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Trading Off Value Creation and Value Appropriation: The Financial Implications of Shifts in Strategic Emphasis

Natalie Mizik and Robert Jacobson

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M A R K E T I N G S C I E N C E I N S T I T U T E

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W O R K I N G P A P E R S E R I E S

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Trading Off Value Creation and Value Appropriation: The Financial Implications of Shifts in Strategic Emphasis

Natalie Mizik and Robert Jacobson

Firms allocate their limited resources between the two fundamental processes of creating value (i.e., innovating, producing, and delivering products to the market) and appropriating value (i.e., extracting profits in the marketplace). While both value creation and value appropriation are required for sustained competitive advantage, a firm has significant latitude in the extent to which it emphasizes one capability over the other.

A firm that competes on the basis of value creation constantly moves ahead and innovates as competition erodes the profits from its previous initiatives. A firm that competes on the basis of value appropriation defends its position in the market against competition by erecting barriers to imitation through, for example, brand-based advertising. Most companies choose a strategy that balances sufficient support for value creation efforts with adequate investments in value appropriation capabilities. Yet there are differences in strategic emphasis among firms and within a firm over time. The question is, What implications do shifts in emphasis between value creation and value appropriation have for firm financial performance?

The Study

To address this question, authors Mizik and Jacobson develop a measure of a firm's strategic emphasis on value appropriation versus value creation and assess the effect that changes in this measure have on stock return. Further, they examine the extent to which this effect is moderated by firm financial situation, past strategic choices made by the firm, and the technological environment.

Results and Managerial Implications

In general, they find, increases in emphasis toward value appropriation capability and away from value creation capability are associated with increases in stock return. Even in the high technology markets, where innovation and R&D are central to firm success, investors view favorably a shift toward value appropriation.

The positive response to enhancing value appropriation is particularly strong when a firm has better-than-expected earnings. In other words, when a firm is doing well the market wants it to increase emphasis on value appropriation. When a positive

shock to earnings occurs, this provides a signal to existing and potential competitors as to the direction resources should flow. The inflow of resources will tend to bring returns back toward the competitive rate of return. If management wants to insulate itself from this process, it must place greater emphasis on value appropriation and restricting competitive imitation.

On the other hand, when a firm is not doing well financially, the financial markets respond positively to increasing emphasis on value creation capabilities. In fact, under certain conditions, the financial markets view increases in value appropriation capability negatively. For example, for firms operating in stable technology markets who are already highly emphasizing their value appropriation capability, the markets realize that there are limits to the firm's ability to extract surplus. In this case, efforts to expand surplus via enhanced emphasis on value creation are rewarded.

These results serve to highlight the importance stock market participants place on value appropriation. Firms that fail to pay sufficient attention to value appropriation cannot be expected to achieve sustained competitive advantage and reap the rewards of their value creation capabilities.

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Introduction

Marketing strategy is concerned with creating sustained competitive advantage, which in turn leads to superior financial performance. Two processes, which combine and interact, are fundamental to achieving this outcome. One process involves the creation of customer value; the other focuses on appropriating value in the marketplace. Value creation is, of course, a cornerstone of marketing. The marketing concept identifies the customer as the primary focus and the force that defines the scope and the purpose of a business enterprise. It postulates that in order for an organization to achieve an advantage it must create superior value for its customers (Drucker 1954).

Value creation alone, however, is insufficient to achieve financial success. A second necessary process involves a firm's ability to restrict competitive forces (e.g., erect barriers to imitation) so as to be able to appropriate some of the value that it has created in the form of profit. Indeed, firms have little incentive to engage in value creation in the absence of "isolating mechanisms" that prevent the immediate dissipation of profits associated with a value-creating initiative, e.g., an innovation. Firms that do not have the capabilities to restrict competitive forces are unable to appropriate the value they have created. Instead, competitors and customers will claim it (Ghemawat 1991). Factors as varied as reputation and brand effects, customer switching costs, advertising, and network externalities, for example, are isolating mechanisms that are central considerations to marketing managers.

Firms are faced with the strategic task of balancing the two processes in their marketing strategies and determining an adequate amount of support for each. They need to simultaneously develop or acquire value creation capabilities and capabilities that facilitate value appropriation. These two sets of capabilities require substantial resource commitments and management attention. The task of allocating limited organizational resources between value creation and value appropriation capabilities necessitates strategic prioritizations and trade-offs. As such, we define *strategic emphasis* as the relative emphasis a firm places on value appropriation compared to value creation. A fundamental issue facing managers is deciding how a firm chooses to compete (Day 1994). Strategic emphasis is a central aspect of this choice.

Research in marketing has extensively explored how acquiring resources and skills and developing different capabilities affect financial performance (see, for example, the meta-analysis of Capon, Farley, and Hoenig [1990]). While less study has been directed toward assessing the *relative* benefits of emphasizing one capability over another, past research has highlighted various types of strategic and tactical trade-offs that firms make. For example, Porter (1996) considers the trade-offs involved in positioning strategies, Miles and Snow (1978) propose alternative strategic archetypes, Ghemawat (1991) discusses the trade-offs between margins and sales volume, Boulding and Lee (1992) address the issue of marketing mix specialization versus diversity, and Ettlie and Johnson (1994) note the trade-off between focusing

