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The Theory and Practice of Myopic Management

Natalie Mizik

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Natalie Mizik
Columbia University
Graduate School of Business
3022 Broadway
Uris Hall, Room 513
New York, NY 10027-6902
e-mail: nm2079@columbia.edu

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Abstract

We review the theory and empirical evidence of myopic management (the practice of cutting marketing and R&D spending to inflate earnings) as it pertains to marketing practice. We document empirically the stock market's inability to properly value marketing and innovation activity in the face of potential for myopic management. We assess the total financial consequences of myopic management and find that myopia has long-term net negative impact on firm value. We contrast myopic management with accounting accruals-based earnings inflation and show 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 we use. We discuss the role shareholders, managers, and marketing researchers can play in limiting myopic management practices.

Effective management requires long-term focus and choosing those strategic alternatives that yield an overall highest expected net present value, namely, strategies that maximize the sum of the discounted future profits. Increased managerial discount rates lead to inefficient decision making and can adversely affect a firm's future performance. Specifically, managers focusing on the short-term goals over-emphasize strategies with immediate pay-offs at the expense of strategies with superior but more distant pay-offs; that is, they engage in myopic management. Myopic management can manifest itself in many forms: cutting discretionary spending, selling off non-essential assets, over-investing into the assets that generate immediate payback at the expense of long-term assets with superior future profits, overproducing, discounting, and channel stuffing (i.e., overselling to distributors).

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 their owners' objectives. Managers commonly face incentives and feel pressures that increase their effective discount rates and lead to an over-emphasis on the short term. For example, managers feel pressure to meet earnings projections as the financial markets punish companies (e.g., driving down their stock price) that fail to meet analysts' expectations. Managers' personal motivation (e.g., career advancement considerations) and compensation structure, at times, 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 through 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 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 et al. 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.

Myopic management such as under-investing into research and development (R&D), advertising, and employee training for the purpose of meeting short-term goals, on the other hand, will affect economic profits. Myopic management involves altering operational practices and directly affects the business process. Myopic management, when initiated at the top organizational level, 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 et al. 2005; Lamey et al. 2007). Indeed, many marketing activities impact intangible assets with long-term effects on business performance (e.g., brand equity and customer loyalty), which often also require substantial immediate costs to support them.

The situation is further exacerbated by the fact that we still know relatively little about the full impact of marketing assets and strategies on financial performance and firm value. Rust et al. (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 created the unfortunate state where marketing is under-valued and is viewed as a discretionary activity. Many are now calling for increased research efforts to help rectify the situation, and marketing researchers have begun to pay more attention to and investigate the links between marketing activity and the level, timing, and stability of financial performance (e.g., Aaker and Jacobson 1994, 2001; Anderson et al. 2004; Geyskens et al. 2002; Golder and Tellis 1993;

Gupta et al. 2004, 2006; Lehmann 2004; McAlister et al. 2007; Moorman and Rust 1999; Pauwels et al. 2004; Rust et al. 2002; Sorescu et al. 2003, 2007; Srinivasan and Hanssens 2009).

Recent research has also begun to explore empirically some myopic marketing management practices (e.g., Chapman and Steenburgh 2007, Mizik and Jacobson 2007, Moorman and Spencer 2008). Thus far, however, the empirical research into managerial myopia has been sparse, rarely focused on the consequences of myopia, and often based on a narrowly defined specific context (e.g., quarterly earnings targets, seasoned equity offerings). Many questions remain unanswered and provide an exciting and important area for research.

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

The paper proceeds as follows. We first review the theory of myopic management, discuss the empirical evidence of the phenomenon available to date as it applies to marketing theory and practice, and present our hypotheses. Next, we discuss empirical modeling and data, and present results. We conclude with a discussion of unique challenges marketing managers face in dealing with myopia in their organizations and the role the shareholders, managers, and marketing researchers can play in limiting myopic management practices.

The Theory of Myopic Management

1. Conceptual Background

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

Hidden Action Models

Basing managerial compensation and incentives on the stock price, under perfect information conditions, results in efficient decision making on the part of managers. This result explains the widespread use of stock options and stock grant incentives in employee compensation schemes. However, once information asymmetries are introduced into the system, the economic outcomes differ significantly from the perfect information outcomes. When managerial compensation is linked to the stock market performance, managers might attempt to manipulate the share price rather than maximize the firm value.

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

Hidden Information Models

Myopic management can also occur when managers (i) care about their stock price and (ii) 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 the firm actions, some managers might manipulate their actions to create a favorable market reaction.

(1) Signaling: Signaling models, first introduced by Spence (1973), provide one private information framework that demonstrates how myopic outcomes can occur. In a signaling framework, firms face good or bad prospects which are unobservable by the market (or are more or less efficient). 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 case of better efficiency) investment level (Bebchuk and Stole 1993; Bizjak et al. 1993; Trueman 1986) or by choosing a specific project type (Hirshleifer et al. 2001). Depending on the cost and pay-off conditions, a separating equilibrium may result, where managers make efficient investment decisions, and the market values them properly.

This outcome, however, 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 they are facing good prospects. Such signal-jamming behavior breaks the optimal separating equilibrium and may force the good firms to invest at an even greater (lower in case of better efficiency), non-optimal level to separate themselves from the bad firms. Bizjak at al. (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 the more managerial remuneration depends on current stock price and the higher the probability the manager will depart the firm (retire) in the near term.

Depending on model specifications, signaling models can yield outcomes where myopic behavior incentives lead to over-investment, under-investment, or result in a sub-optimal choice of a

particular project type. Milgrom and Roberts (1992, p. 471) comment that managers generally "put too much emphasis on activities that boost short-term performance compared to those whose benefits will be hidden."

(2) 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 drop out and choose to 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 pay-off for the firm.

(3) Information Neglect: Information neglect is yet another private information framework where 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, instead of acting on their better private information and making optimal investments for the firm, they choose those 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 specific conditions the firm is operating in. Myopia can be manifest in an under-investment into long-term assets, an over-investment into short-term assets, a choice of specific projects, or conformism with markets' beliefs. All of these strategies can involve marketing assets and marketing strategies.

Stein (1989) argues that in an attempt to manipulate earnings, myopic managers will most likely sacrifice those assets that are not on the company's balance sheet (i.e., intangible assets) and are not directly related to production. In many firms marketing assets are perceived to fall into this category. Further, Paul (1994) comments that managers are not systematically biased toward short- or long-term projects. Rather, they will be biased toward the projects the stock market can best evaluate in the short-run. Here again, marketing is at a disadvantage as we still know relatively little about marketing's financial impact (Rust et al. 2004).

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

2. The Evidence on the Practice of Myopic Management

While much research effort has focused on studying accounting-based earnings management (see Dechow and Schrand 2004 for review), few studies in accounting and marketing literature have also examined management practices associated with myopic management phenomenon. The most comprehensive, perhaps, is the exploratory survey by Graham et al. (2005) who conducted interviews and surveyed top company executives (CFOs) about their attitudes toward and their strategies for earnings management. Graham and colleagues (2005) found that when faced with a possibility of falling below their desired quarterly earnings target, 80% of CFOs (the highest rated option) said they would decrease discretionary expenditures such as advertising and R&D; 55% said they would delay a start of a new project even if such a delay led to a sacrifice in value; and 39% said 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 clearly show that marketing activities, assets, and funding commonly provide the means and resources for achieving such myopic goals.

Indeed, myopic practices can occur at all levels of the organization: at the very top when resource allocation and investment decisions are made and at the very end of the channel where consumer interactions occur. Several studies have examined different contexts and documented evidence of firm-level myopic management practices. For example, Dechow and Sloan (1991) examined managerial behavior around the end of the top managers' tenure. They find that firms tend to reduce their R&D spending in the final year before the top executives' retirement. Bushee (1998) investigated the role of institutional investors and its impact on managerial incentives for myopic behavior; he examined the use of R&D spending cuts as a means to reverse a decline in earnings. He finds that firms with high institutional ownership have a lower probability of cutting R&D spending to reverse earnings decline and attributes this finding to the monitoring role institutions play in reducing 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 expenditures. Penman and Zhang (2002) find that cutting investments helps boost reported earnings. 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, which have been reported in pricing, branding, and product management contexts. Hauser, Simester, and Wernerfelt (1994), for example, 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-run profits. More recently, Lehmann (2004) points out a widespread over-concern about short-term results. He proposes that multiple performance metrics should be used at all levels of organization to help remedy the short-term bias.

Aaker (1991) discusses myopic management practices as they relate 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 although a decline in brand equity is not immediately noticeable, these strategies allow managers to provide immediately observable improvements in financial results. Aaker (1991) views the willingness to engage in these myopic practices with potentially harmful long-term effects as evidence of a managerial short-term bias.

Chapman and Steenburgh (2007) document an interesting myopic strategy at the retail level. They find that some firms attempt to increase sales by offering price discounts on non-perishable groceries at the end of a fiscal quarter to increase their financial performance indicators, whereas no such discounting occurs for perishable goods in their product portfolio. The motivation, presumably, is to promote goods consumers can stockpile, thus shifting sales and earnings from the future quarter into the current fiscal period.

