, and administrative expenditures minus R&D expenditures divided by total assets is a proxy for marketing intensity.[6] Operating income before depreciation is divided by total assets to form a measure of profitability. Barber and Lyon (1996, pp. 361–64) advocate this metric rather than alternatives (e.g., net income) because the former is less affected by managerial discretion in depreciation policy and excludes many accrual and transitory items (leverage, extraordinary items, and other discretionary items) that are subject to accounting-based earnings manipulation. In line with the accounting literature, total accruals are defined as the change in noncash current assets minus the change in current liabilities net of the current portion of long-term debt, minus depreciation and amortization, divided by lagged total assets.

The hypotheses tests require comparisons of current and future risk-adjusted stock returns. Several methods are used for estimating risk-adjusted returns. However, no consensus exists as to which method is preferable (e.g., Barber and Lyon 1997; Fama 1998). To ensure the robustness of the results to alternative approaches, three alternative measures of abnormal returns are used. The Fama and French (1993, 1996) three-factor plus momentum (Carhart 1997) model is used, and compounded abnormal returns (CARs) are computed. The time-varying risk characteristics approach (e.g., Daniel and Titman 1997) is used to compute buy-and-hold abnormal returns (BHARs). The most notable difference between these two abnormal return models is that in CAR, risk factor premiums vary by firm but are stable over time, whereas in BHAR, the risk characteristic premiums vary over time. As a sensitivity check, the hypotheses are also assessed with nonparametric tests using Barber and Lyon's (1997) matched-firm abnormal returns. Table 1, Panel A, reports descriptive statistics for variables used in the analyses. Table 1, Panel B, reports bivariate correlations. Table 1, Panel C, provides variable definitions and the details of abnormal return calculations.

## *RESULTS*

### *Identifying Myopia*

Anderson and Hsiao's (1982) instrumental variable estimation approach is used to estimate the panel data fixed-effects autoregressive forecast models in Equations 1a, 1b, and 1c. The results of this estimation (see Table 2) document significant persistence levels in all three equations. After estimates of $\hat{\alpha}_i$ and $\hat{\phi}$ are obtained for each series, the next-year forecasts are computed for profitability ($\widehat{ROA}_{it|it-1}$), marketing intensity ($\widehat{Mktg}_{it|it-1}$), and R&D intensity ($\widehat{R\&D}_{it|it-1}$). The forecast errors are computed for each firm and each year, and firms are assigned to "potentially myopic" group and "nonmyopic" benchmark groups on the basis of the sign of the resultant forecast errors. A total of 20.7% of sample observations are classified as instances in which myopic management potentially takes place (i.e., $ROA_{it} - \widehat{ROA}_{it|it-1} > 0$, $Mktg_{it} - \widehat{Mktg}_{it|it-1} < 0$, and $R\&D_{it} - \widehat{R\&D}_{it|it-1} < 0$), 32.9% are classified as nonmyopic firms with a positive earnings surprise (i.e., firms with $ROA_{it} - \widehat{ROA}_{it|it-1} > 0$), and 46.4% are classified as firms with a negative earnings surprise ($ROA_{it} - \widehat{ROA}_{it|it-1} < 0$).

Figure 1 illustrates the average pattern of raw (i.e., unadjusted for risk considerations) stock returns for potentially myopic firms and the two benchmark portfolios of nonmyopic firms. To provide a simple benchmark of performance, Figure 1 also depicts the pattern of average S&P 500 returns for the study period. The first obvious difference is in the stock market reaction to firms that failed to meet earnings expectations versus firms that exceeded expectations. In the year when firms report a negative earnings surprise, the market devalues them by –14.2%. There is a positive market response, above S&P 500 return level, to portfolios of firms with positive earnings surprises. This market response is consistent with the well-documented phenomenon of the stock market reacting to earnings surprises (Kothari 2001).

Figure 1 also shows that, initially, firms classified as potentially myopic have a slightly lower average raw stock return (12.5%) than the nonmyopic firms with positive earnings surprises (15.5%). In the following year, the positive market response to potentially myopic firms is reversed, and a clear negative trend in the years that follow is observed. Conversely, both nonmyopic firm groups exhibit upward trends that closely parallel the performance of the S&P 500. At the end of the four-year observation period, the portfolio of potentially myopic firms has a negative return of –15.7%, far below the return to the two nonmyopic benchmark portfolios (29.2% and 13.3%) and the S&P 500 return of 21.6%. Though consistent with the predictions, the results depicted in Figure 1 provide no indication as to whether any of the observed differences are significant or whether they are driven by differences in risk. To formally assess the returns to myopia, formal statistical tests are conducted.

### *Testing $H_1$*

Firms cutting marketing and R&D spending at the time of improved profitability report greater average earnings surprises (.0672) than other firms with positive earnings surprises (.0483), and the earnings surprise differential of .0189 between these groups is significant ($p < .001$). To what extent do market participants believe high earnings numbers when cuts to marketing and R&D are undertaken? If investors are aware that earnings inflation may be taking place, they will likely devalue earnings information, and as a result, the stock returns for the firms cutting marketing and R&D spending will be smaller than those for other firms reporting improved profitability. $H_1$ is tested by assessing the differences in the risk-adjusted stock returns for

[6]This metric has some disadvantages in that in addition to marketing-related spending, it includes other nonmarketing expense categories. The advantage of this metric over advertising is that it reflects all marketing-related spending and allows preserving a greater sample.

Table 1

SAMPLE CHARACTERISTICS

*A: Descriptive Statistics*

| | *N* | *M* | *SE* | *5th Percentile* | *Mdn* | *95th Percentile* |
|---|---|---|---|---|---|---|
| ROA | 47,902 | .042241 | .00088 | –.37667 | .085188 | .243125 |
| Mktg | 17,631 | .279249 | .00165 | .042043 | .220256 | .732284 |
| R&D | 22,889 | .092992 | .00097 | .0 | .03245 | .412337 |
| Total accruals | 28,887 | .006373 | .00307 | –.15046 | .000616 | .178238 |
| Raw stock return | 38,627 | .039429 | .00293 | –.95826 | .089622 | .840677 |
| CAR | 38,623 | –.05158 | .00258 | –.90043 | –.02048 | .688118 |
| BHAR | 36,707 | –2.72E-16 | .002748 | –.85847 | .018237 | .781023 |