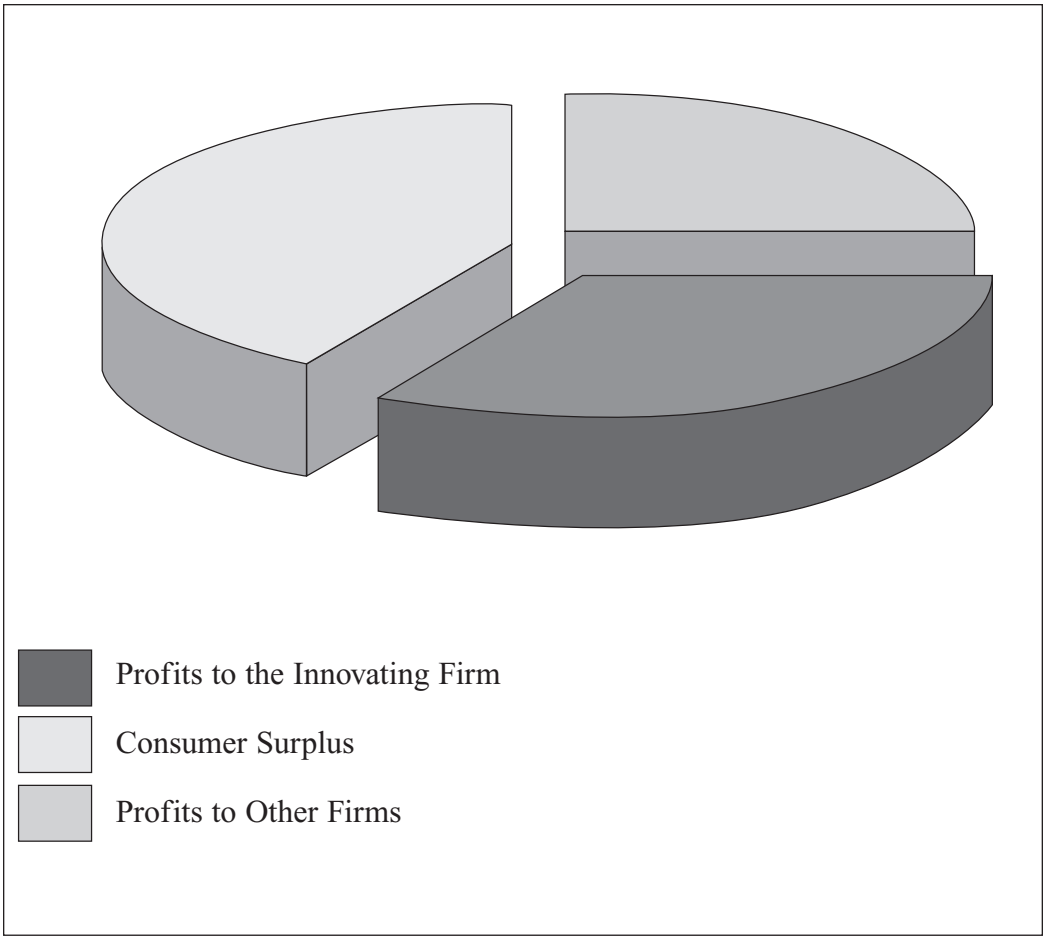
on customers versus processes. While the inherent trade-off between value appropriation and value creation capabilities has been acknowledged (e.g., March 1991), research to date has not explored what effect shifts in emphasis have on financial performance. Our study addresses this issue by examining the effect that shifts in strategic emphasis, i.e., the emphasis on value appropriation versus value creation capabilities, have on stock return.

Our analysis makes use of movements in the [(Advertising and Promotional Expenditures – R&D Expenditures)/Assets] ratio as an indicator of shifts in strategic emphasis. While other factors influence value appropriation and value creation, movements in this measure can be expected to provide information about shifts in strategic emphasis relating to value appropriation versus value creation. That is, increases in the ratio will tend to be associated with increased emphasis on value appropriation and decreases in the ratio will tend to be associated with increased emphasis on value creation. Empirically, we find that the stock market reacts favorably when a firm increases its emphasis on value appropriation relative to value creation. This effect, however, is moderated by firm and industry characteristics, in particular, financial performance, the past level of strategic emphasis of the firm, and the technological environment in which the firm operates. These results do not negate the importance of value creation capabilities, but rather highlight the importance of isolating mechanisms that allow the firm to appropriate some of the value that it has created.

Value Creation and Value Appropriation

Firms engage in innovative activities that lead to creation of "societal value," i.e., the total social surplus arising from the difference between the utility that consumers derive from the product less the costs of producing it. The societal value will end up being captured by three major players in the market (Figure 1): the innovating firm will appropriate some of the societal value it has created in the form of economic profit, customers will claim a portion of it in the form of "consumer surplus," and other firms (competitors and non-competitors) will get a portion of it through profits stemming from imitation and development cost savings (Mansfield, Rapoport, Romeo, Wagner, and Beardsley 1977).