Although the evidence 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 the negative consequences of some short-term focused marketing strategies myopic managers might utilize. For example, much attention has been devoted to study of reference price effects and the negative consequences of teaching the consumer lower reference price through promotions or discounting (e.g., Erdem et al. 2001; Mazumdar et al. 2005; Mela et al. 1997, 1998; Pauwels et al. 2002). Pauwels at al. (2004), for example, investigate the effects of promotions and show empirically the detrimental effects of over-reliance on sales promotions. They study the automobile industry and present evidence documenting long-term negative effects of sales promotions on manufacturers' firm value.

Lamey et al. (2007) examine the dynamics of the store and national brand shares over the business cycle and find that national brands lose share at the time of economic downturn and do not fully recover their positions during the expansion periods. This occurs, in part, because the consumers

learn through experience that the actual quality of the store brands is higher than their perceived quality. The authors argue that, in addition to weaker demand and higher consumer price sensitivity, the tendency of the national brands' managers to cut marketing support exacerbates their share loss. Mizik and Jacobson (2007) focused on earnings and marketing spending patterns of firms issuing seasoned equity offerings (SEOs). They 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. They document evidence consistent with some public firms playing a ratchet game, i.e., slowing down the introduction of innovations in order to manage down stock market expectations and to manage up market reaction. While this strategy appears to work (stock market reaction to ratchet strategy is positive), it is costly as firms playing the ratchet game realize greater revenue losses.

3. 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 early on. 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 relatively little effort has been devoted to understanding how marketing assets impact financial performance of the firm (Rust et al. 2004).

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 (i.e., spend on) long-term marketing and innovation capabilities? Is the market able to distinguish and appreciate considerations related to myopia; in other words, does it ***properly*** 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, we need to (1) assess the immediate (same time period) market reaction and (2) examine whether an additional valuation adjustment occurs in the future. Any evidence of future adjustment would mean the strategy was not properly valued initially.

Immediate Market Response

Because investors use multiple signals to form expectations of firm future performance, we would expect them to appreciate the fact that firms cutting their marketing and R&D spending at the same time as they are reporting increased earnings might have engaged 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 the future performance. If the market participants appreciate this fact and realize that the "quality" of reported earnings might be lower for firms cutting marketing and R&D spending, they would value such earnings systematically lower compared to other firms with increased profitability. This leads to our first hypothesis.

> **Hypothesis 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 the other firms with increased profitability that did not decrease their marketing and R&D effort.*

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, a systematic post-event negative adjustment in the valuation of myopic firms will be observed.[1] Empirical and anecdotal evidence on the prevalence of cutting marketing and R&D-related spending to achieve short-term performance goals suggests that, indeed, the market might be under-reacting to myopic marketing and R&D cuts and that it might take time for the market to fully appreciate these myopic strategies. Thus, we formulate our second hypothesis.

Hypothesis 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

Hypothesis 2 suggests 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 overweigh the benefits of higher valuation in the initial period?

Srivastava at al. (1998) argued that marketing is responsible for developing and managing market-based assets (customer, channel, and partner relationships). These intangible assets influence market outcomes, such as new product adoption, referrals, pricing power, and customer loyalty and retention. Marketing efforts increase shareholder value by accelerating/enhancing cash flows and lowering volatility of cash flows. Even a temporary disruption in the flow of resources into marketing assets can adversely impact the firm's competitive position in the market, customer perceptions and attitudes, and the stream of revenues. As such, we believe the future negatives might overweigh the initial gains in firm valuation and we test an additional hypothesis.

Hypothesis 3: *The total long-term consequences of myopic management, that is, cutting support for marketing and R&D activities by firms with enhanced financial performance, are negative.*

Myopic Management versus Accounting-Based Earnings Inflation

Manipulation of accounting numbers (discretionary accruals management) and myopic management are alternative ways to inflate earnings. While these two methods are different means to achieve the same goal, these methods have very different 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. Myopic management, on the other hand, alters operational practices and

can diminish true economic profits. In other words, while the outcome might be the same (inflated earnings), the costs of undertaking these strategies differ and are significantly greater for myopic management. As such, we expect the negative long-term performance consequences of myopia to be more severe.

> **Hypothesis 4:** *The total long-term consequences of myopic management are more severe than the total long-term consequences of accounting-based earnings management.*

Empirical Modeling

Identifying Myopic Management

When firms realize improved financial performance they have an opportunity and 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. In other words, the appearance of improved financial performance is due to the strategy of decreasing investments into long-term assets.

We argue that firms that simultaneously report 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. By incorporating R&D as the third dimension into the screening metric for myopic management, we extend the Mizik and Jacobson's (2007) two-dimensional screen and are better able to 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 it is realizing increased profitability (e.g., Bayus et al. 2003). Or, it might be simply shifting resources from marketing to R&D efforts. This shift might occur, for example, when the firm is dealing with technological breakthroughs in the industry, or 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 a two-dimensional indicator would suggest the presence of myopia, but

with a three-dimensional metric, which also considers R&D intensity, we will be able to properly infer that these firms are not myopic but are simply shifting their strategic emphasis and resources.[2]

Thus, we focus on the group of firms that simultaneously report greater than normal operating profits (ROA) and lower than normal marketing (Mktg) and R&D intensity. We select 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 $\widehat{ROA}_{it|it-1}$, $\widehat{Mktg}_{it|it-1}$, $\widehat{R\&D}_{it|it-1}$ reflect the normal or expected level of profitability, marketing, and R&D intensity for firm i in period t. These are the firms that might be decreasing their marketing and R&D spending with the intention to inflate reported earnings.

In order to identify potentially myopic firms, we first need to determine the "normal" or expected level of profitability and marketing and R&D intensity for each firm for each time period. We use the following fixed-effects autoregressive panel data forecast models to compute next-period normal levels of firm earnings, marketing, and R&D intensity:[3]

Profitability Equation: [1a] $ROA_{it} = \alpha_{roa,i} + \phi_{roa} * ROA_{it-1} + \sum_{t=1}^{T} \delta_{roa,t} * Year_t + \sum \lambda_{roa,sic} * SIC_{sic} + \varepsilon_{roa,it}$;

Marketing Equation: [1b] $Mktg_{it} = \alpha_{mktg,i} + \phi_{mktg} * Mktg_{it-1} + \sum_{t=1}^{T} \delta_{mktg,t} * Year_t + \sum \lambda_{mktg,sic} * SIC_{sic} + \varepsilon_{mktg,it}$;

R&D Equation: [1c] $R\&D_{it} = \alpha_{rd,i} + \phi_{rd} * R\&D_{it-1} + \sum_{t=1}^{T} \delta_{rd,t} * Year_t + \sum \lambda_{rd,sic} * SIC_{sic} + \varepsilon_{rd,it}$, where ROA_{it}, $Mktg_{it}$, $R\&D_{it}$ are profitability, marketing intensity, and R&D intensity, respectively, for firm i in period t, and ROA_{it-1}, $Mktg_{it-1}$, $R\&D_{it-1}$ are their lagged values. $Year_t$ is a set of dummy variables, each equal to 1 if year is equal to t and 0 otherwise. SIC_{sic} is a set of dummy variables, each equal to 1 if firm i has a two-digit industry classification number equal to SIC code, and 0 otherwise. $\alpha_{roa,i}$, $\alpha_{mktg,i}$, and $\alpha_{rd,i}$ are the firm-specific intercepts in profitability, marketing, and R&D models. ϕ_{roa}, ϕ_{mktg}, and ϕ_{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

$\varepsilon_{rd,it}=(R\&D_{it} - \widehat{R\&D}_{it|it-1})$. We use these values to perform classification of firms into potentially myopic and non-myopic groups.[4]

Identifying Accounting-Based Earnings Management: Discretionary Accruals

Reported earnings are composed of a cash component and 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 allow managers to engage in earnings management because accruals require managers to make estimates (e.g., expected proportion of non-paying customers) and forecasts (e.g., useful asset life). Extensive research in accounting has focused on modeling "normal" and "discretionary" (i.e., abnormal, inconsistent with firm situation) levels of accruals (Kothari et al. 2005). High level of discretionary accruals is an indicator that a firm might have engaged in earnings inflation. We follow Kothari et al. (2005) and compute discretionary accruals as the difference between the actual and the predicted value of total accruals from the following model:[5]

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

where TA_{it} is total accruals scaled by lagged total assets, $Assets_{it-1}$ is lagged total assets, and $\Delta Sales_{it}$ is change in sales net of accounts receivable, PPE_{it} is net property, plant, and equipment, $NetIncome_{it}$ is net income, all scaled by lagged total assets. We designate 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 et al. 1998) as firms that potentially engaged in accrual manipulation in order to inflate current earnings.

Testing Hypothesis 1

Hypothesis 1 predicts that market participants appreciate the differences in earnings quality of potentially myopic and non-myopic firms and react less positively to earnings reported by myopic firms. Hypothesis 1 holds if market participants realize 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, we would see no difference in stock returns.