*B: Correlation Matrix*

| | *ROA* | *Mktg* | *R&D* | *TotalAccr* | *RawStkR* | *CAR* | *BHAR* |
|---|---|---|---|---|---|---|---|
| ROA | 1 | | | | | | |
| | <.0001 | | | | | | |
| | 47,902 | | | | | | |
| Mktg | –.31667 | 1 | | | | | |
| | <.0001 | <.0001 | | | | | |
| | 17,025 | 17,631 | | | | | |
| R&D | –.61935 | .20691 | 1 | | | | |
| | <.0001 | <.0001 | <.0001 | | | | |
| | 20,303 | 17,631 | 22,889 | | | | |
| Total accruals | .03214 | .02073 | –.02344 | 1 | | | |
| | <.0001 | .0143 | .0029 | | | | |
| | 28,887 | 13,978 | 16,096 | 28,887 | | | |
| Raw stock return | .24252 | –.07843 | –.13875 | .02074 | 1 | | |
| | <.0001 | <.0001 | <.0001 | .0006 | <.0001 | | |
| | 34,114 | 13,525 | 17,184 | 27,143 | 38,627 | | |
| CAR | .20197 | –.06446 | –.09924 | .02386 | .83906 | 1 | |
| | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | |
| | 34,110 | 13,522 | 17,181 | 27,139 | 38,623 | 38,623 | |
| BHAR | .24276 | –.05162 | –.09164 | .02699 | .90872 | .88734 | 1 |
| | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 |
| | 33,858 | 13,429 | 17,032 | 27,532 | 35,805 | 35,802 | 36,707 |

*C: Variable Definitions for Firm i in Year t*

$$\text{ROA}_{it} = \frac{\text{Operating Income before Depreciation}_{it}}{\text{Assets}_{it}} = \frac{\text{data13}_{it}}{\text{data6}_{it}}$$

$$\text{Marketing Intensity}_{it} = \frac{\text{SG\&A Expense}_{it} - \text{R\&D Expense}}{\text{Assets}_{it}} = \frac{\text{data189}_{it} - \text{data46}_{it}}{\text{data6}_{it}}$$

$$\text{Research-and-Development Intensity}_{it} = \frac{\text{R\&D Expense}_{it}}{\text{Assets}_{it}} = \frac{\text{data46}_{it}}{\text{data6}_{it}}$$

$$\text{Total Accruals} = \frac{\Delta\text{Data4}_t - \Delta\text{Data1}_t - \left(\Delta\text{Data5}_t - \Delta\text{Data34}_t\right) - \Delta\text{Data14}_t}{\text{Data6}_{t-1}}$$

Raw stock return ($\text{Ret}_{it}$) = $\log\prod_{m=1}^{12}(1 + \text{ret}_{im})$, where $\text{ret}_{im}$ is the holding period return for firm i in month m coming from the CRSP monthly returns file.

Compounded Abnormal Stock Return ($\text{CAR}_{it}$) = $\log\prod_{m=1}^{12}[1 + (\text{ret}_{im} - \text{expRet}_{im})]$, where $\text{expRet}_{im} = \hat{\beta}_i(\text{Ret}_{\text{market,m}} - \text{Ret}_{\text{risk free,m}}) + \hat{s}_i(\text{SMB}_m) + \hat{h}_i(\text{HML}_m) + \hat{m}_i(\text{MOM}_m)$, $(\text{Ret}_{\text{market,m}} - \text{Ret}_{\text{risk free,m}})$ is risk-free market return; $\text{SMB}_m$ is the return on a value-weighted portfolio of small stocks minus the return on a value-weighted portfolio of big stocks; $\text{HML}_m$ is the return on a value-weighted portfolio of high book-to-market stocks minus the return on a value-weighted portfolio of low book-to-market stocks, MOM is the momentum factor (which is the average return on the two [small and large size] high-prior-return portfolios minus the average return on the two [small and large size] low-prior-return portfolios computed in month m); which come from Kenneth French's data library posted on his Web site; and $\hat{\beta}_i$, $\hat{s}_i$, $\hat{h}_i$, and $\hat{m}_i$ come from estimating the Fama and French (1992, 1993) three-factor model augmented with momentum (Carhart 1997) factor for each firm i: $(\text{Ret}_{i,m} - \text{Ret}_{\text{risk free,m}}) = \alpha_i + \hat{\beta}_i(\text{Ret}_{\text{market,m}} - \text{Ret}_{\text{risk free,m}}) + \hat{s}_i(\text{SMB}_m) + \hat{h}_i(\text{HML}_m) + \hat{m}_i(\text{MOM}_m) + \varepsilon_{i,m}$.

Buy-and-Hold Abnormal Stock Return ($\text{BHAR}_{it}$) = $\text{Ret}_{it} - \text{expRet}_{it} = \varepsilon_{it}$, where $\varepsilon_{it}$ comes from estimating the following model: $\text{Ret}_{it} = \sum_{t=1}^{T}\alpha_{1t} \times \text{Year}_t + \sum_{t=1}^{T}\alpha_{2t} \times \log(\text{MV}_{it-1}) \times \text{Year}_t + \sum_{t=1}^{T}\alpha_{3t} \times \log(\text{BMV}_{it-1}) \times \text{Year}_t + \varepsilon_{it}$, where $\text{Year}_t$ is a dummy variable equal to 1 if year is equal t and 0 if otherwise, $\log(\text{MV}_{it-1})$ and $\log(\text{MBV}_{it-1})$ are firm risk characteristics of size (as modeled by log of lagged market value) and book-to-market equity (as modeled by the log of lagged book value over market value), whose effects are allowed to vary by year.

Notes: The study sample includes all available 1986–2005 accounting and returns data. To reduce the influence of outliers, 2.5% of extreme values were set to missing for each accounting variable in the analysis. The first three observations for each firm are lost as a result of taking first differences and using lags to estimate the forecasting Models 1a, 1b, and 1c. The tables summarize the final estimation data sample used in the analyses.

Table 2

FIXED-EFFECTS AUTOREGRESSIVE PANEL DATA FORECAST MODELS

| | *ROA Equation* | *Mktg Equation* | *R&D Equation* |
|---|---|---|---|
| $\phi$ | .35692*[a] | .40023*[a] | .27232*[a] |
| | (.01300) | (.02591) | (.01775) |
| | [27.46] | [15.45] | [15.34] |
| Number of observations | 40,799 | 13,900 | 19,157 |
| F-statistic | 753.91 | 238.60 | 235.46 |
| Mean square error | .01103 | .00929 | .00628 |

*$p < .01$ (two-sided).

[a]Denotes the use of instrumental variable estimation. That is, Anderson and Hsiao's (1982) approach is used to estimate the panel data fixed-effects autoregressive forecast models. Lagged values of each series at t = 2 and t = 3 are used to create instrumental variables for the first-differenced lagged values of each series to address their correlation with the first-differenced error term. This approach allows for a consistent estimation of the persistence parameters $\phi$.

Notes: The number of observations differs across the series because not all firms reported all measures across all periods. The number of observations differs from those reported in Table 1 as a result of taking lags. Standard errors are in parentheses, and t-statistics are in brackets.