Figure 1. Distribution of Societal Surplus

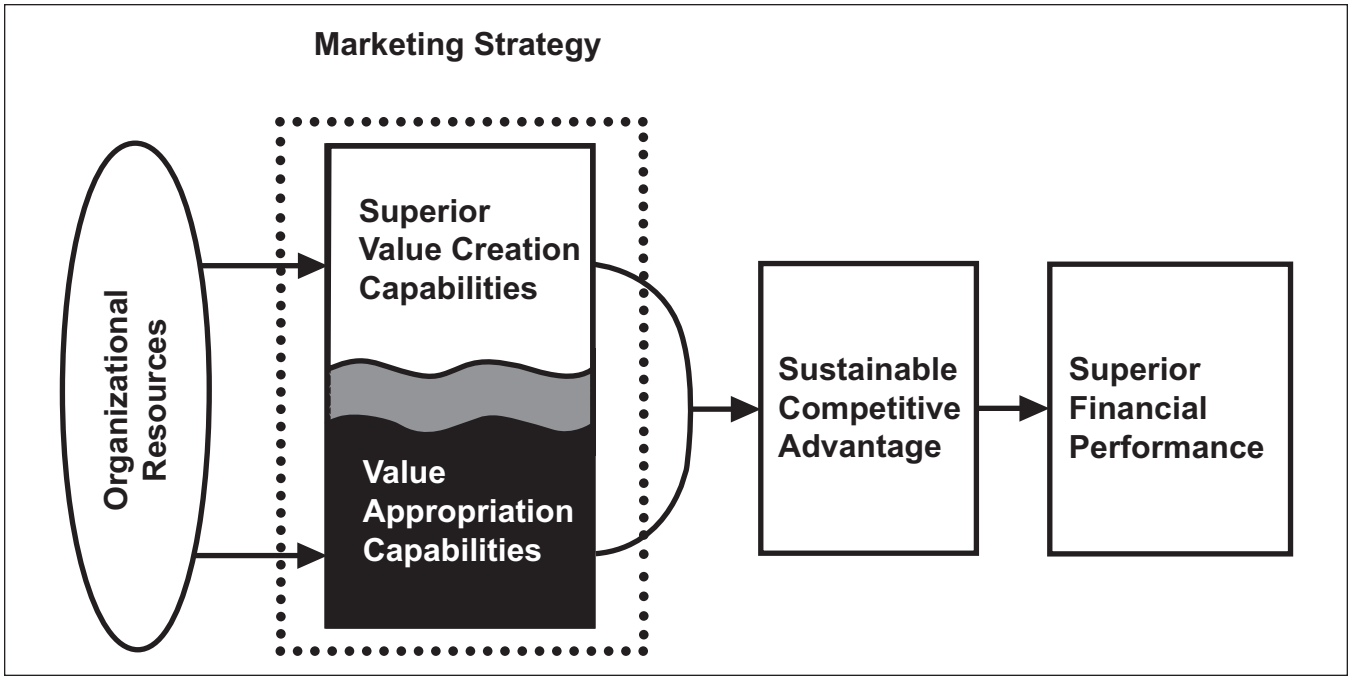


The "pie" represents the total societal value created by a firm. Its size depends on the firm's value creation capabilities. The slice of the pie depicting the profits to the innovating firm depends on its value appropriation capabilities.

Considerable variation exists across innovations as to the proportion of the surplus captured by each of these major players. The polio vaccine is perhaps the most extreme example of an innovation that created tremendous societal value, but where the innovator did not appropriate any surplus. Jonas Salk did not patent the vaccine (stating a desire not to personally profit from it), but rather wished to see the vaccine disseminated as widely as possible. As such, consumers claimed the entire surplus from the innovation. Even firms with a desire for profit oftentimes do not profit from their innovations. For example, the CT scanner was invented at EMI, but the firm's inability to profit from the innovation led to its takeover at about the same time the inventors were receiving the Nobel Prize in medicine. Competitors and consumers claimed the surplus generated by the innovation. But it is the hope of realizing profits that motivates firms to innovate. And, indeed, there are countless examples of firms capturing considerable surplus from their innovations. DuPont with Teflon, G. D. Searle with NutraSweet, Microsoft with Windows, and Pfizer with Viagra, for example, were all able to appropriate a substantial proportion of the societal value created by their innovations.

As such, both value creation and value appropriation capabilities are required for achieving sustained competitive advantage (Figure 2). A firm, however, has significant latitude in deciding the extent to which it emphasizes one set of capabilities over the other. They both shape the firm's competitive advantage (Rumelt 1987; Ghemawat 1991). Value creation influences the potential magnitude of the advantage (i.e., the size of the pie in Figure 1); value appropriation influences the amount of the advantage the firm is able to capture and the length of time the advantage persists (the innovating firm's share of the pie in Figure 1). As firm value depends on both the magnitude and the persistence of advantage, both processes influence financial performance. As such, they both complement and serve as imperfect substitutes for each other.

Figure 2. Marketing Strategy and the Sustainable Competitive Advantage Framework



Strategic Emphasis: Trading Off Value Creation and Value Appropriation Capabilities

Since firms have limited resources, they must trade off between developing customer value creation and value appropriation capabilities. At one end of the spectrum, a firm may choose to compete primarily on the basis of value creation. It constantly moves ahead and innovates as competition erodes the profits from its previous initiatives. Alternatively, a firm may choose to fiercely defend its position in the market against competition by erecting barriers to imitation through, for example, brand-based advertising. In this case, a firm attempts to lengthen the time that its advantage persists.

Most companies strive to choose a strategy that balances sufficient support for value creation efforts with adequate investments in capabilities that facilitate the appropriation of value. Yet there are differences in strategic emphasis among firms. Even within the same industry firms will take different courses of action reflected in differing levels of strategic emphasis.

Consider, for example, ethical drug companies. Value creation (i.e., the development of new drugs), obviously, is central to success for firms in the industry. However, companies vary in the degree to which they emphasize value creation relative to value appropriation. For example, as the patent protection for a drug ends and generic clones enter the market, many pharmaceutical firms cut the support for the drug and focus on new innovation and the remaining patent-protected products. Other drug companies place more emphasis on value appropriation. Johnson & Johnson, for example, uses an umbrella brand for its products and successfully competes with generic drug manufacturers on the basis of superior brand image after the patent protection wears off.

Key Elements of Strategic Emphasis

A wide variety of organizational resources and capabilities have the potential to influence value creation and value appropriation. Yet two elements have been consistently highlighted in past research as central to the value creation and value appropriation processes. Namely, a firm's technology capabilities driven by R&D expenditures have been linked to value creation, while a firm's ability to differentiate its offering through advertising has been linked to value appropriation.