We can test Hypothesis 1 by examining the differences in stock returns for firms we classify as potentially myopic (i.e., firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$, $(Mktg_{it} - \widehat{Mktg}_{it|it-1}) < 0$, and $(R\&D_{it} - \widehat{R\&D}_{it|it-1}) < 0$) and comparing them to stock returns realized by all other firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$. We can do so by estimating the following model:

[4] $abnStkR_{it}=\chi_0 + \chi_1*Myopic_{it} + \eta_{it}$, 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 on the value of 1 if firm i in year t was categorized as potentially myopic, and zero otherwise. To ensure appropriate benchmarking (i.e., against other firms with equivalent profitability), the estimation data sample only includes firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$ in year t. Under Hypothesis 1 we would observe $\chi_1<0$, and under the null $\chi_1=0$.

Testing Hypothesis 2

Hypothesis 2 suggests that the financial markets do not distinguish and/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 suggests 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. That is, the misvaluation of marketing and R&D contribution to firm performance is pervasive and widespread.

We can test Hypothesis 2 by assessing the difference in future multi-year risk-adjusted stock returns between the portfolio of potentially myopic firms and the portfolio of non-myopic benchmark firms. We can estimate the following model:

[5] $abnStkR_{it+k|t}=\lambda_{0k} + \lambda_{1k}*Myopic_{it} + \eta_{it+k}$, for k = 1, 2, 3, and 4,

where $abnStkR_{it+k|t}$ is the k-period ahead (i.e., future multi-period) risk-adjusted stock return for firm i, with classification into myopic and non-myopic portfolios occurring at time t, and $Myopic_{it}$ defined as previously. Under Hypothesis 2 we will observe a slow negative adjustment in the valuation of

potentially myopic firms 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 timely (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 non-myopic firm portfolios and we will not be able to reject $\lambda_{11} = \lambda_{12} = \lambda_{13} = \lambda_{14} = 0$.

An important question for testing Hypothesis 2 is: What is an appropriate benchmark? One view is that to ensure appropriate comparison, we need to ensure equivalence in the firms' financial situation and, therefore, should restrict the benchmarks to only those firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$ (i.e., exclude all firms with negative earnings surprise). The rationale for this view is that for a fair comparison we need to benchmark against firms comparable in all respects (including financial situation) and only differing in terms of their marketing and R&D spending strategy.

An alternative view, however, is that firms cutting marketing and R&D and reporting positive earnings surprises might have achieved a positive earnings surprise because they cut spending on marketing and R&D. These firms, without the spending cuts, could have been either above or below their normal ROA level and, therefore, should be compared to all non-myopic sample firms with positive or negative earnings surprises. The third, 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., $ROA_{it} - \widehat{ROA}_{it|it-1} < 0$) for a more stringent test.

Because all three of these views have merit, we will undertake the tests of Hypothesis 2 using all three alternative benchmarks. We will examine the relative performance of myopic firms compared to (1) all other firms in the data sample, (2) all other firms with positive earnings surprises, and (3) all firms with negative earnings surprises in our sample.

Testing Hypothesis 3

Hypothesis 2 assesses the magnitude of adjustment in the valuation of potentially myopic firms in the future years. Hypothesis 3 addresses the total consequences of myopia, namely, including the

financial market reaction in the initial period, when the myopic firms presumably realized the benefits of myopic management. We can test Hypothesis 3 by assessing the difference in future multi-year cumulative risk-adjusted stock returns for firms with decreased marketing and R&D spending versus benchmark firms when the initial period is taken into the account. That is, we can estimate:

[6] $abnStkR_{it+j|t}=\gamma_{0j} + \gamma_{1j}*Myopic_{it} + \eta_{it+j}$, for j = 0, 1, 2, 3, and 4, where

$Myopic_{it}$ and $abnStkR_{it}$ are defined as previously.

Under Hypothesis 3 the negative valuation adjustment begins in the future years and $\gamma_{10} \geq \gamma_{11} \geq \gamma_{12} \geq \gamma_{13} \geq \gamma_{14}$. Then, at some point in time, the multi-period abnormal stock returns become negative, and at the end of the study period, $\gamma_{14}<0$. Under the null Hypothesis 3, we will not see any systematic adjustment following the initial period, and $\gamma_{10}= \gamma_{11}=\gamma_{12}=\gamma_{13}=\gamma_{14}$.

Because the arguments regarding an appropriate benchmark advanced for testing Hypothesis 2 also apply here, we again use three different benchmarks to test Hypothesis 3. In fact, the different benchmarks will allow us to better answer the questions of whether it ever makes economic sense for a firm to inflate earnings through cuts to marketing and R&D spending. That is, Hypothesis 3 is most likely to be supported against equivalent-financial benchmark portfolio. However, we might find it is rejected against benchmarks with negative earnings surprises. If the four-year return differential between potentially myopic and benchmark firms with $(ROA_{it} - \widehat{ROA}_{it|it-1}) < 0$ is non-negative (i.e., $\gamma_{14} >0$), this result might suggest the existence of a long-lasting benefit of myopia for firms engaging in myopic spending cuts to avoid negative earnings surprises.

<u>Testing Hypothesis 4</u>

Hypothesis 4 argues that the consequences of myopia are more negative than those of accruals-based earnings management. We can test this hypothesis by contrasting the relative long-term performance consequences of firms engaging in "pure" myopic management versus "pure" accruals-based earnings inflation. We can assess the differential consequences with the following model:

[7] $abnStkR_{it+j|t}=\delta_{0j} + \delta_{1j}*Myopic\_and\_NoAccruals\_Inflation_{it} + \eta_{it+j}$, for j = 0, 1, 2, 3, and 4, where

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 abnStkR_{it} is defined as previously. To ensure appropriate benchmarking, the estimation sample only includes the myopic firms and firms engaged in aggressive accruals inflation with positive earnings surprises, but excludes firms simultaneously engaged in both myopia and accruals-based earnings inflation. Under Hypothesis 4 we would observe lower returns to myopic firms ($\delta_{1j}<0$), and under the null there would be no differences between the two groups ($\delta_{1j}=0$).

Data

We used two databases to compile the dataset for our analyses. We accessed the annual Compustat database for accounting information for all firms listed for 1986–2005 and CRSP monthly returns database for stock returns data for the same period. We obtained the market, size, book-to-market, and momentum risk factors 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 consisting of 76,875 firm-year observations for a total of 6,642 unique firms. In order to ensure correspondence in the data reporting across all firms in the sample, we have restricted our sample to firms with December fiscal year end. In order to minimize any potential survivorship bias and to preserve the degrees of freedom, we did not delete any industries or specific firms from our sample. Neither did we require that the data were available for a certain number of periods for a firm to be included into the study sample.

We use operating income before depreciation divided by total assets as our measure of profitability (i.e., Compustat Data13/Data6). Barber and Lyon (1996) advocate the use of this metric rather than an alternative accounting performance measure (e.g., operating income after depreciation or 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) subject to accounting-based earnings manipulation (Barber and Lyon 1996, pp. 361–64).

Following Dutta, Narasimhan, and Rajiv (1999) and Mizik and Jacobson (2007), we use selling, general, and administrative (SG&A) expenditures minus R&D expenditures divided by total assets (Compustat (Data189-Data46)/Data6) as a proxy for marketing expenditure intensity.[6] We use R&D expenditures divided by total assets (Compustat Data46/Data6) as the measure of innovation intensity. Following accounting literature, we define total accruals as the change in non-cash 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 (Compustat (ΔData4-ΔData1-(ΔData5-ΔData34)-ΔData14)/lag(Data6)).

Our hypotheses tests require comparisons of current and future risk-adjusted stock returns. Several methods and asset pricing models exist for estimating risk-adjusted returns. No consensus exists, however, as to which method is preferable (for a discussion see, for example, Barber and Lyon 1997, Fama 1998). As such, to ensure the robustness of our results to alternative approaches for computing abnormal returns, we utilize three alternative measures of abnormal returns. We use the Fama and French (1993, 1996) three-factor plus momentum (Carhart 1997) model and compute compounded abnormal returns (CAR). We also use the time-varying risk characteristics approach (e.g., Daniel and Titman 1997) to compute buy-and-hold abnormal returns (BHAR). The most notable difference between these two abnormal return models is that in CAR risk factor premiums (Betas) vary by firm but are stable over time, whereas in BHAR the risk characteristic premiums vary over time. As a sensitivity check, we also asses our hypothesis using the Barber and Lyon (1997) matched-firm approach to compute the abnormal returns. Table 1 Panel A reports descriptive statistics for variables used in our analyses, and Table 1 Panel B reports bivariate correlations. The variable definitions section of Table 1 provides variable definitions and the details of abnormal return calculations.