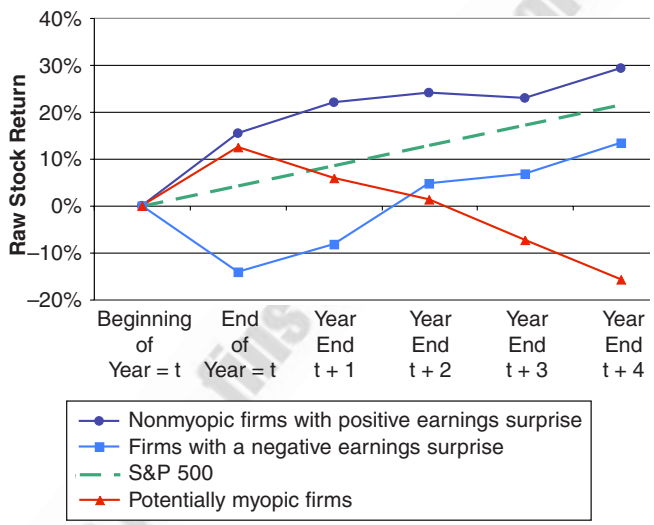
firms classified as potentially myopic versus the nonmyopic firms that report increased profitability.

Table 3, Panel A, reports the results of estimating Equation 3 using CAR and BHAR measures. Contrary to $H_1$, the stock return differential between potentially myopic and nonmyopic firms is positive for both measures of abnormal returns, but it is not statistically significant at the 5% level. These results imply that firms cutting marketing and R&D spending are able to inflate their earnings sufficiently to circumvent any possible discounting of their earnings.

To further assess the market valuation of potentially myopic firms, additional tests were conducted using another popular approach for computing abnormal returns. Barber and Lyon (1997) propose matching each sample firm to a benchmark firm of similar size and book-to-market ratio and using the difference in their stock returns as the measure of abnormal return. Here, an additional constraint is imposed on the benchmark firms to allow for a direct test of $H_1$: Specifically, benchmark firms are required to have

Figure 1

RAW STOCK RETURNS FOR PORTFOLIOS OF POTENTIALLY MYOPIC FIRMS, FIRMS WITH POSITIVE EARNINGS SURPRISES THAT DID NOT CUT THEIR MARKETING AND R&D SPENDING, FIRMS WITH NEGATIVE EARNINGS SURPRISES, AND S&P 500




Notes: Three portfolios are formed at the end of year t based on the signs of ROA, R&D, and Mktg surprises, and their returns are tracked over the following four years. The figure depicts the average pattern of raw stock returns for three portfolios: (1) potentially myopic firms ($ROA_{it} - \widehat{ROA}_{it|it-1} > 0$, $Mktg_{it} - \widehat{Mktg}_{it|it-1} < 0$, and $R\&D_{it} - \widehat{R\&D}_{it|it-1} < 0$), (2) nonmyopic firms with positive earnings surprises (i.e., firms with $ROA_{it} - \widehat{Mktg}_{it|it-1} > 0$, not cutting marketing and R&D spending), and (3) firms with negative earnings surprises ($ROA_{it} - \widehat{ROA}_{it|it-1} < 0$). Average S&P 500 return provides a benchmark.

$(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$. In line with Barber and Lyon, for each firm classified as potentially myopic, a benchmark firm was selected among all firms with a positive earnings surprise in the same year and in the same two-digit Standard Industrial Classification (SIC) group, with a market value of equity between 70% and 130% and with the closest book-to-market ratio. When a matching firm at the two-digit SIC

Table 3

IMMEDIATE MARKET RESPONSE: DIFFERENTIAL MARKET REACTION TO POTENTIALLY MYOPIC AND NONMYOPIC FIRMS

*A: Differential Market Response Using CARs and BHARs*

| | *Estimate* | *SE* | *t-Statistic* | *N* | *F-Statistic* |
|---|---|---|---|---|---|
| CAR | .02349 | .01355 | 1.73 | 6656 | 3.01 |
| BHAR | .00679 | .01278 | .53 | 6785 | .28 |

*B: Differential Market Response Using Barber and Lyon's (1997) Matched-Firm Abnormal Returns*

| *N* | *M* | *t-Statistic* | *Significance* | *Mdn* | *M-Statistic* | *Significance* |
|---|---|---|---|---|---|---|
| 2561 | –.0189727 | –1.33 | .1842 | –.0144069 | –22.5 | .3846 |

Notes: Panel A reports parametric tests comparing potentially myopic firms with all other firms that reported increased profitability in year t but did not cut their support for marketing and R&D activities in year t: $abnStkR_{it} = \chi_0 + \chi_1 \times Myopic_{it} + \eta_{it}$, where the estimation data sample includes all firms reporting increased profitability in a given year. Panel B reports nonparametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. To ensure correspondence in the financial situation of the benchmark and the potentially myopic firms, the benchmark firms are also required to have a positive earnings surprise in the year of matching. The abnormal stock return to the myopic firm is calculated as the difference in the continuously compounded raw returns to potentially myopic firm and to its benchmark firm: AbnMatched Firm Differential $Ret_{it} = \log\prod_{m=1}^{12}(1 + ret_{im}) - \log\prod_{m=1}^{12}(1 + ret_{benchmark,m})$, where $ret_{im}$ is the holding period return for potentially myopic firm i in month m and $ret_{benchmark,m}$ is the month m holding period return for the benchmark firm identified for firm i.

level could not be identified, a benchmark firm was selected at the one-digit SIC level. The differential abnormal return for each potentially myopic firm was computed as the difference between its raw stock return and the raw stock return for its matched benchmark firm. Thus, whereas CAR and BHAR tests in Table 3, Panel A, reflect group-level benchmarking, the matched-firm differential returns (Barber and Lyon 1997) reflect individual firm-level benchmarking.

Table 3, Panel B, reports nonparametric tests using Barber and Lyon's (1997) matched-firm approach. For the 2561 firms classified as myopic, a matching firm with positive ROA surprise and available returns data was found. The values in the table are the mean and median differences in the stock returns realized by potentially myopic firms and their matching benchmark firms. No significant mean (–1.8%) or median (–1.4%) differences are found. Again, $H_1$ is rejected, and it is concluded that the stock market does not value myopic firms less than nonmyopic firms.

As evidenced in Table 3, the results show some variation across alternative abnormal return metrics. Obtaining different implied magnitudes of abnormal returns across different abnormal stock return measures is common (Fama 1998). Barber and Lyon (1997), Lyon, Barber, and Tsai (1999), and Fama (1998), among others, discuss the relative theoretical and statistical benefits of the various measures and argue for their advantages over the other measures. However, the issue is far from settled, and the debate continues. Because the merits and advantages of the various measures are not the focus of this study, the results are presented using several alternative common measures of abnormal returns. This approach makes it possible to assess the robustness of the results to alternative specifications and gives the reader the ability to focus on his or her preferred return metric.

*Testing $H_2$*

It is postulated in this study that firms with lower-than-predicted levels of marketing and R&D intensity in the presence of above-normal profitability are more likely to have engaged in myopic management than other firms, and it is hypothesized that the financial markets may not be able to immediately recognize and fully appreciate the consequences of myopic spending cuts. If myopic managers are able to fool the stock market initially and if market participants impound the consequences of myopic management only when the impact of myopic strategy has been reflected in the bottom-line performance, myopic firms will have lower future-year stock returns.