Technology in the Value Creation Process. Schumpeter (1942) discusses value creation activities as "to reform or revolutionize the pattern of production by exploiting an invention, or more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an

industry" (p. 132). As such, value creation utilizes various organizational resources (i.e., technological, financial, physical, human, etc.) and encompasses a wide range of activities. Yet the innovations resulting from research and development have received the most attention as a cornerstone of value creation. Drucker (1993), for example, asserts: "The basic economic resource—'the means of production,' is no longer land, labor, or capital. It is and it will be knowledge. Value is now created by innovation and productivity—both applications of knowledge at work" (p. 8). Thus, firms engage in R&D and build technological capabilities to be able to generate superior products and improvements in the production and distribution processes. A firm uses its technological capability to build a new solution and to answer and meet new needs of the users (Gatignon and Xuereb 1997).

Value is created both through product innovations and through process innovation (Mansfield et al. 1977). An extensive literature in economics, stimulated by the work of Solow (1957), has documented a significant positive effect of R&D on economic growth and productivity. Some of the estimates from initial research in the area serve as useful benchmarks. For example, Denison (1962) reports that about 40 percent of the total increase in per capita national income was attributable to technological change and conjectures that about one-fifth of this amount stemmed from "organized R&D." Mansfield et al. (1977) estimate the median social return to R&D at 56 percent. While estimates vary, Griliches (1995) notes that all recent studies of R&D "continue to report significant social returns from it."

A great deal of interest has been devoted to the gap between the societal value created versus the profits appropriated by the innovating firm. At issue is the fact that the returns realized by the innovating firm may bear little relation to the commercial success of the product or process that they introduce. In theory, patents provide a solution to the problem of imperfect appropriability. In practice, however, patent protection has proven to offer only limited effectiveness. Competitors can "invent around" the patent. Levin, Klevorick, Nelson, and Winter (1987) report that managers view other mechanisms as much more effective than patents in appropriating the returns from innovation, e.g., in only 4 percent of the industries surveyed did managers view patent protection as highly effective. In particular, marketing activities, such as advertising, were viewed as central isolating mechanisms and far more effective than patents in capturing advantages generated by R&D activities.

Advertising in the Value Appropriation Process. Just as there is not a single organizational factor that uniquely defines value creation, neither is there a single capability or activity that determines a firm's ability to appropriate value. A number of different capabilities give rise to isolating mechanisms and influence the length of time a firm is able to earn economic profits. Accumulated assets, as varied as a loyal customer base and network externalities, serve as isolating mechanisms and influence the ability of competitors to dissipate a firm's advantage. One key component of value appropriation capability, of particular concern to marketing managers, relates to the effects of advertising.

Two polar views exist with respect to the role of advertising as an isolating mechanism. One view argues that advertising is "anti-competitive," i.e., erects barriers to imitation by differentiating the firm's offering. The opposing view regards advertising as "pro-competitive" in that it provides information that serves to dissipate competitors' isolating mechanisms. While the debate as to the aggregate "competitive effect" of advertising is likely to be never-ending, both views suggest that a firm's advertising will improve its position either by lengthening its value appropriation opportunities, or by reducing the value appropriation opportunities of its competitors.

Of these two, the first—the ability of advertising to differentiate a firm's offering from that of competitors—has received the most attention (Chamberlin 1933). This ability is one of the central features governing brand strategy. Aaker (1996), for example, notes that a brand can serve as the foundation for meaningful differentiation, especially in contexts where brands are similar with respect to product attributes. A brand can be a formidable barrier to imitation, making it difficult for competitors to copy and dissipate a firm's advantage. As such, brand-based differentiation serves to prolong a firm's advantage and is frequently used as an entry deterrence strategy (Bunch and Smiley 1992).

Indeed, an often-cited *Advertising Age* (1983) study reported that out of 25 leading consumer brands of 1923, 19 still remained leaders 50 years later. While, in fact, the length of time this stability actually lasts is subject to debate (Golder 2000), few question the durability of advantage enjoyed by well-established brands. This durability stems not from the product attributes, which are typically readily imitable, but rather from the differentiation sustained by advertising. Indeed, Golder (2000) highlights advertising as one of the key factors that separate market share leaders who maintain their advantage from those who do not. For example, in contrast to American Chicle who attempted to maximize short-term profits by minimizing marketing expenditures, Wrigley invested in building its brand through a commitment to advertising.[1]

Empirical evidence regarding the effect of advertising on value appropriation capabilities, e.g., the persistence of profits, is sparse but consistent. The empirical results suggest a significant positive effect of advertising on persistence of profits (e.g., Mueller 1990; Kessides 1990). These findings reinforce the view that excess returns erode more slowly for firms advertising heavily. Thus, firm advertising facilitates value appropriation as it extends the duration of competitive advantage.

The preceding discussion is not meant to suggest that no advertising creates value. Rather, our contention is that the association of advertising with value creation is substantially weaker than the association between R&D and value creation. Indeed, in contrast to the substantial empirical literature highlighting the effect of R&D on economic activity, advertising expenditures have not been systematically linked to value creation. Ashley, Granger, and Schmalensee (1980), for example, conclude that advertising does not lead to increased economic activity, but rather follows it. This lack of association is consistent with the premise that a substantial

amount of advertising is not directed at creating value but rather toward other goals, in particular, value appropriation.

Operationalizing Strategic Emphasis

Two primary methods for operationalizing strategic constructs have been used in the strategy research. One, based on primary data collection, is the survey method. The other method, relying on secondary data sources, makes use of firm resource allocation patterns to discern the strategy firms pursue.

Operationalizing Strategy with Surveys. Surveys offer a number of advantages in operationalizing strategic constructs, e.g., flexibility and ability to get to the hidden motives of actions. There are, however, limitations associated with utilizing survey data.