Results

Identifying Myopia

We use Anderson and Hsiao's (1982) approach to estimate our panel data fixed effects autoregressive forecast models [1a], [1b], and [1c]. Results of this estimation, which we present in Table

2, document significant persistence levels in all three equations. After obtaining estimates of $\hat{\alpha}_i$ and $\hat{\phi}$, we compute the next-year forecasts for profitability ($\widehat{ROA}_{it|it-1}$), marketing intensity ($\widehat{Mktg}_{it|it-1}$), and R&D intensity ($\widehat{R\&D}_{it|it-1}$). We compute the forecast errors for each firm and each year and assign firms into "potentially myopic" group and "non-myopic" benchmark groups based on the sign of the resulting forecast errors. A total of 20.7% of sample observations are classified as instances where myopic management potentially takes place (i.e., firms with $ROA_{it} - \widehat{ROA}_{it|it-1} > 0$, $Mktg_{it} - \widehat{Mktg}_{it|it-1} < 0$, and $R\&D_{it} - \widehat{R\&D}_{it|it-1} < 0$); 32.9% were classified as non-myopic firms having positive earnings surprise (i.e., firms with $ROA_{it} - \widehat{ROA}_{it|it-1} > 0$, not cutting marketing and R&D spending); and 46.4% were classified as firms having 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 non-myopic firms. To provide a simple benchmark of performance, Figure 1 also depicts the pattern of average S&P500 returns for the study period. The first obvious difference we observe 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%. We observe a positive market response, above S&P500 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 firms we classified as potentially myopic have a slightly lower average raw stock return (12.5%) than the non-myopic firms with positive earnings surprises (15.5%). In the following year the positive market response to potentially myopic firms is reversed, and we observe a clear negative trend in the years that follow. The non-myopic firms with either positive or negative earnings surprises, on the other hand, exhibit upward trends that closely parallel the performance of the S&P500. 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 non-myopic benchmark portfolios (29.2% and 13.3%) and the S&P500 return of 21.6%.

Although consistent with our predictions, the results depicted in Figure 1 provide no indication as to whether any of the differences we observe are significant or whether they are driven by differences in risk. To formally assess the returns to myopia, we undertake formal statistical tests.

Testing Hypothesis 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 0.0189 between these groups is significant ($p<.0001$). 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 would devalue earnings information and, as a result, the stock returns for the firms cutting marketing and R&D spending will be smaller than for other firms reporting improved profitability. We test Hypothesis 1 by assessing the differences in the risk-adjusted stock returns for firms we classified as potentially myopic versus the non-myopic firms reporting increased profitability. Table 3 Panel A reports the results of estimating Equation 4 using compounded and buy-and-hold abnormal return measures.

We find that, contrary to our Hypothesis 1, the stock return differential between potentially myopic and non-myopic firms is positive for both measures of abnormal returns, but is not statistically significant at the 5% level. These results suggest that firms cutting marketing and R&D spending may be able to inflate their earnings sufficiently to circumvent any possible discounting of their earnings. The stock market does not penalize firms for cutting marketing and R&D spending at the time of improved profitability.

To further assess the market valuation of potentially myopic firms, we undertook additional tests 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. We impose an additional constraint on the benchmark firms to allow for a direct test of Hypothesis 1. Specifically, we require benchmark firms to have $(ROA_{it} - \widehat{ROA}_{it|it-1}) > 0$.

Following Barber and Lyon (1997), for each firm we classified as potentially myopic, we selected a benchmark firm among all firms with positive earnings surprise in the same year and in the same two-digit SIC group, with a market value of equity between 70 and 130%, and with the book-to-market ratio closest to that of the potentially myopic firm. In those cases where we were unable to identify a matching firm at the two-digit SIC level, we selected the benchmark firm at the one-digit SIC level. We compute the differential abnormal return for each potentially myopic firm 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 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 the tests using Barber and Lyon's (1997) matched-firm approach. For a total of 2,561 of firms we classified as myopic, we were able to find a matching firm with positive ROA surprise and returns data available. The values in the table reflect the mean and median differences in the stock returns realized by potentially myopic firms and their SIC, size, and book-to-market matched benchmarks, reporting positive ROA surprises and not cutting their marketing and R&D spending. We find no significant mean (-1.8%) or median (-1.4%) differences. Again, we reject Hypothesis 1 and conclude that the stock market does not appear to value myopic firms less than non-myopic firms.

As evidenced in Table 3, our 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), Fama (1998), and many others discuss the relative theoretical and statistical benefits of the various measures and argue for their advantages over the other measures. The issue, however, is far from settled and the debate continues. Since the merits and advantages of the various measures are not the focus of

this study, we chose to present results using several alternative common measures of abnormal returns. This approach allows us to assess the robustness of our results to alternative specifications and gives the reader the ability to focus on his/her preferred return metric.

Testing Hypothesis 2

We postulated that firms with below 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 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 market participants impound the consequences of myopic management only when the impact of myopic strategy has been reflected in the bottom line performance, then myopic firms will have lower future-year stock returns.

Table 4 Panel A reports the results of testing Hypothesis 2 using compounded and buy-and-hold abnormal returns and three alternative benchmark portfolios. The pattern of the results fully supports Hypothesis 2 and is consistent across all the alternative benchmarks and alternative measures of abnormal returns. The future risk-adjusted stock returns of firms we classified as potentially engaging in myopic management are significantly lower than stock returns of benchmark firms, and the magnitude of these negative returns increases over time. The implied magnitude of future underperformance differs little across benchmarks, and abnormal return measures and after four years is around -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 Hypothesis 2 using matched firm differential returns. Here again, we observe a pattern supporting Hypothesis 2 and fully consistent with results reported in Table 4 Panel A. The mean and median abnormal returns are significantly negative across three alternative benchmarks. The firms we classified as potentially myopic significantly under-perform

their size and book-to-market matched counterparts. The implied magnitude of underperformance using Barber and Lyon's (1997) approach, however, 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 Hypothesis 3

To assess the full consequences of myopic management, we examine the multi-year 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 the results of Hypothesis 3 tests using compounded and buy-and-hold abnormal returns and Figure 2 depicts BHAR results. First, we observe a notable difference in the premiums potentially myopic firms realize in the initial year compared to their benchmarks. Although they have no significant premium over stock returns realized by non-myopic firms with positive earnings surprises (i.e., equivalent performance benchmark), compared to all other firms in the sample, the myopic firms realize a 16.7% (CAR) and 14.4% (BHAR) premium. When benchmarked to firms with negative earnings surprises, the myopic firms realize a 26.9% (CAR) and 24.4% (BHAR) premium. These results suggest that myopic managers facing a potential of failing below the expected level of earnings might realize at least a temporary benefit from earnings inflation achieved by cutting marketing and R&D spending. Performance of myopic firms over the following four years, however, indicates that such manipulation is not justified in the long term.

In the years that follow, any initial premiums realized by myopic firms 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 portfolio of firms with equivalent financial situation (i.e., all other firms with positive earnings surprise) is -26.7% (CAR) and -33.5% (BHAR). Most notably, however, potentially myopic firms significantly underperforms firms with 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 myopic management of marketing and R&D. The overall cost of this myopic strategy overweighs the initial benefits.

Table 5 Panel B reports analysis using Barber and Lyon's (1997) matched-firm differential returns. The results are fully supportive of Hypothesis 3 and consistent with 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 potentially myopic firms, on average, under-perform their size and book-to-market matched benchmarks by -13.3% (with median under-performance of -13.8%) when the benchmarks are selected without additional restrictions on their earnings condition in the initial period. On average, myopic firms under-perform their performance-equivalent benchmarks (i.e., firms with positive earnings surprise in the initial period) by -17.7% (median=-17.2%) and their benchmarks with a negative earnings surprise by -14.4% (median=13.7%).[7]

Identifying Accruals-Based Earnings Inflation

Following prior research in accounting we estimate Model [2] cross-sectionally for each year using all firm-year observations in the same two-digit SIC code and compute discretionary accruals as the difference between the normal level (predicted values) and the actual total accruals. We select firms with positive earnings surprises and falling into the top quartile of discretionary accruals as firms that potentially engaged in accruals-based earnings inflation. We form four quartile portfolios based on the level of discretionary accruals and Figure 3 presents the pattern of average raw returns and Figure 4 of average BHAR realized by firms with positive earnings surprises in each of the quartile portfolios. Clearly, firms in the top quartile portfolio of discretionary accruals (which we designated as likely engaged in accruals-based earnings inflation) exhibit significantly lower future returns than other portfolios,[8] but our Hypothesis 4 argues that consequences of myopia are more severe.

Testing Hypothesis 4

We estimate model [7] to assess the differential future performance of firms engaging in myopia versus accruals-based earnings inflation. That is, we contrast firms that pursue "pure" myopia (69.8% of

myopic firms do not engage in aggress accruals inflation) and "pure" accruals-based earnings inflation strategies. CAR and BHAR test results are reported in Table 6 Panel A. For both abnormal return metrics we document consistently and significantly more negative future differential returns for firms that engaged in myopia. After four years myopic firms have -26.38% lower CAR and -17.98% lower BHAR. As such, we have strong support for Hypothesis 4.

We also test Hypothesis 4 using Barber and Lyon (1997) matched firm returns and report results in Table 6 Panel B. For 711 firms engaging in "pure" myopic management (i.e., not simultaneously engaging in aggressive accruals inflation) we were able to identify a size and book-to-market matching firm for the same year and in the same 2-digit (or 1-digit) SIC code that engaged in "pure" accruals-based earnings inflation (i.e., non-myopic firm in the top discretionary accruals quartile reporting positive ROA surprise). We document significantly more negative mean (-26.18% and -29.81%) and median (-17.97% and -20.77%) differential returns realized by myopic firms in the initial two years. However, as the sample size diminishes to only 368 and 269 observations by years three and four, the mean and median differential returns, while still negative, are not significant. As such (perhaps due to limited sample size), we do not have evidence of significant negative differential returns to myopia with matched-firm returns measure at three and four years.