Table 4, Panel A, reports the results of testing $H_2$ using CARs and BHARs.[7] The pattern of the results fully supports $H_2$ and is consistent across all alternative benchmarks and abnormal returns measures. The future risk-adjusted stock returns of firms classified as potentially engaging in myopic management are significantly lower, and the magnitude of the negative returns increases over time. The implied magnitude of future underperformance differs little across benchmarks and abnormal return measures and, after four years, is approximately –33%. The largest negative adjustments occur in the first two years and are followed by smaller adjustments in the subsequent years. These results suggest that the financial markets are unable to recognize or do not appreciate the consequences of myopia as it occurs but do so at a later time.

Table 4, Panel B, reports the results of testing $H_2$ using matched-firm differential returns. Here again, the pattern supports $H_2$ and is fully consistent with the results reported in Table 4, Panel A. The mean and median abnormal returns are significantly negative across three alternative benchmarks. The firms classified as potentially myopic significantly underperform their size- and book-to-market-matched counterparts. However, the implied magnitude of underperformance using Barber and Lyon's (1997) approach is notably lower. In four years, potentially myopic firms have, on average, 13.5% lower returns than their size- and book-to-market-matched counterparts with positive ROA surprises and 22.8% lower returns than benchmarks with negative ROA surprises.

*Testing $H_3$*

The full consequences of myopic management are assessed by examining the multiyear abnormal returns, including the initial period, when the myopic firms realized the benefits of positive market response to their inflated earnings. Table 5, Panel A, presents $H_3$ tests using CARs and BHARs, and Figure 2 depicts the BHAR results. A notable difference is observed in the premiums that potentially myopic firms realize in the initial year relative to their benchmarks. Although they have no significant premium over stock returns realized by nonmyopic firms with positive earnings surprises (i.e., equivalent performance benchmark), compared with all other firms in the sample, the myopic firms realize a 16.7% (CAR) and 14.4% (BHAR) premium. When benchmarked against firms with negative earnings surprises, the myopic firms realize a 26.9% (CAR) and 24.4% (BHAR) premium. These results indicate that myopic managers facing the potential of falling below the expected level of earnings might realize at least a temporary benefit from earnings inflation achieved by cutting marketing and R&D spending. However, the performance of myopic firms over the following four years indicates that such manipulation is not justified in the long run.

In the years that follow, any initial premiums that myopic firms realize are completely eroded, and at the end of the observation period, the portfolio of potentially myopic firms underperforms all three benchmarks. The potentially myopic firms realize –16.1% (CAR) and –21.3% (BHAR) lower abnormal returns than all other firms in the data sample. The underperformance relative to a portfolio of firms with equivalent financial situations (i.e., all other firms with a positive earnings surprise) is –26.7% (CAR) and –33.5% (BHAR). Most notably, however, potentially myopic firms significantly underperform firms with a negative earnings surprise by –8.2% (CAR) and –12.0% (BHAR). It does not pay in the long run to engage in earnings inflation through the myopic management of marketing and R&D. The overall cost of this myopic strategy outweighs the initial benefits.

Table 5, Panel B, reports analysis using Barber and Lyon's (1997) matched-firm differential returns. The results

[7]In Table 4, Panel A, ordinary least squares standard errors are reported, but cluster-robust standard error estimation has been undertaken to assess the sensitivity of the results to potential cross-sectional dependency. Although the significance level of the CAR and BHAR findings is diminished (as expected, the significance is more in line with that using a matched-firm approach), the conclusions are not altered for this and other tests.

Table 4

DELAYED MARKET RESPONSE: ARE THE FIRMS WITH DECREASED SUPPORT FOR MARKETING AND R&D AT THE TIME OF INCREASED EARNINGS PROPERLY VALUED?

*A: Differential Market Response Using CARs and BHARs*

| | *Estimate* | *SE* | *t-Statistic* | *N* | *F-Statistic* |
|---|---|---|---|---|---|
| *Benchmarking Relative to Portfolio of All Other Firms in the Sample* | | | | | |
| *CAR Models* | | | | | |
| k = 1 | –.11107** | .01259 | –8.82 | 11,414 | 77.87 |
| k = 2 | –.23840** | .01835 | –12.99 | 9971 | 168.8 |
| k = 3 | –.28273** | .02300 | –12.30 | 8684 | 151.17 |
| k = 4 | –.33014** | .02863 | –11.53 | 7478 | 133 |
| *BHAR Models* | | | | | |
| k = 1 | –.10465** | .01305 | –8.02 | 11,197 | 64.27 |
| k = 2 | –.24146** | .01845 | –13.09 | 9758 | 171.35 |
| k = 3 | –.28681** | .02221 | –12.91 | 8451 | 166.8 |
| k = 4 | –.34275** | .02668 | –12.85 | 7256 | 165 |
| *Benchmarking Relative to Portfolio of All Other Firms with Positive Earnings Surprise in the Sample* | | | | | |
| *CAR Models* | | | | | |
| k = 1 | –.11575** | .01432 | –8.08 | 6145 | 65.36 |
| k = 2 | –.21471** | .02123 | –10.11 | 5383 | 102.27 |
| k = 3 | –.24813** | .02640 | –9.40 | 4713 | 88.32 |
| k = 4 | –.29305** | .03197 | –9.17 | 4113 | 84.02 |
| *BHAR Models* | | | | | |
| k = 1 | –.13093** | .01489 | –8.79 | 6058 | 77.28 |
| k = 2 | –.24234** | .02164 | –11.20 | 5293 | 125.35 |
| k = 3 | –.28239** | .02586 | –10.92 | 4609 | 119.21 |
| k = 4 | –.33439** | .03035 | –11.02 | 4007 | 121.36 |
| *Benchmarking Relative to Portfolio of All Firms with Negative Earnings Surprise in the Sample* | | | | | |
| *CAR Models* | | | | | |
| k = 1 | –.10776** | .01369 | –7.87 | 7680 | 61.95 |
| k = 2 | –.25505** | .01996 | –12.78 | 6744 | 163.21 |
| k = 3 | –.30715** | .02508 | –12.25 | 5882 | 149.97 |
| k = 4 | –.35816** | .0314 | –11.41 | 4936 | 130.08 |
| *BHAR Models* | | | | | |
| k = 1 | –.08592** | .01426 | –6.03 | 7532 | 36.30 |
| k = 2 | –.24084** | .02012 | –11.97 | 6593 | 143.23 |
| k = 3 | –.28996** | .02437 | –11.90 | 5718 | 141.57 |
| k = 4 | –.34912** | .02937 | –11.89 | 4782 | 141.35 |