A fundamental limitation of the survey method is the difficulty of obtaining longitudinal survey data. As a result, most survey-based empirical strategy research has been strictly cross-sectional. However, cross-sectional research is unable to identify or adequately control for heterogeneity across firms, which can lead to biased and inconsistent estimates of parameters. Models based on panel data (i.e., pooled time-series cross-sectional data), on the other hand, can make use of econometric methods able to control for unobserved firm heterogeneity. Jacobson (1990), for example, provides results illustrating that the presence of heterogeneity generated by unobserved firm-specific effects renders cross-sectional research designs inappropriate for studying the financial effects of firm strategy.

Another limitation to using surveys for operationalizing strategic emphasis is that responses are likely to reflect self-serving biases of the respondents. These biases may be so great as to completely distort the underlying structure of the relationships. For example, Deshpandé, Farley, and Webster's (1993) study of the relationship between customer orientation and firm performance uncovered a positive correlation between performance measures and customers' evaluations of a firm's customer orientation. However, the firm's assessments of its own customer orientation did not correspond with that of its customers. There was no correlation between the firm's self-evaluation of its customer orientation and its performance. In other words, the measurement error in firms' evaluations of their own customer orientation (with the self-serving bias as a major component of this measurement error) overwhelmed the underlying signal contained in the responses.

This point is highly relevant to operationalizing a firm's strategic emphasis as it is likely for managers to be biased toward claiming that they are more oriented towards value creation. Evidence and testimony in the Department of Justice antitrust case against Microsoft illustrates the disagreement between the competitors' and the company's evaluations of its competitive basis. Microsoft has consistently maintained that its financial success was due to providing superior products to the customers (i.e., superior value creation) and that its competitors were just trying to gain a competitive edge in the market by exploiting the legal system and trying to restrict Microsoft's ability to innovate. Microsoft's competitors and the Justice Department, on the other hand, attributed Microsoft's success in the applications

markets to its exercising monopoly power in the operating systems market (i.e., illegal value appropriation practices).

Finally, surveys may capture the vision, goals, beliefs, and intentions of the management in terms of strategy formulation rather than the actual state of affairs. This could pose a problem in the stock market valuation study for two reasons. One, the market reacts to public information only and not to the internal undisclosed intentions. Two, survey-based measures often do not have high levels of actual management commitment associated with a reported strategy. In contrast, observable behavior-based measures (particularly those based on costly and quasi-irreversible actions) would signal a higher level of management commitment to a strategy and provide a better signal as to the strategic emphasis of the firm.

Operationalizing Strategy through Resource Allocation Patterns. Behavior-based measures, i.e., firm historical investments and resource allocation patterns, are also used to assess firm strategy. Allocation decisions regarding how much of organizational resources to invest into the development of particular capabilities are central to strategy (Dierickx and Cool 1989; Bowman and Hurry 1993; Noda and Bower 1996). Ramaswamy (1997), for example, asserts: "In essence the core aspects of an organization's strategic direction are visible in the resource allocation decisions that top management makes … in navigating the firm through the multitude of environmental constraints to achieve competitive advantage" (pp. 699, 704). In the resource-based perspective, in particular, the management of firm resources is closely linked to both strategy formulation and strategy implementation and measures based on the resource allocation patterns are argued to tap both strategy formulation and execution (Harrison, Hall, and Nargundkar 1993).

As a result, strategy researchers have used resource allocation patterns to depict the underlying strategies of organizations (Ittner, Larcker, and Rajan 1997; Harrison, Hall, and Nagundkar 1993; Harrison, Hitt, Hoskisson, and Ireland 1991; Ramaswamy 1997). This method has received support conceptually (Prahalad and Bettis 1986; Porter 1985, 1996; Ghemawat 1991) and empirically (Hanmer-Lloyd and Kennedy 1981; Wills and Kennedy 1982; Piercy 1987; Noda and Bower 1996) and has been applied to different theoretical strategy frameworks.

An Indicator of Strategic Emphasis

Within organizations, different projects and applications compete for the same scarce resources. In the internal competition for resources, the most imperative and strategically appropriate applications win, and resources end up concentrated in the areas of the greater perceived importance. Thus, strategic emphasis, i.e., the emphasis on value creation versus value appropriation capabilities, can be discerned from the firm expenditures information. Relative increases in investment in value-creating assets would indicate an increasing emphasis on value creation in the firm competitive strategy, while relative increases in investments in value appropriation capabilities would signal an increasing emphasis on value appropriation in the firm competitive strategy.

As advertising will tend to have a greater association with value appropriation efforts and R&D has greater association with value creation efforts, we expect the following indicator for firm i at time period t, which we label $\tilde{SE}_{it}$, to be correlated with its strategic emphasis:

$$\tilde{SE}_{it} = \frac{\text{Advertising and Promotional Expenditures}_{it} - \text{R\&D Expenditures}_{it}}{\text{Assets}_{it}}$$

Positive scores represent companies with relatively stronger commitment to value appropriation-based marketing strategies and negative scores represent companies with relatively stronger commitment to value creation-based strategies. Inter-temporal increases in the $\tilde{SE}$ indicator will tend to depict an increasing emphasis on value appropriation, while decreases in the indicator would depict shifts toward greater emphasis on value creation.

Since other factors affect strategic emphasis besides R&D and advertising, it is possible that the $\tilde{SE}$ measure may be only a weak indicator, i.e., the signal-to-noise ratio will be low. If this were the case, analysis based on $\tilde{SE}$ would be biased towards zero and tests would have low power in uncovering a statistically significant effect. However, given the prominent role played by R&D and advertising in influencing strategic emphasis, we have reason to believe that shifts in $\tilde{SE}$ will indeed be indicative of shifts in strategic emphasis. Analysis of $\tilde{SE}$ characteristics appears to support this view.