Discussion

We present evidence that the financial markets do not differentiate well between firms engaging in myopic management from those firms that are 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 non-myopic firms with positive earnings surprises and realize substantial return premiums as compared 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 as the initial gains are followed by greater negative abnormal returns. Firms cutting their support for marketing and R&D activities at the time they realize increased profitability

have significantly lower future stock market valuations. They even under-perform firms with negative earnings surprises and significantly underperform firms engaging in accounting-based earnings inflation. However, the financial markets take quite some time to fully incorporate the financial implications of myopic spending cuts into firm valuation. The financial market's inability to timely assess the consequences of myopic strategies 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 success of new legislature in curbing accruals-based earnings management: the practice declined significantly in the post-Sarbanes-Oxley (SOX) environment (Cohen et al. 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. 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.

The Role of Owners/Shareholders, Managers, and Marketing Academics in Reducing Incentives for Myopic Management

Myopic management leads to inefficient decision-making and lower future firm value. A number of 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 pay-off 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. Holmstrom (1979), for example, 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 can serve as useful additional signals about firm performance.

Firms should increase the amount and improve their voluntary information disclosure regarding performance-relevant assets (financial and non-financial). Lev (1992, page 9) comments that "managers rarely devote to information disclosure the careful attention and thorough planning accorded to other corporate activities." Research, however, has shown that financial and non-financial (e.g., new product announcements, Chaney et al. 1991) voluntary disclosures can have 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. Although management reputation is obviously important in signaling credibility, quantifiable and verifiable metrics are invaluable in establishing a base from which to evaluate a strategy. Here, again, marketing metrics can play a key role.

Marketing metrics can serve two key functions in limiting myopic behavior and its consequences. First, to the extent that marketing metrics are monitored and reported, marketing assets are less likely to be dissipated through myopic management. Stein (1989) notes that expenditures that are off the balance sheet are the ones myopic managers seeking to inflate current-term earnings are most likely to sacrifice. Efforts to track marketing metrics can serve to limit this type of behavior.

Second, marketing metrics can provide signals of future-term prospects incremental to information contained in accounting data. For example, Aaker and Jacobson (2001) find that brand attitudes affect future accounting performance. If the firm has diminished current-term accounting results, why should the financial markets expect better performance in the future? The answer to this question may lie in the information contained in marketing metrics that show the building of marketing assets, for example, increased customer satisfaction (Hauser et al. 1994, Mittal and Kamakura 2001) and

improved customer retention (Gupta et al. 2004). If a firm has enhanced accounting performance, marketing metrics can communicate that these results are not coming at the expense of marketing assets, and accounting performance measures will be deemed of "higher quality." As such, credible and meaningful marketing metrics, in conjunction with accounting measures, can improve assessment of a firm's future-term prospects.

Finally, it is the job of marketing researchers 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. 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 investigating which metrics provide information about future performance that is not already contained in current-term accounting measures. The focus should be on dynamic relationships between a metric and future-term performance: the measures that inter-temporally lead performance outcomes are most valuable. This type of research calls for an increased need of time series data analysis or of panel data (pooled cross-sectional time series data) analysis focused on modeling dynamic relationships (Pauwels et al. 2004). The preferred research would be in the spirit of "Granger causation" tests (Granger 1969). That is, after taking into account the dynamic properties to the accounting performance measure, does the marketing metric lead performance?

Marketing researchers should also focus on developing better screening metrics to help identify myopic strategies. The discounting, promotions, and spending cuts, at times, 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 quite difficult. Developing better proxies and deterministic models of managerial incentives to engage in myopia (e.g., Bushee 1998) is an important direction for future research. And last, but not least, research focused on developing better understanding of the mechanisms driving the future-term stock market and operating 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 activities but rather an integral and valuable organizational function.

Conclusion

In order to free managers from the trap of myopic behavior, signals additional to those provided by accounting measures are required. Marketing metrics can help reduce incentives for myopia and differentiate those firms engaging in myopic behaviors from those who 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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Footnotes:

[1] An alternative hypothesis is that the market over-values marketing and R&D and overestimates their impact on firm future performance. If this were the case, the market would negatively over-react to marketing and R&D cuts and the systematic post-event valuation adjustment for the firm cutting its marketing and R&D will be positive. Our tests allow for this possibility.

[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 the present study.

[3] We choose this parsimonious specification as it allows us to highlight the robustness of the phenomenon and relative ease of its identification, and it allows us to preserve a greater number of observations for analyses. Results based on expanded forecasting models are very similar to those we report and are available upon request.

[4] To the extent that our forecast models estimation is inaccurate, we face potential misclassification of cases into the incorrect grouping. Such misclassification can be viewed as measurement error in the independent variable and would bias our tests of Hypotheses toward finding no differences between potentially myopic and non-myopic groupings. That is, if the classification error is sufficiently large, we would not find significant differences and would reject the hypotheses in favor of the null. As our results suggest, this is not the case, and our forecast models perform very well. To assess the sensitivity of our findings to sampling variation, we undertook a simulation study and found results very similar to those we report.

[5] The results of our analyses are not sensitive to alternative abnormal accrual measures, e.g., measures based on the Jones or modified-Jones models (Dechow at al. 1995). We undertook both in-sample (using only our sample firms) and out-of-sample (using all firms in Compustat excluding our sample firms) estimation of model [2].

[6] This metric has some disadvantages in that in addition to marketing-related spending, it also includes some other non-marketing expense categories. The advantage of this metric relative to using advertising spending is that it reflects all marketing-related spending and allows us to preserve a greater number of firms in the sample.

[7] We also undertook tests using Barber and Lyon's (1997) approach with compounded stock returns (i.e., not taking the logs). Consistent with the greater influence of large values, the implied underperformance of myopic firms is greatly exaggerated. For example, the estimated total four-year average underperformance relative to performance-equivalent benchmarks is -58.9%. To diminish the influence of the extreme values on our estimates we chose to rely on and present the results based on differential in continuously compounded stock returns.

[8] We have examined the sensitivity of our results to our definition of firms engaged in accruals-based earnings inflation. Specifically, we tested three alternative designations: (i) all firms in the top quartile of discretionary accruals, i.e., no restriction on positive earnings surprise, (ii) firms with positive discretionary accruals (i.e., not just the top quartile), and (iii) firms with positive discretionary accruals and positive earnings surprise. Under these alternative classifications, we find lower relative under-performance of firms designated as inflating earnings through accounting accruals compared to firms that do not. Correspondingly, we also find much stronger results for Hypothesis 4 tests: under these alternative definitions the relative underperformance of myopic firms is much greater compared to firms engaged in earnings inflation through accruals manipulation than that we report.

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

We form three portfolios at the end of year t based on the signs of ROA, R&D, and Mktg surprises and track their returns 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) non-myopic 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 ($ROA_{it} - \widehat{ROA}_{it|it-1} < 0$). Average S&P500 return provides a benchmark.

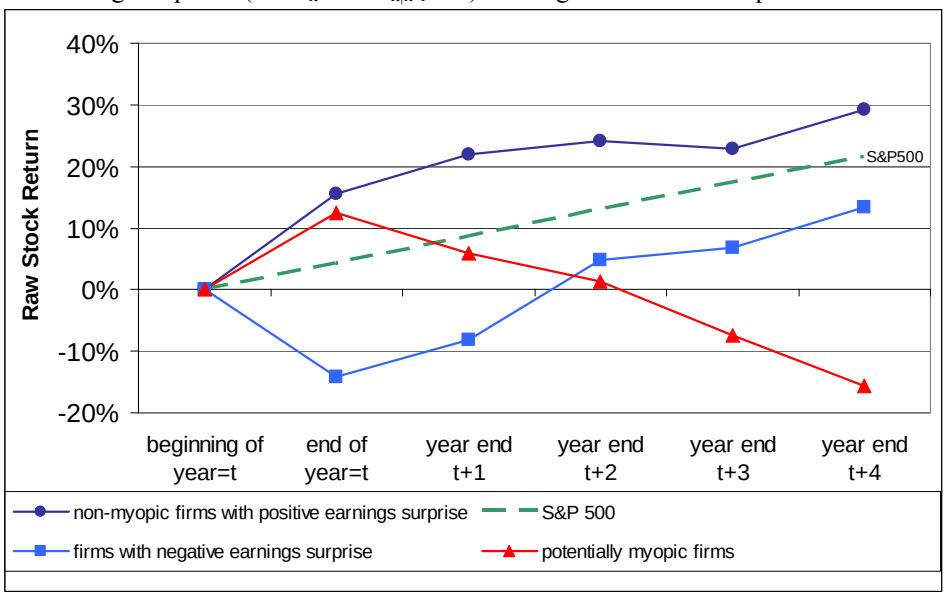

Figure 2. Buy-and-Hold Abnormal Stock Returns for Portfolios of Potentially Myopic Firms, Firms with Positive Earnings Surprises That Did Not Cut Their Marketing and R&D Spending, and Firms with Negative Earnings Surprises

We form three portfolios at the end of year t based on the signs of ROA, R&D, and Mktg surprise conditions and track their buy-and-hold abnormal returns over the following four years. The figure depicts the average pattern of buy-and-hold abnormal stock returns 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) non-myopic 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 ($ROA_{it} - \widehat{ROA}_{it|it-1} < 0$). Zero abnormal returns line provides the benchmark of expected performance.