*B: Differential Market Response Using Barber and Lyon's (1997) Matched-Firm Approach*

| | *N* | *M* | *t-Statistic* | *Significance* | *Mdn* | *M-Statistic* | *Significance* |
|---|---|---|---|---|---|---|---|
| *Matching Benchmark Firms Are Drawn from All Firms Not Classified as Potentially Myopic* | | | | | | | |
| k = 1 | 2418 | –.09765** | –5.84 | <.0001 | –.08317** | –137.5 | <.0001 |
| k = 2 | 2114 | –.16010** | –6.58 | <.0001 | –.10399** | –111.5 | <.0001 |
| k = 3 | 1832 | –.13128** | –4.23 | <.0001 | –.09130** | –63.5 | .0032 |
| k = 4 | 1475 | –.16886** | –4.47 | <.0001 | –.15438** | –80.5 | <.0001 |
| *Matching Benchmark Firms Are Required to Have Positive Earnings Surprise* | | | | | | | |
| k = 1 | 2304 | –.08344** | –4.99 | <.0001 | –.05225** | –82.5 | .0006 |
| k = 2 | 1999 | –.13541** | –5.47 | <.0001 | –.08477** | –81.5 | .0003 |
| k = 3 | 1723 | –.10147** | –3.24 | .0012 | –.05038 | –26.5 | .2103 |
| k = 4 | 1373 | –.13497** | –3.51 | .0005 | –.1186* | –47.5 | .0112 |
| *Matching Benchmark Firms Are Required to Have Negative Earnings Surprise* | | | | | | | |
| k = 1 | 2272 | –.08334** | –4.93 | <.0001 | –.08414** | –122.5 | <.0001 |
| k = 2 | 1955 | –.18982** | –7.37 | <.0001 | –.13263** | –132.0 | <.0001 |
| k = 3 | 1681 | –.15002** | –4.69 | <.0001 | –.12240** | –65.5 | .0015 |
| k = 4 | 1323 | –.22814** | –5.44 | <.0001 | –.18625** | –79.5 | <.0001 |

*$p < .05$ (two-sided).

**$p < .01$ (two-sided).

Notes: Panel A reports parametric tests comparing potentially myopic firms with other firms: $\text{abnStkR}_{it+k} = \lambda_0 + \lambda_1 \times \text{Myopic}_{it} + \eta_{it+k}$, where k = 1, 2, 3, and 4. Panel B presents nonparametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. Three different pools are used for choosing a benchmark firm; the results are reported separately. For each firm classified as potentially myopic, a benchmark firm is chosen from (1) all other firms in the data sample, (2) all other firms with positive earnings surprise, or (3) all firms with negative earnings surprise. The abnormal multiyear stock return to the myopic firm is calculated as the difference between the continuously compounded raw returns to potentially myopic firm and its benchmark firm over the period: $\text{AbnMatched Firm Ret}_{it+k} = \log\prod_{m=1}^{k\times 12}(1 + \text{ret}_{im}) - \log\prod_{m=1}^{k\times 12}(1 + \text{ret}_{\text{benchmark},m})$, where k = 1, 2, 3, and 4; $\text{ret}_{im}$ is the holding period return for potentially myopic firm i in month m; and $\text{ret}_{\text{benchmark},m}$ is the month m holding period return for the benchmark firm identified for firm i.

Table 5

TOTAL MARKET RESPONSE: TOTAL FINANCIAL CONSEQUENCES OF MYOPIC MANAGEMENT

*A: Total Financial Returns Using CARs and BHARs*

| | *Estimate* | *SE* | *t-Statistic* | *N* | *F-Statistic* |
|---|---|---|---|---|---|
| *Benchmarking Relative to Portfolio of All Other Firms in the Sample* | | | | | |
| *CAR Models* | | | | | |
| j = 0 | .16669** | .01225 | 13.61 | 12,462 | 185.29 |
| j = 1 | .05937** | .01794 | 3.31 | 11,063 | 10.95 |
| j = 2 | –.05890** | .02252 | –2.62 | 9714 | 6.84 |
| j = 3 | –.11252** | .02706 | –4.16 | 8454 | 17.29 |
| j = 4 | –.16143** | .03251 | –4.97 | 7270 | 24.66 |
| *BHAR Models* | | | | | |
| j = 0 | .14432** | .01162 | 12.43 | 12,611 | 154.38 |
| j = 1 | .03895* | .01826 | 2.13 | 11,197 | 4.55 |
| j = 2 | –.09695** | .02296 | –4.22 | 9758 | 17.84 |
| j = 3 | –.1507** | .02646 | –5.69 | 8451 | 32.43 |
| j = 4 | –.21329** | .0312 | –6.84 | 7256 | 46.73 |
| *Benchmarking Relative to Portfolio of All Other Firms with Positive Earnings Surprise in the Sample* | | | | | |
| *CAR Models* | | | | | |
| j = 0 | .02349 | .01355 | 1.73 | 6656 | 3.01 |
| j = 1 | –.0898** | .02020 | –4.44 | 5932 | 49.75 |
| j = 2 | –.1837** | .02611 | –7.03 | 5222 | 49.46 |
| j = 3 | –.2279** | .03099 | –7.35 | 4565 | 54.07 |
| j = 4 | –.2669** | .03618 | –7.38 | 3978 | 54.43 |
| *BHAR Models* | | | | | |
| j = 0 | .00679 | .01278 | .53 | 6785 | .28 |
| j = 1 | –.12399** | .02038 | –6.08 | 6058 | 37 |
| j = 2 | –.24367** | .02666 | –9.14 | 5293 | 83.53 |
| j = 3 | –.29169** | .03036 | –9.61 | 4609 | 92.28 |
| j = 4 | –.33519** | .0351 | –9.55 | 4007 | 91.2 |
| *Benchmarking Relative to Portfolio of All Firms with Negative Earnings Surprise in the Sample* | | | | | |
| *CAR Models* | | | | | |
| j = 0 | .26860** | .01307 | 20.55 | 8330 | 422.30 |
| j = 1 | .16515** | .01924 | 8.58 | 7424 | 73.68 |
| j = 2 | .02892 | .02408 | 1.20 | 6552 | 1.44 |
| j = 3 | –.03117 | .02910 | –1.07 | 5711 | 1.15 |
| j = 4 | –.08164* | .03508 | –2.33 | 4781 | 5.42 |
| *BHAR Models* | | | | | |
| j = 0 | .24212** | .01242 | 19.5 | 8468 | 380.33 |
| j = 1 | .15515** | .01967 | 7.89 | 7532 | 62.21 |
| j = 2 | .00705 | .02478 | .28 | 6593 | .08 |
| j = 3 | –.05040 | .02878 | –1.75 | 5718 | 3.07 |
| j = 4 | –.12046** | .03398 | –3.55 | 4782 | 12.57 |

*B: Total Financial Returns Using Barber and Lyon's (1997) Matched-Firm Differential Returns*