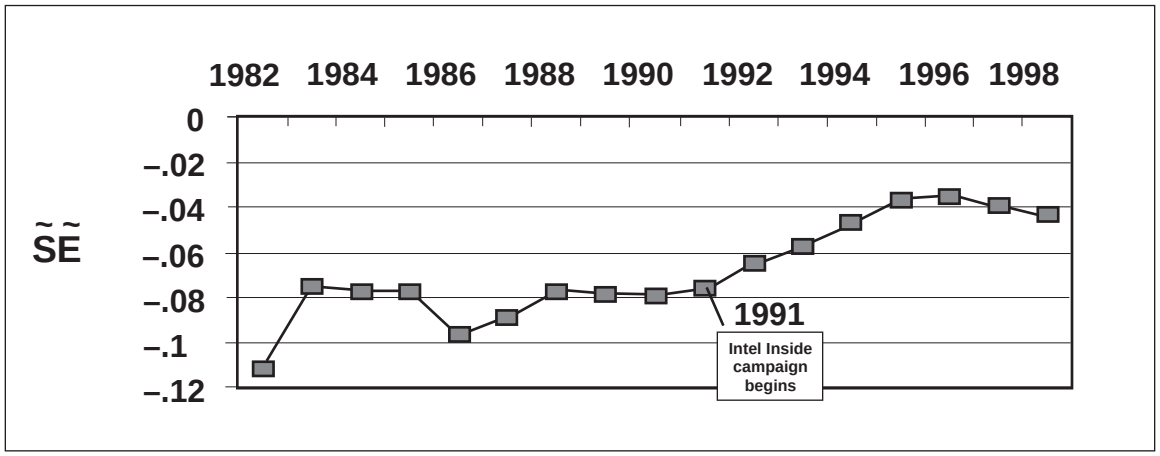
We observe that the $\tilde{SE}$ indicator exhibits significant variation across different industries, among firms in the same industry, and over time for the same firm. For example, for the period 1980–1999 the mean $\tilde{SE}$ for publicly traded firms in food industries, i.e., SIC 2000–2099, is .091. This indicates greater relative reliance on value appropriation capabilities. For instruments, i.e., SIC 3800–3841, the $\tilde{SE}$ mean of –.099 indicates greater relative emphasis on value creation capabilities. The difference in the indicator is consistent with the different importance technology has in these industries. In high technology industries, such as instruments, the success of a company depends crucially on its ability to constantly innovate and stay ahead of the competition in developing new technologies or introducing new products. For firms in low technology industries, such as food, the importance of research and technology is not as pertinent.

However, even within a given industry, firms will choose different ways of competing and this will manifest itself in different levels of strategic emphasis. For example, considerable variation in the $\tilde{SE}$ measure exists for firms in the pharmaceutical industry (SIC 2834). The historical mean of $\tilde{SE}$ for Johnson & Johnson (–.026) lies close to the industry mean of –.036. This can be compared to .083 for Bristol-Myers Squibb. At the other end of the spectrum is Genentech with a mean $\tilde{SE}$ of –.136. These differences reflect the different emphases these firms place on value creation compared to value appropriation in their strategies.

Strategic emphasis will also change for a given firm over time to reflect a change in strategy. Consider Figure 3, which plots the $\tilde{SE}$ measure for Intel for the period 1982–1998. Late in 1991, in response to increased competitive pressures from

AMD and C&T, Intel launched its "Intel Inside" campaign. The campaign marked a shift in strategy for Intel to bolster its brand attributes. We see from Figure 3 that the $\tilde{S}\tilde{E}$ measure captures Intel's shift to enhancing value appropriation capabilities. While Intel maintained an emphasis on value creation capabilities (i.e., $\tilde{S}\tilde{E}$ is negative for the entire period), the measure shows a definite positive drift, associated with the execution of the "Intel Inside" campaign, toward the development of value appropriation assets.

Figure 3. Strategic Emphasis Indicator for the Intel Corporation 1982–1998



The Financial Implications of the Trade-off Between Value Creation and Value Appropriation

Our research goal is to assess the financial effect generated by shifts in emphasis between value creation and value appropriation and to address the conditions under which these shifts might have differential performance implications. To capture the long-term financial impact (i.e., the total expected value), our analysis focuses on the effect of strategic emphasis on the stock market valuation of the firm.

Stock Return as a Measure of Long-term Financial Performance

The economic return to a marketing strategy is typically not attained in a single reporting period, but is realized over a longer-term time horizon. Yet, most of the research in marketing assessing strategic decisions has involved measures such as sales, accounting return on investment, or market share, whose current values provide, at best, an incomplete picture of the value of a strategy. An alternative is to make use of stock market data, which provide the financial markets' estimate of the total expected value of the strategy.

A firm's marketing strategy can be viewed as an intangible asset that influences future returns (Srivastava, Shervani, and Fahey 1998). The value of the strategy can be represented as the excess future returns generated by the firm when this particular strategy is employed. As such, the value of a marketing strategy to the firm can be depicted as a discounted present value of the future cash flows generated through the use of this marketing strategy:

$$V_i = \sum_{t=1}^{\infty} \frac{CF_t}{(1 + r)^t}, \quad (1)$$

where V_i is the present value of marketing strategy i, CF_t is cash flow at time period t where generated due to the use of marketing strategy i, and r is the cost of capital.