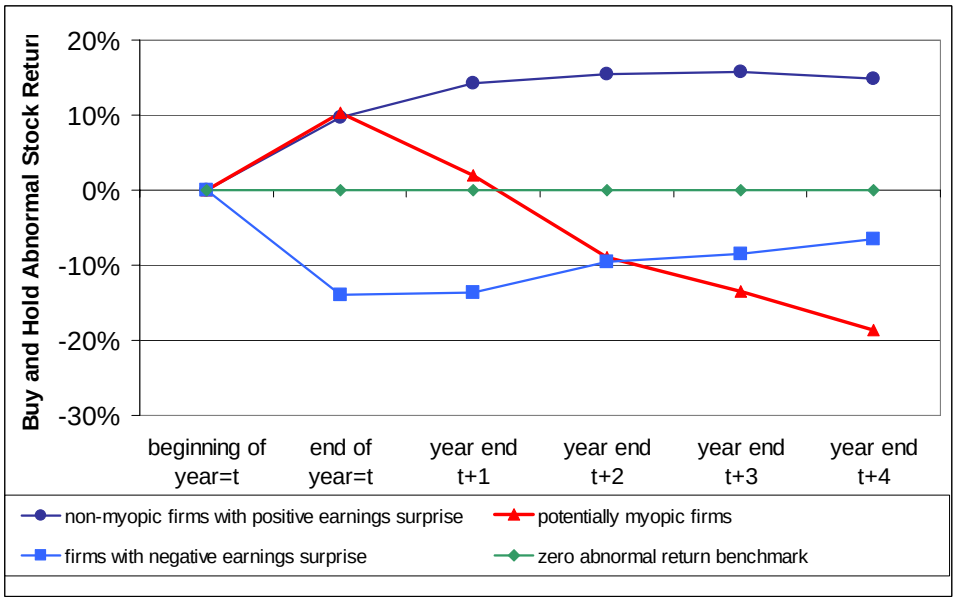

Figure 3. Raw Stock Returns for Firms with Positive Earnings Surprises across Four Quartile Portfolios of Abnormal Accruals

We form four quartile portfolios at the end of year t based on the magnitude of abnormal accruals and track their returns over the following four years. Quartile 1 portfolio contains firms with the greatest negative and quartile 4 with the largest positive abnormal accruals. The figure depicts the average pattern of raw stock returns and the pattern of average S&P500 returns for the study period.

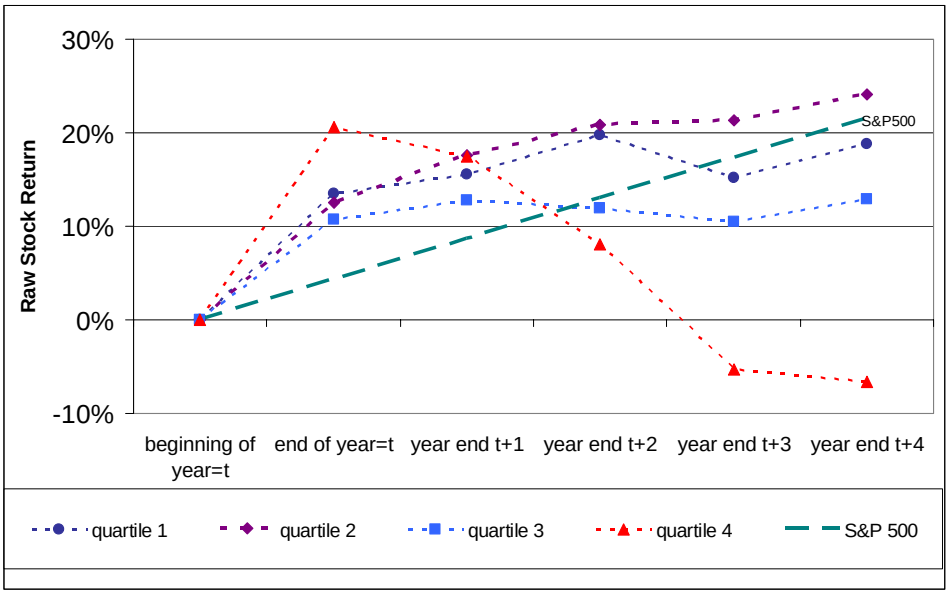

Figure 4. Buy-and-Hold Abnormal Stock Returns for Firms with Positive Earnings Surprises across Four Quartile Portfolios of Abnormal Accruals

We form four quartile portfolios at the end of year t based on the size of abnormal accruals and track their buy-and-hold abnormal returns over the following four years. Buy-and-hold abnormal returns control for firm-specific risk characteristics as described in Table 1. Zero abnormal returns line provides the benchmark of expected performance.

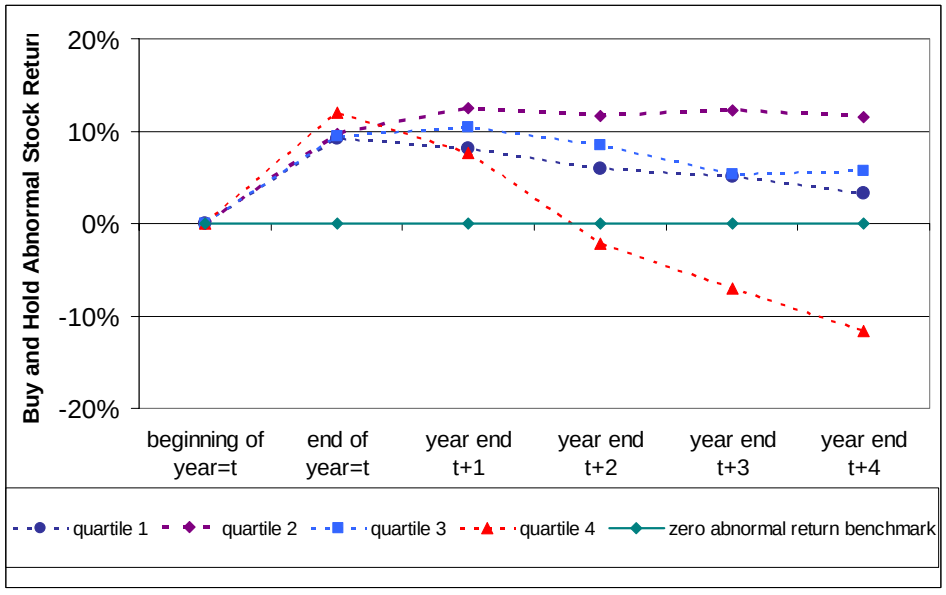

Table 1: Descriptive Statistics

The sample includes all available 1986–2005 accounting data from the COMPUSTAT database and stock returns data from the University of Chicago's Center for Research in Security Prices (CRSP) monthly return database. To reduce the influence of outliers we set 2.5% of extreme values to missing for each accounting variable in the analysis. We loose the first three observations for each firm due to taking first differences and using lags to estimate the forecasting models. The tables below summarize the final estimation data sample used in our analyses. Variable definitions are presented in the legend at the bottom of the table.

Table 1 Panel A: Descriptive Statistics

	N	Mean	Std error of the Mean	5th Pct	Median	95th Pct
ROA	47,902	0.042241	0.00088	-0.37667	0.085188	0.243125
Mktg	17,631	0.279249	0.00165	0.042043	0.220256	0.732284
R&D	22,889	0.092992	0.00097	0.0	0.03245	0.412337
Total Accruals	28,887	0.006373	0.00307	-0.15046	0.000616	0.178238
Raw Stock Return	38,627	0.039429	0.00293	-0.95826	0.089622	0.840677
Compounded Abnormal Stock Return (CAR)	38,623	-0.05158	0.00258	-0.90043	-0.02048	0.688118
Buy-and-Hold Abnormal Stock Return (BHAR)	36,707	-2.72E-16	0.002748	-0.85847	0.018237	0.781023

Table 1 Panel B: Correlation Matrix

	ROA	Mktg	R&D	TotalAccr	RawStkR	CAR	BHAR
ROA	1						
	<.0001						
	47,902						
Mktg	-0.31667	1					
	<.0001	<.0001					
	17,025	17,631					
R&D	-0.61935	0.20691	1				
	<.0001	<.0001	<.0001				
	20,303	17,631	22,889				
Total Accruals	0.03214	0.02073	-0.02344	1			
	<.0001	0.0143	0.0029				
	28,887	13,978	16,096	28,887			
Raw Stock Return	0.24252	-0.07843	-0.13875	0.02074	1		
	<.0001	<.0001	<.0001	0.0006	<.0001		
	34,114	13,525	17,184	27,143	38,627		
CAR	0.20197	-0.06446	-0.09924	0.02386	0.83906	1	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
	34,110	13,522	17,181	27,139	38,623	38,623	
BHAR	0.24276	-0.05162	-0.09164	0.02699	0.90872	0.88734	1
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	33,858	13,429	17,032	27,532	35,805	35,802	36,707

Variable Definitions for firm i, year t:

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

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

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

$$\text{Total Accruals} = \frac{\Delta Data4_t - \Delta Data1_t - (\Delta Data5_t - \Delta Data34_t) - \Delta Data14_t}{Data6_{t-1}}$$

Raw Stock Return (Ret) for firm i in year t:

$\text{Ret}_{it} = \log \prod_{m=1}^{12} (1 + \text{ret}_{im})$, where

ret_{im} is the holding period return for firm i in month m coming from the CRSP monthly returns file;

Compounded Abnormal Stock Return (CAR) for firm i in year t:

$\text{CAR}_{it} = \log \prod_{m=1}^{12} (1 + [\text{ret}_{im} - \text{expRet}_{im}])$, 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, SMB_m is the return on a value-weighted portfolio of small stocks minus the return on a value-weighted portfolio of big stocks, HML_m is the return on a value-weighted portfolio of high book-to-market stocks less 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 big size) high prior return portfolios minus the average return on the two (small and big size) low prior return portfolios computed in month (m)), which come from Kenneth French's data library posted on his website. $\hat{\beta}_i$, $\hat{s}_i$, $\hat{h}_i$, and $\hat{m}_i$ come from estimating the Fama and French (1992, 1993) three-factor model augmented with momentum (Jegadeesh and Titman 1993) 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 (BHAR) for firm i in year t:

$\text{BHAR}_{it} = \text{Ret}_{it} - \text{expRet}_{it} = \varepsilon_{it}$, where ε_{it} comes from estimating the following model:

$$\text{Ret}_{it} = \sum_{t=1}^{T} \alpha_{1t} * Year_t + \sum_{t=1}^{T} \alpha_{2t} * \log(MV_{it-1}) * Year_t + \sum_{t=1}^{T} \alpha_{3t} * \log(BMV_{it-1}) * Year_t + \varepsilon_{it}, \text{ where}$$

$Year_t$ is a dummy variable equal to 1 if year is equal t and 0 otherwise, $\log(MV_{it-1})$ and $\log(MBV_{it-1})$ 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 we allow to vary by time.

Table 2. Fixed Effects Autoregressive Panel Data Forecast Models

ROA Equation:

$$ROA_{it} = \alpha_{roa,i} + \phi_{roa} * ROA_{it-1} + \sum_{t=1}^{T} \delta_t * \text{Year}(t) + \sum \lambda_{sic} * Industry(SIC) + \varepsilon_{roa,it}$$

Marketing Equation:

$$Mktg_{it} = \alpha_{mktg,i} + \phi_{mktg} * Mktg_{it-1} + \sum_{t=1}^{T} \delta_t * \text{Year}(t) + \sum \lambda_{sic} * Industry(SIC) + \varepsilon_{mktg,it}$$

R&D Equation:

$$R\&D_{it} = \alpha_{rd,i} + \phi_{rd} * R\&D_{it-1} + \sum_{t=1}^{T} \delta_t * \text{Year}(t) + \sum \lambda_{sic} * Industry(SIC) + \varepsilon_{rd,it}$$

The number of observations differs across the series as not all firms reported all measures across all time periods. The number of observations differs from those reported in Table 1 due to taking lags. Standard errors are in parentheses, t-statistics in brackets. Significance levels: ** p<.01. $^{\pm}$ denotes the use of instrumental variable estimation.

	ROA Equation	Mktg Equation	R&D Equation
ϕ	0.35692** $^{\pm}$ (0.01300) [27.46]	0.40023** $^{\pm}$ (0.02591) [15.45]	0.27232** $^{\pm}$ (0.01775) [15.34]
Number of Observations	40,799	13,900	19,157
F-statistic	753.91	238.60	235.46
MSE	0.01103	0.00929	0.00628

Table 3. Immediate Market Response: Differential Market Reaction to Potentially Myopic and Non-Myopic Firms

Table 3 Panel A: Assessing Differential Market Response Using Compounded and Buy-and-Hold Abnormal Returns

$abnStkR_{it}=\chi_0 + \chi_1 * Myopic_{it} + \eta_{it}$, where the estimation data sample includes all firms reporting increased profitability in a given year. As such, we are comparing the potentially myopic firms to 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.

	Estimate	Std	T-stat	N	F-stat
Compounded Abnormal Stock Return (CAR)	0.02349	0.01355	1.73	6,656	3.01
Buy-Hold Abnormal Stock Return (BHAR)	0.00679	0.01278	0.53	6,785	0.28

Table 3 Panel B: Assessing Differential Market Response Using Barber and Lyon (1997) Matched Firm Abnormal Returns

This table presents non-parametric tests of the matched-firm differential abnormal returns realized by potentially myopic firms. The benchmark matching firm is chosen for each potentially myopic firm based on its size and book-to-market characteristics following the approach Barber and Lyon (1997) suggest. 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:

$$\text{Abnormal Matched Firm Differential Ret}_{it} = \log \prod_{m=1}^{12} (1 + \text{ret}_{im}) - \log \prod_{m=1}^{12} (1 + \text{ret}_{benchmark,m}),$$ 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. The returns data come from the CRSP monthly returns file.

N	Mean	T-stat	Sig	Median	M-stat	Sig
2,561	-0.0189727	-1.33	.1842	-0.0144069	-22.5	.3846

Table 4. Delayed Market Response: Are the Firms with Decreased Support for Marketing and R&D at the Time of Increased Earnings Properly Valued?

Table 4 Panel A: Assessing Differential Market Response Using Compounded and Buy-and-Hold Abnormal Returns

$abnStkR_{it+k}=\lambda_0 + \lambda_1 * Myopic_{it} + \eta_{it+k}$, where k= 1, 2, 3, and 4; the variables are as defined in Tables 1. Full set of estimation results (including intercept values) is available from the authors upon request. ** denotes significance at the 1% level; * denotes significance at the 5% level.

Benchmarking relative to portfolio of all other firms in the sample					
CAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
k=1	-0.11107**	0.01259	-8.82	11,414	77.87
k=2	-0.23840**	0.01835	-12.99	9,971	168.8
k=3	-0.28273**	0.02300	-12.30	8,684	151.17
k=4	-0.33014**	0.02863	-11.53	7,478	133
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
k=1	-0.10465**	0.01305	-8.02	11,197	64.27
k=2	-0.24146**	0.01845	-13.09	9,758	171.35
k=3	-0.28681**	0.02221	-12.91	8,451	166.8
k=4	-0.34275**	0.02668	-12.85	7,256	165
Benchmarking relative to portfolio of all other firms with positive earnings surprise in the sample					
CAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
k=1	-0.11575**	0.01432	-8.08	6,145	65.36
k=2	-0.21471**	0.02123	-10.11	5,383	102.27
k=3	-0.24813**	0.02640	-9.40	4,713	88.32
k=4	-0.29305**	0.03197	-9.17	4,113	84.02
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
k=1	-0.13093**	0.01489	-8.79	6,058	77.28
k=2	-0.24234**	0.02164	-11.20	5,293	125.35
k=3	-0.28239**	0.02586	-10.92	4,609	119.21
k=4	-0.33439**	0.03035	-11.02	4,007	121.36
Benchmarking relative to portfolio of all firms with negative earnings surprise in the sample					
CAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
k=1	-0.10776**	0.01369	-7.87	7,680	61.95
k=2	-0.25505**	0.01996	-12.78	6,744	163.21
k=3	-0.30715**	0.02508	-12.25	5,882	149.97
k=4	-0.35816**	0.0314	-11.41	4,936	130.08
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
k=1	-0.08592**	0.01426	-6.03	7,532	36.30
k=2	-0.24084**	0.02012	-11.97	6,593	143.23
k=3	-0.28996**	0.02437	-11.90	5,718	141.57
k=4	-0.34912**	0.02937	-11.89	4,782	141.35

Table 4 Panel B: Assessing Differential Market Response Using Barber and Lyon (1997) Matched Firm Approach

This table presents non-parametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. The benchmark matching firm is chosen as described previously in Table 3. In addition, we use three different pools for choosing a benchmark firm and report the results separately in the table below. 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 multi-year 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:

$$\text{AbnMatchedFirm Ret}_{\text{it+k}} = \log\prod_{m=1}^{k*12}(1+\text{ret}_{im}) - \log\prod_{m=1}^{k*12}(1+\text{ret}_{benchmark,m}), \text{ where}$$

k=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. The returns data come from the CRSP monthly returns file. ** denotes significance at the 1% level; * denotes significance at the 5% level.