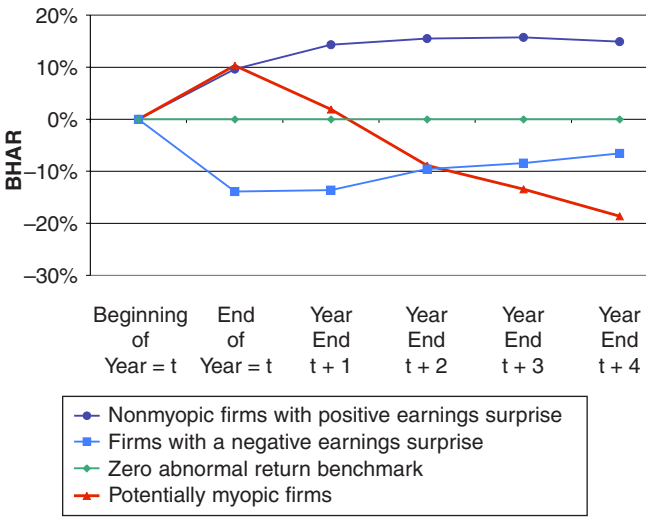
| | *N* | *M* | *t-Statistic* | *Significance* | *Mdn* | *M-Statistic* | *Significance* |
|---|---|---|---|---|---|---|---|
| *Matching Benchmark Firms Are Drawn from All Firms Not Classified as Potentially Myopic* | | | | | | | |
| j = 0 | 2677 | .06733** | 4.93 | <.0001 | .051674** | 96.5 | .0002 |
| j = 1 | 2406 | –.03503 | –1.55 | .1210 | –.04916* | –54.0 | .0291 |
| j = 2 | 2106 | –.10512** | –3.56 | .0004 | –.05229* | –50.0 | .0310 |
| j = 3 | 1826 | –.09128* | –2.57 | .0101 | –.06687 | –40.0 | .0645 |
| j = 4 | 1470 | –.13277** | –3.13 | .0018 | –.13773** | –70.0 | .0003 |
| *Matching Benchmark Firms Are Required to Have Positive Earnings Surprise* | | | | | | | |
| j = 0 | 2561 | –.0189727 | –1.33 | .1842 | –.01441 | –22.5 | .3846 |
| j = 1 | 2294 | –.11446** | –5.02 | <.0001 | –.12005** | –141.0 | <.0001 |
| j = 2 | 1992 | –.18103** | –5.91 | <.0001 | –.12623** | –108.0 | <.0001 |
| j = 3 | 1718 | –.15867** | –4.34 | <.0001 | –.1367** | –81.0 | .0001 |
| j = 4 | 1370 | –.17749** | –4.03 | <.0001 | –.17174** | –72.0 | .0001 |
| *Matching Benchmark Firms Are Required to Have Negative Earnings Surprise* | | | | | | | |
| j = 0 | 2532 | .13337** | 9.12 | <.0001 | .08651** | 188.5 | <.0001 |
| j = 1 | 2261 | .049587* | 2.12 | .0345 | .00824 | 8.0 | .7524 |
| j = 2 | 1947 | –.06798* | –2.18 | .0293 | –.04911 | –36.0 | .1075 |
| j = 3 | 1675 | –.05012 | –1.36 | .1734 | –.04317 | –27.5 | .1870 |
| j = 4 | 1318 | –.14407** | –3.15 | .0016 | –.13668** | –61.0 | .0009 |

*$p < .05$ (two-sided); **$p < .01$ (two-sided).

Notes: Panel A reports parametric tests comparing potentially myopic firms to other firms: $\text{abnStkR}_{it+j} = \gamma_0 + \gamma_1 \times \text{Myopic}_{it} + \eta_{it+j}$, where j = 0, 1, 2, 3, and 4. Panel B presents nonparametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. Three different pools are used for choosing a benchmark firm; the results are reported separately. For each firm classified as potentially myopic, a benchmark firm is chosen from (1) all other firms in the data sample, (2) all other firms with positive earnings surprise, or (3) all firms with negative earnings surprise. The abnormal multiyear stock return to the myopic firm is calculated as the difference in the continuously compounded raw returns to potentially myopic firm and its benchmark firm over the period: $\text{AbnMatched Firm Ret}_{it+j} = \log\prod_{m=1}^{j\times 12}(1 + \text{ret}_{im}) - \log\prod_{m=1}^{j\times 12}(1 + \text{ret}_{\text{benchmark},m})$, where j = 0, 1, 2, 3, and 4; $\text{ret}_{im}$ is the holding period return for potentially myopic firm i in month m; and $\text{ret}_{\text{benchmark},m}$ is the month m holding period return for the benchmark firm identified for firm i.

Figure 2

BHARS FOR PORTFOLIOS OF POTENTIALLY MYOPIC FIRMS, FIRMS WITH POSITIVE EARNINGS SURPRISES THAT DID NOT CUT THEIR MARKETING AND R&D SPENDING, AND FIRMS WITH NEGATIVE EARNINGS SURPRISES




Notes: Three portfolios are formed at the end of year t based on the signs of ROA, R&D, and Mktg surprise conditions, and their BHARs are tracked over the following four years. The figure depicts the average pattern of BHARs for (1) potentially myopic firms ($ROA_{it} - \widehat{ROA}_{it|it-1} > 0$, $Mktg_{it} - \widehat{Mktg}_{it|it-1} < 0$, and $R\&D_{it} - \widehat{R\&D}_{it|it-1} < 0$), (2) nonmyopic firms with positive earnings surprises (i.e., firms with $ROA_{it} - \widehat{ROA}_{it|it-1} > 0$, not cutting marketing and R&D spending), and (3) firms with negative earnings surprises ($ROA_{it} - \widehat{ROA}_{it|it-1} < 0$). The zero abnormal returns line provides the benchmark of expected performance.

fully support $H_3$ and are consistent with the results reported in Table 5, Panel A. The total returns to cutting marketing and R&D spending at the time of improved profitability are significantly negative across all three benchmarks. In four years, on average, potentially myopic firms underperform their size- and book-to-market-matched benchmarks by –13.3% (Mdn = –13.8%) when the benchmarks are selected without additional restrictions on their earnings condition in the initial period. On average, myopic firms underperform their performance-equivalent benchmarks (i.e., firms with a positive earnings surprise in the initial period) by –17.7% (Mdn = –17.2%) and their matching benchmarks with a negative earnings surprise by –14.4% (Mdn = –13.7%).[8]

*Identifying Accruals-Based Earnings Inflation*

In line with prior research in accounting, Equation 2 is estimated cross-sectionally for each year using all firm-year observations in the same two-digit SIC code, and discretionary accruals are computed as the difference between the predicted values and the actual total accruals. Firms with positive earnings surprises and falling into the top quartile of discretionary accruals were selected as firms that potentially engaged in accruals-based earnings inflation. Four quartile portfolios based on the level of discretionary accruals are formed. Figure 3 presents the pattern of average raw returns, and Figure 4 presents the average BHAR realized by firms with positive earnings surprises in each of the quartile portfolios. Firms in the top quartile portfolio of discretionary accruals (which were designated as likely to be engaged in accruals-based earnings inflation) clearly exhibit significantly lower future returns than other portfolios, but $H_4$ argues that consequences of myopia might be more severe.[9]