In practice, however, it is virtually impossible to estimate the value of a marketing strategy using the above formula. While the measure of V_i is not available, under the efficient markets hypothesis, abnormal stock return (the difference between the actual and expected return, given the market and firm risk characteristics) will provide an unbiased estimate of the change in V_i. Given efficient markets, all available information about future cash flows is incorporated into the current stock price. When an unanticipated change in strategy occurs, the markets react and the new stock price reflects the long-run implications such change is expected to have on future cash flows. As such, abnormal stock return provides an estimate of the

difference in market value of the firm before and after the change in marketing strategy occurs. It, therefore, can be used as an estimate of the long-run financial value resulting from a shift in marketing strategy.[2]

Testing for the "Information Content" of Strategic Emphasis

We seek to assess the extent to which changes in strategic emphasis are associated with long-term financial performance. We do so by examining the "information content" of strategic emphasis, i.e., whether changes in the $\tilde{S}\tilde{E}$ series are associated with stock return. A significant relation would indicate that investors view these changes as signaling changes in the discounted future cash flow of the firm. That is, stock price moves because investors change their expectations of the future cash flows due to the factors associated with information contained in the measure.

Early work in the area of assessing information content, for example, in accounting, focused on the role of changes in accounting variables such as size-adjusted earnings. More recent work, e.g., Aaker and Jacobson (1994) and Barth, Clement, Foster, and Kasznik (1998), has investigated the role of non-financial variables, such as brand attributes. These studies seek to test for "incremental information content," i.e., the degree to which a series provides added explanatory power to current earnings information in explaining stock price movements.

Assessing the incremental information content of strategic emphasis can take place by regressing stock returns on changes in accounting business performance and changes in strategic emphasis. That is, estimating the model:[3]

$$StkR_{it} = \alpha_0 + \alpha_1 \Delta ROA_{it} + \alpha_2 \Delta \tilde{S}\tilde{E}_{it} + \varepsilon_{it} \qquad (2)$$

where $StkR_{it}$ is the stock return for firm i at time t, ΔROA_{it} is the unanticipated change in accounting business performance, $\Delta \tilde{S}\tilde{E}_{it}$ is the unanticipated change in our indicator measure of strategic emphasis, and ε_{it} is the error term. Since stock market efficiency implies that investors react only to unanticipated changes, changes in the measures are defined as deviations of the series from what could have been predicted based on past information. These deviations are typically operationalized as the residuals from a time-series forecast model.

Equation 2 reflects the fact that accounting measures supply information about current and future-term financial performance. This effect is captured by α_1 (commonly known as the "earnings response coefficient"), which depicts the stock market response to unanticipated changes in accounting information. Accounting indicators, however, are limited in their ability to capture completely the expected net cash flow from the future opportunities facing the firm. Do investors view shifts in a firm's strategic emphasis as providing additional information about these opportunities (and what is their impact on the firm's future cash flows)?

The null hypothesis is that $\alpha_2 = 0$, which would imply that the indicator of strategic emphasis has no incremental information content. That is, the financial markets perceive the measure to provide no information about future earnings beyond that reflected in current-term earnings. The alternate hypothesis is that $\alpha_2 \neq 0$, which implies that stock-market participants perceive the change in the strategic

emphasis indicator to contain information (incremental to that reflected in current-term accounting business performance) about future cash flows.

Of particular concern to our study is investigating the opposing elements of the alternative hypotheses of $\alpha_2 > 0$ versus $\alpha_2 < 0$, i.e., whether a shift in strategic emphasis toward value appropriation versus value creation has a positive or a negative effect on expectations of future cash flows. While increasing either value creation or value appropriation capabilities should enhance firm performance, the effects of shifts in emphasis between the two have not been examined previously.[4]

Differential Response to Shifts in Strategic Emphasis

The effect of strategic emphasis on market value may not be constant across firms. Rather, investors may have a differential response to shifts in strategic emphasis under differing conditions. In particular, the response may vary systematically with (1) the type of environment in which the firm operates and (2) situational factors regarding the firm.

Role of the Technological Environment. Differences in market response can be posited to stem from industry-wide characteristics. Chandler (1994), for example, highlights the role of technology as a key characteristic differentiating industries. He defines "high technology" industries where new product development is the critical element of inter-firm competition. These industries tend to be characterized by high R&D intensity, changing products, and long-term horizons for achieving a payback. He contrasts this with "stable" and "low" technology industries where the final product has historically remained much the same. Competition is more functional and strategic than in high tech industries. That is, firm performance is based, for example, more on the improvement of the existing product and processes and on enhanced marketing efforts. R&D is still important, but is likely to be less intensive and focuses more on product improvement and cost reductions than on new product development.

One hypothesis is that value creation capability is more important in environments where technology is changing, i.e., in the high tech industries. A firm cannot stem the tide of innovation and constantly has to adopt new technologies and create new products to be successful. Conversely, value appropriation capability is more important in stable and low technology industries. Here there is less opportunity for value creation and firms have to work to sustain their advantages. This suggests that increasing emphasis on value creation capability is more important in high technology markets than in stable and low technology markets. This would suggest differences in magnitude (or even in sign) for the estimates of α_2 among the technology environments.

An alternative view, stemming from the literature on imitation, would suggest that, even for the high technology firms, ability to capitalize on innovations is at least as important as their ability to create new value. Levin, Klevorick, Nelson, and Winter (1987) found that it is relatively easy and at least 35 percent cheaper for competitors to replicate an innovation than to develop it. The majority of "typical" unpatented innovations could be imitated within a year, and major patented

innovations within three years. However, it is not easy, and certainly not cheaper, to imitate superior reputation or brand image. As patents do not provide adequate protection in many high tech industries, firms are forced to seek other ways to restrict competitors from dissipating their profits. Thus, even in the high tech industries firms should engage in the development of value appropriation capabilities.

Testing for differential effects of technological environment can be achieved by estimating separate regressions for the different technological environments and then testing whether the coefficients differ among them.