Matching benchmark firms are drawn from all firms not classified as potentially myopic							
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
k=1	2,418	-0.09765**	-5.84	>.0001	-0.08317**	-137.5	>.0001
k=2	2,114	-0.16010**	-6.58	>.0001	-0.10399**	-111.5	>.0001
k=3	1,832	-0.13128**	-4.23	>.0001	-0.09130**	-63.5	.0032
k=4	1,475	-0.16886**	-4.47	>.0001	-0.15438**	-80.5	>.0001
Matching benchmark firms are required to have positive earnings surprise							
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
k=1	2,304	-0.08344**	-4.99	<.0001	-0.05225**	-82.5	.0006
k=2	1,999	-0.13541**	-5.47	<.0001	-0.08477**	-81.5	.0003
k=3	1,723	-0.10147**	-3.24	.0012	-0.05038	-26.5	.2103
k=4	1,373	-0.13497**	-3.51	.0005	-0.1186*	-47.5	.0112
Matching benchmark firms are required to have negative earnings surprise							
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
k=1	2,272	-0.08334**	-4.93	<.0001	-0.08414**	-122.5	<.0001
k=2	1,955	-0.18982**	-7.37	<.0001	-0.13263**	-132.0	<.0001
k=3	1,681	-0.15002**	-4.69	<.0001	-0.12240**	-65.5	.0015
k=4	1,323	-0.22814**	-5.44	<.0001	-0.18625**	-79.5	<.0001

Table 5. Total Market Response: Total Financial Consequences of Myopic Management

Table 5 Panel A. Assessing the Total Financial Returns Using Compounded and Buy-and-Hold Abnormal Returns

$abnStkR_{it+j}=\gamma_0 + \gamma_1 * Myopic_{it} + \eta_{it+j}$, where j= 0, 1, 2, 3, and 4, the variables are as defined in Tables 1 and 3. Full set of estimation results (including intercept values) is available from the authors upon request. ** denotes significance at the 1% level; * denotes significance at the 5% level.

Benchmarking relative to portfolio of all other firms in the sample					
CAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	0.16669**	0.01225	13.61	12,462	185.29
j=1	0.05937**	0.01794	3.31	11,063	10.95
j=2	-0.05890**	0.02252	-2.62	9,714	6.84
j=3	-0.11252**	0.02706	-4.16	8,454	17.29
j=4	-0.16143**	0.03251	-4.97	7,270	24.66
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	0.14432**	0.01162	12.43	12,611	154.38
j=1	0.03895*	0.01826	2.13	11,197	4.55
j=2	-0.09695**	0.02296	-4.22	9,758	17.84
j=3	-0.1507**	0.02646	-5.69	8,451	32.43
j=4	-0.21329**	0.0312	-6.84	7,256	46.73
Benchmarking relative to portfolio of all other firms with positive earnings surprise in the sample					
CAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	0.02349	0.01355	1.73	6,656	3.01
j=1	-0.0898**	0.02020	-4.44	5,932	49.75
j=2	-0.1837**	0.02611	-7.03	5,222	49.46
j=3	-0.2279**	0.03099	-7.35	4,565	54.07
j=4	-0.2669**	0.03618	-7.38	3,978	54.43
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	0.00679	0.01278	0.53	6,785	0.28
j=1	-0.12399**	0.02038	-6.08	6,058	37
j=2	-0.24367**	0.02666	-9.14	5,293	83.53
j=3	-0.29169**	0.03036	-9.61	4,609	92.28
j=4	-0.33519**	0.0351	-9.55	4,007	91.2
Benchmarking relative to portfolio of all firms with negative earnings surprise in the sample					
CAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	0.26860**	0.01307	20.55	8,330	422.30
j=1	0.16515**	0.01924	8.58	7,424	73.68
j=2	0.02892	0.02408	1.20	6,552	1.44
j=3	-0.03117	0.02910	-1.07	5,711	1.15
j=4	-0.08164*	0.03508	-2.33	4,781	5.42
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	0.24212**	0.01242	19.5	8,468	380.33
j=1	0.15515**	0.01967	7.89	7,532	62.21
j=2	0.00705	0.02478	0.28	6,593	0.08
j=3	-0.05040	0.02878	-1.75	5,718	3.07
j=4	-0.12046**	0.03398	-3.55	4,782	12.57

Table 5 Panel B: Assessing the Total Financial Returns Using Barber and Lyon (1997) Matched Firm Differential Returns

This table presents non-parametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. The benchmark matching firm is chosen as described previously in Table 3. In addition, we use three different pools for choosing a benchmark firm and report the results separately in the table below. 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 multi-year 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:

$$\text{AbnMatchedFirm Ret}_{it+j} = \log \prod_{m=1}^{j*12} (1 + \text{ret}_{im}) - \log \prod_{m=1}^{j*12} (1 + \text{ret}_{benchmark,m}), \text{ where}$$

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. The returns data come from the CRSP monthly returns file. ** denotes significance at the 1% level; * denotes significance at the 5% level.

Matching benchmark firms are drawn from all firms not classified as potentially myopic							
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
j=0	2,677	0.06733**	4.93	>.0001	0.051674**	96.5	.0002
j=1	2,406	-0.03503	-1.55	.1210	-0.04916*	-54.0	.0291
j=2	2,106	-0.10512**	-3.56	.0004	-0.05229*	-50.0	.0310
j=3	1,826	-0.09128*	-2.57	.0101	-0.06687	-40.0	.0645
j=4	1,470	-0.13277**	-3.13	.0018	-0.13773**	-70.0	.0003
Matching benchmark firms are required to have positive earnings surprise							
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
j=0	2,561	-0.0189727	-1.33	.1842	-0.01441	-22.5	.3846
j=1	2,294	-0.11446**	-5.02	<.0001	-0.12005**	-141.0	>.0001
j=2	1,992	-0.18103**	-5.91	<.0001	-0.12623**	-108.0	>.0001
j=3	1,718	-0.15867**	-4.34	<.0001	-0.1367**	-81.0	.0001
j=4	1,370	-0.17749**	-4.03	<.0001	-0.17174**	-72.0	.0001
Matching benchmark firms are required to have negative earnings surprise							
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
j=0	2,532	0.13337**	9.12	<.0001	0.08651**	188.5	<.0001
j=1	2,261	0.049587*	2.12	.0345	0.00824	8.0	.7524
j=2	1,947	-0.06798*	-2.18	.0293	-0.04911	-36.0	.1075
j=3	1,675	-0.05012	-1.36	.1734	-0.04317	-27.5	.1870
j=4	1,318	-0.14407**	-3.15	.0016	-0.13668**	-61.0	.0009

Table 6. Total Financial Consequences of Myopic Management versus Accounting-Based Earnings Management through Discretionary Accruals

Table 6 Panel A. Assessing the Total Differential Financial Returns to Myopic Management versus Accruals-Based Earnings Management Using Compounded and Buy-and-Hold Abnormal Returns

$abnStkR_{it+j}=\gamma_0 + \gamma_1$*Myopic_No_Accruals_Inflation$_{it} + \eta_{it+j}$, where j= 0, 1, 2, 3, and 4, Myopic_No_Accruals_Inflation$_{it}$ is equal to one if firms engaged in myopic management and did not engage in earnings management, and 0 otherwise and the variables are as defined in Tables 1 and 3. Only the firms that engaged exclusively in myopic management and exclusively in accrual-based earnings management are included in the analysis and the results below are estimates of the differential long-term stock returns. Full set of estimation results is available from the authors upon request. ** denotes significance at the 1% level; * denotes significance at the 5% level.

CAR models	Estimate	Std	T-stat	N	F-stat
j=0	-0.0458*	0.02175	-2.11	2,756	4.44
j=1	-0.14761**	0.03287	-4.49	2,429	20.17
j=2	-0.18188**	0.04387	-4.15	2,139	17.19
j=3	-0.26208**	0.05293	-4.95	1,860	24.52
j=4	-0.26383**	0.06137	-4.30	1,548	18.48
BHAR models	**Estimate**	**Std**	**T-stat**	**N**	**F-stat**
j=0	-0.01510	0.02013	-0.75	2,832	0.52
j=1	-0.10426**	0.03336	-3.13	2,497	9.77
j=2	-0.13484**	0.04531	-2.98	2,176	8.86
j=3	-0.16484**	0.0532	-3.10	1,891	9.6
j=4	-0.17982**	0.06014	-2.99	1,560	8.94

Table 6 Panel B: Assessing the Total Differential Financial Returns to Myopic Management versus Accruals-Based Earnings Management Using Barber and Lyon (1997) Matched Firm Differential Returns

This table presents non-parametric tests of the matched-firm differential abnormal returns (Barber and Lyon 1997) realized by potentially myopic firms. The benchmark matching firm is chosen as described previously in Table 3 and in addition, it is required to have engaged in accruals-based earnings management. The abnormal multi-year 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 engaged in accruals-based earnings management:

$$\text{AbnMatchedFirm Ret}_{it+j} = \log \prod_{m=1}^{j*12}(1+\text{ret}_{im}) - \log \prod_{m=1}^{j*12}(1+\text{ret}_{benchmark,m}), \text{ where}$$

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. The returns data come from the CRSP monthly returns file. ** denotes significance at the 1% level; * denotes significance at the 5% level.

	Matching benchmark firms are drawn from all firms with positive earnings surprises and classified as aggressively inflating discretionary accruals (i.e., falling into the top quartile of discretionary accruals)						
	N	**Mean**	**T-stat**	**Sig**	**Median**	**M-stat**	**Sig**
j=0	711	-0.12509	-4.43	<.0001	-0.09308	-39.5	0.0034
j=1	584	-0.2619	-5.72	<.0001	-0.17972	-52.0	<.0001
j=2	482	-0.2981	-4.65	<.0001	-0.20769	-39.0	0.0004
j=3	368	-0.11578	-1.42	0.1575	-0.02625	-3.0	0.7944
j=4	269	-0.1445	-1.32	0.1885	-0.0201	-3.5	0.7146