*Testing $H_4$*

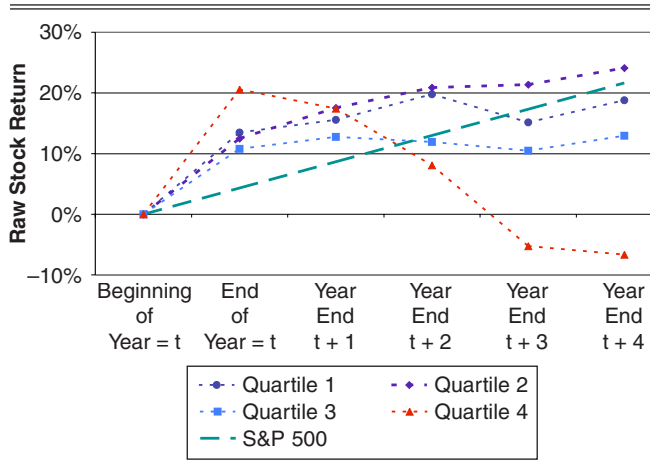
Equation 6 was estimated to assess the differential future performance of firms engaging in myopia versus accruals-based earnings inflation. That is, firms that pursue pure myopia (69.8% of myopic firms do not engage in aggressive accruals inflation) were contrasted with pure accruals-based earnings inflation strategies. The CAR and BHAR test results appear in Table 6, Panel A. For both abnormal return metrics, consistently and significantly more negative future differential returns are documented for firms that engaged in myopia. After four years, myopic firms have –26.38% lower CARs and –17.98% lower BHARs. This finding offers strong support for $H_4$. $H_4$ is also tested using Barber and Lyon's (1997) matched-firm returns, and the results are reported in Table 6, Panel B. For 711 firms engaging in "pure" myopic management (i.e., not simultaneously engaging in aggressive accruals inflation), a size- and book-to-market-matching firm for the same year and in the same two-digit (or one-digit) SIC code that engaged in "pure"

[8]Tests were also conducted using Barber and Lyon's (1997) approach with compounded stock returns (not taking logs). Consistent with the greater influence of outliers in these tests, the implied underperformance of myopic firms appears much greater (e.g., –58.9% for total four-year average underperformance relative to performance-equivalent benchmarks).

[9]The sensitivity of the results to several alternative definitions of firms engaged in accruals manipulation (e.g., no restriction on earnings surprise, positive discretionary accruals) was examined, and the results are fully consistent with those reported.

Figure 3

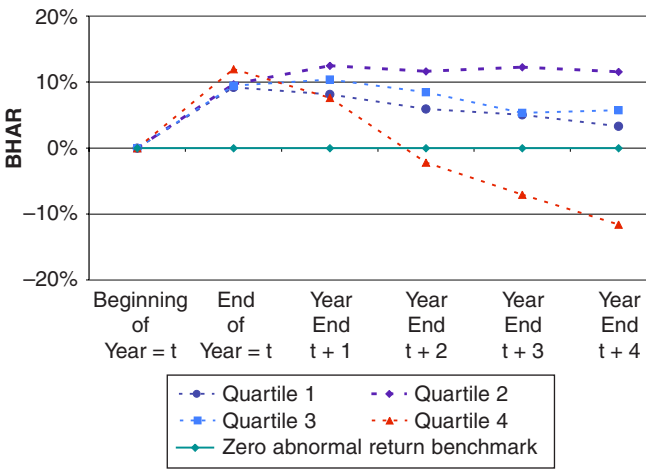
RAW STOCK RETURNS FOR FIRMS WITH POSITIVE EARNINGS SURPRISES ACROSS FOUR QUARTILE PORTFOLIOS OF ABNORMAL ACCRUALS




Notes: Four quartile portfolios are formed at the end of year t based on the magnitude of abnormal accruals, and their returns are tracked over the following four years. Quartile 1 portfolio contains firms with the greatest negative abnormal accruals, and Quartile 4 contains those with the largest positive abnormal accruals. The figure depicts the average pattern of raw stock returns and the pattern of average S&P 500 returns for the study period.

Figure 4

BHARS FOR FIRMS WITH POSITIVE EARNINGS SURPRISES ACROSS FOUR QUARTILE PORTFOLIOS OF ABNORMAL ACCRUALS




Notes: Four quartile portfolios are formed at the end of year t based on the size of abnormal accruals, and their BHARs are tracked over the following four years. Buy-and-hold abnormal returns control for firm-specific risk characteristics, as described in Table 1. The zero abnormal returns line provides the benchmark of expected performance.

accruals-based earnings inflation (i.e., nonmyopic firm in the top discretionary accruals quartile reporting positive ROA surprise) was identified. Myopic firms realized significantly more negative mean (–26.18% and –29.81%) and median (–17.97% and –20.77%) differential returns in the initial two years. However, as the sample size diminishes to only 368 and 269 observations by the third and fourth years, the mean and median differential returns, though still negative, are not significant. As such (perhaps because of limited sample size), there is no evidence of significant, negative differential returns to myopia with a matched-firm returns measure at three and four years.

## *DISCUSSION*

This study presents evidence that the financial markets do not differentiate well between firms that engage in myopic management and firms that do not. Myopic firms are not properly valued at the time they engage in myopic spending cuts; that is, in the initial year, they have stock returns comparable to nonmyopic firms with positive earnings surprises and realize substantial return premiums relative to firms with negative earnings surprises. Myopic management might have some short-lived benefits—it leads to higher current-term earnings and stock price—but it damages the long-term financial performance of the firm because the initial gains are followed by greater negative abnormal returns.

Table 6

TOTAL FINANCIAL CONSEQUENCES OF MYOPIC MANAGEMENT VERSUS ACCOUNTING-BASED EARNINGS INFLATION THROUGH DISCRETIONARY ACCRUALS

*A: Total Differential Financial Returns to Myopic Management Versus Accruals-Based Earnings Management Using CARs and BHARs*

| | *Estimate* | *SE* | *t-Statistic* | *N* | *F-Statistic* |
|---|---|---|---|---|---|
| *CAR Models* | | | | | |
| j = 0 | –.0458* | .02175 | –2.11 | 2756 | 4.44 |
| j = 1 | –.14761** | .03287 | –4.49 | 2429 | 20.17 |
| j = 2 | –.18188** | .04387 | –4.15 | 2139 | 17.19 |
| j = 3 | –.26208** | .05293 | –4.95 | 1860 | 24.52 |
| j = 4 | –.26383** | .06137 | –4.30 | 1548 | 18.48 |
| *BHAR Models* | | | | | |
| j = 0 | –.01510 | .02013 | –.75 | 2832 | .52 |
| j = 1 | –.10426** | .03336 | –3.13 | 2497 | 9.77 |
| j = 2 | –.13484** | .04531 | –2.98 | 2176 | 8.86 |
| j = 3 | –.16484** | .0532 | –3.10 | 1891 | 9.60 |
| j = 4 | –.17982** | .06014 | –2.99 | 1560 | 8.94 |

*B: Total Differential Financial Returns to Myopic Management Versus Accruals-Based Earnings Management Using Barber and Lyon's (1997) Matched-Firm Differential Returns*

| | *N* | *M* | *t-Statistic* | *Significance* | *Mdn* | *M-Statistic* | *Significance* |
|---|---|---|---|---|---|---|---|
| *Matching Benchmark Firms Are Drawn from All Firms with Positive Earnings Surprises Aggressively Inflating Discretionary Accruals* | | | | | | | |
| j = 0 | 711 | –.12509** | –4.43 | <.0001 | –.09308** | –39.5 | .0034 |
| j = 1 | 584 | –.2619** | –5.72 | <.0001 | –.17972** | –52.0 | <.0001 |
| j = 2 | 482 | –.2981** | –4.65 | <.0001 | –.20769** | –39.0 | .0004 |
| j = 3 | 368 | –.11578 | –1.42 | .1575 | –.02625 | –3.0 | .7944 |
| j = 4 | 269 | –.1445 | –1.32 | .1885 | –.0201 | –3.5 | .7146 |

*$p < .05$ (two-sided).

**$p < .01$ (two-sided).

Notes: Panel A reports parametric tests comparing potentially myopic firms with other firms: $abnStkR_{it+j} = \gamma_0 + \gamma_1 \times Myopic\_No\_Accruals\_Inflation_{it} + \eta_{it+j}$, where j = 0, 1, 2, 3, and 4 and Myopic_No_Accruals_Inflationit is equal to 1 if firms engaged in myopic management and did not engage in accrual-based earnings inflation and 0 if otherwise. Only the firms that engaged exclusively in myopic management and exclusively in accrual-based earnings management are included in the analysis, and the reported results are estimates of the differential long-term stock returns. Panel B presents nonparametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. The benchmark matching firm is required to have engaged in accruals-based earnings management. The abnormal multiyear stock return to the myopia-only firm is calculated as the difference in the continuously compounded raw returns to potentially myopic firm and its benchmark firm over the period: $AbnMatched\ Firm\ Ret_{it+j} = \log\prod_{m=1}^{j\times 12}(1 + ret_{im}) - \log\prod_{m=1}^{j\times 12}(1 + ret_{benchmark,m})$, where j = 0, 1, 2, 3, and 4; $ret_{im}$ is the holding period return for potentially myopic firm i in month m; and $ret_{benchmark,m}$ is the month m holding period return for the benchmark firm identified for firm i.

Firms that cut their support for marketing and R&D activities at the time they realize increased profitability have significantly lower future stock market valuations. They even underperform firms with negative earnings surprises and significantly underperform firms engaging in accounting-based earnings inflation. However, the financial markets take time to fully incorporate the financial implications of myopic spending cuts into firm valuation. The financial market's inability to assess the consequences of myopic strategies in a timely manner provides an opportunity for managers to engage in myopic management.

Much attention has been focused on improving and strengthening accounting norms and regulations to prevent firms from artificially inflating earnings. Some evidence suggests the success of new legislature in curbing accruals-based earnings management: The practice declined significantly in the post-Sarbanes-Oxley (SOX) environment (Cohen, Dey, and Lys 2008). Unfortunately, the reliance on real activities-based earnings management has increased significantly after the passage of SOX, suggesting that managers simply switched to myopic practices to manage earnings (Cohen, Dey, and Lys 2008). Given the significantly greater negative implications of myopia, it is surprising that little has been said and done about the role of real activity-based strategies for earnings management.

## *REDUCING INCENTIVES FOR MYOPIC MANAGEMENT*

Myopic management leads to inefficient decision making and lower future firm value. Several steps can be taken to diminish myopic behavior and its negative effects. First, firm owners (shareholders) should carefully consider how to motivate managers to focus on the long term. Putting more weight on the long-term (future) outcomes in the manager's compensation package (e.g., by extending vesting periods or delaying a portion of the payoff for a few years after a manager's departure) can help reduce the incentives for myopia. In addition, basic compensation and incentive schemes for managers should be tied to multiple observable and verifiable measures of performance. For example, Holmstrom (1979) shows that additional performance metrics are valuable. When managers' compensation is based on a set of performance signals, an additional signal is useful when the original set of signals does not already contain the information reflected in the new signal. In other words, the addition of a new signal is useful if it provides *incremental* information to the existing set. Many marketing assets are not immediately reflected in the accounting performance and therefore may serve as such useful additional signals about firm performance.

Second, firms should increase the amount and improve their voluntary information disclosure about performance-relevant assets (financial and nonfinancial). Lev (1992, p. 9) notes that "managers rarely devote to information disclosure the careful attention and thorough planning accorded to other corporate activities." However, research has shown that financial and nonfinancial (e.g., new product announcements; Chaney, Devinney, and Winer 1991) voluntary disclosures can have a significant impact. Firms, particularly those managing for the long term, need to send credible and meaningful (i.e., relevant to the future performance) signals about their strategy and future prospects to better differentiate themselves from firms engaging in myopia.

Finally, marketing researchers need to explore and better understand the role of various marketing metrics and the amount of incremental information they provide to traditional accounting performance measures in depicting the health of a firm. Not all metrics are equally valuable (Ittner, Larcker, and Taylor 2009; Jacobson and Mizik 2009a, b). Thus, research in marketing should focus on establishing the validity of marketing metrics and their incremental value in signaling future-term performance. What is particularly needed is investigation of which metrics provide information about future performance that is not already contained in current-term accounting measures (e.g., Joshi and Hanssens 2008; Mizik and Jacobson 2008; Srinivasan, Vanhuele, and Pauwels 2008). The focus should be on dynamic relationships between a metric and future-term performance: The measures that intertemporally lead performance outcomes are most valuable. This type of research calls for an increased need for time-series data analysis or for panel data (pooled cross-sectional time-series data) analysis focused on modeling dynamic relationships (Pauwels, Currim, et al. 2004). The preferred research would be in the spirit of Granger-causation tests (Granger 1969) and, in particular, out-of-sample Granger-causation tests. That is, after the dynamic properties of the accounting performance measure are taken into account, does the marketing metric lead performance?

Marketing researchers should also focus on developing better screening metrics to help identify myopic strategies. At times, the discounting, promotions, and spending cuts might be the optimal strategy and the optimal response to the changing market conditions. Identifying whether these tools are used to achieve myopic goals may be difficult. Developing better models of managerial incentives to engage in myopia and continuous measures of myopia is another important direction for further research. Finally, research focused on developing a better understanding of the mechanisms driving the future-term underperformance of myopic firms is needed. The efforts in creating and disseminating knowledge about the impact of marketing will help managers and investors realize that marketing and innovation are not discretionary but rather integral and valuable organizational functions.

## *CONCLUSION*

To free managers from the trap of myopic behavior, signals in addition to those provided by accounting measures are required. Marketing metrics can help reduce incentives for myopia and differentiate firms engaging in myopic behaviors from those that are not. In turn, this will encourage managers who wish to manage for the long term to do so and to have their activities properly valued by the financial markets.

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