Situation of the Firm. Differences in market response can be also hypothesized based on differences in the situation of the firm. For example, there are competing hypotheses about the moderating effect of profitability. One view emphasizes exploiting opportunities when they arise. In this view, firms with positive unexpected earnings should focus on locking in their advantage through a shift toward value appropriation. By the same logic, firms in a weaker than expected financial position would be better served by emphasizing value creation capabilities (i.e., they are not creating sufficient value to justify increased investments in value appropriation). An alternative view emphasizes the dissipation of profits. In this view, firms cannot rest on their past success. Firms should not focus on sustaining existing advantages, which is oftentimes futile, but rather should create new advantages at a faster rate than the old advantages are being eroded by competition (Grant 1991). As such, a firm in a superior financial position needs to prepare for the eventual dilution of its existing advantages by focusing more on value creation projects.

The firm's existing strategic emphasis may also influence the effect of shifts in strategic emphasis on stock market response. The concept of path dependency advanced in evolutionary economics postulates that the strategic choices a firm made in the past shape its current strategic position and the viability of future choices. That is, the stock market response to an unanticipated strategy change ($\Delta\tilde{S}\tilde{E}_{it}$) may be moderated by the past strategic choice ($\tilde{S}\tilde{E}_{it-1}$). The theory, however, is not clear as to the direction of the effect. Diminishing marginal returns hypothesis would suggest that firms with high levels of value creation capability would receive less gain from expanding their value creation capabilities and firms with high levels of value appropriation capability would receive less gain from expanding their value appropriation capabilities. Conversely, Lei, Hitt, and Bettis (1996) argue that as a firm's skills become more and more specialized, they may produce expertise that is difficult for competitors to imitate and, therefore, may become a source of competitive advantage. Thus, firms with high levels of value creation emphasis should further enhance their value creation capabilities and firms with high levels of value appropriation emphasis should continue to enhance their value appropriation capabilities.

Allowing for this type of differential response can be achieved by modifying Equation 2 to allow for systematic variation in α_2 depending on unanticipated ROA and the past level of strategic emphasis. That is, estimating a model of the form:

$$StkR_{it} = \alpha_0 + \alpha_1 \Delta ROA_{it} + \alpha_2 \Delta \tilde{S}\tilde{E}_{it} + \varepsilon_{it} \quad (3)$$

with

$$\alpha_2 = \alpha_{20} + \alpha_{21} \Delta ROA_{it} + \alpha_{22} \tilde{S}\tilde{E}_{it-1}$$

This yields the estimating equation:

$$StkR_{it} = \alpha_0 + \alpha_1 \Delta ROA_{it} + \alpha_{20} \Delta \tilde{S}\tilde{E}_{it} + \alpha_{21} \Delta ROA_{it}\, \Delta \tilde{S}\tilde{E}_{it} + \alpha_{22} \tilde{S}\tilde{E}_{it-1} \Delta \tilde{S}\tilde{E}_{it} + \varepsilon_{it} \quad (4)$$

The coefficient α_{21} depicts the extent to which unanticipated ROA moderates the effect of strategic emphasis on stock return. The sign of the coefficient provides stock market participants' perceptions as to how best to change weak performance or continue superior performance. A value of $\alpha_{21} > 0$ would indicate that firms in a weak financial position are better served by emphasizing value creation and firms in a strong financial position are better served by emphasizing value appropriation.[5] A value of $\alpha_{21} < 0$ would indicate that firms in a weak financial position are better served by emphasizing value appropriation and firms in a strong financial position are better served by emphasizing value creation. The coefficient α_{22} depicts the moderating effect of past strategic emphasis on the stock market response to an unanticipated shift in strategic emphasis. Values of $\alpha_{22} < 0$ would support the diminishing marginal returns hypothesis; values of $\alpha_{22} > 0$ would support the specialization hypothesis.

Data Source

The dataset used in our analysis comes from the Standard and Poor's 1999 COMPUSTAT database. This database provides annual accounting and stock market information for publicly traded firms on the New York, American, and NASDAQ stock exchanges. The sample of companies used in the analysis is restricted to manufacturing companies reporting their market value, R&D expenditures, advertising expenditures, assets, and net income. To ensure correspondence between the stock price and accounting information, an additional requirement that companies have a December fiscal year-end is used. Our data sample is made of observations from 569 different firms reporting for all or some of the period 1980–1998. We have a total of 3,563 observations available for analysis.

Table 1 provides some descriptive statistics for our $\tilde{SE}$ measure and its components. The mean $\tilde{SE}$ for our sample is –.025, which reflects the fact that, on average, firms have higher R&D intensity (.068) than advertising intensity (.043). The mean of –.0015 for the annual change in $\tilde{SE}$ shows that inter-temporally firms were increasing their relative emphasis on value creation. That is, R&D intensity increased more than did advertising intensity. Table 1 also shows that greater $\tilde{SE}$ variability exists across firms than it does inter-temporally. This is consistent with high within-firm persistence in strategic emphasis (as evidenced by the results of the $\tilde{SE}$ first-order time-series model reported in Table 3). Table 2 provides a list of the industries included in our study and classifies them into the high, stable, and low technology sub-samples. It also provides descriptive statistics for the variables that form the basis for our analysis.

Table 1. Properties of the $\tilde{S}\tilde{E}$ Indicator and Its Components

	# obs.	Mean	Standard Error	10th Percentile	50th Percentile	90th Percentile
$\tilde{S}\tilde{E}_{it}$	4,132	–.025	.11	–.124	–.015	.069
Advertising and Promotional Intensity$_{it}$	4,132	.043	.064	.005	.022	.101
R&D Intensity$_{it}$	4,132	.068	.087	.007	.042	.149
$\delta\tilde{S}\tilde{E}_{it}$	3,563	-.0015	.054	–.026	–.001	.024
δAdvertising and Promotional Intensity$_{it}$	3,563	.0009	.027	–.01	–.0001	.013
δR&D Intensity$_{it}$	3,563	.0024	.051	–.017	.001	.023
$\tilde{S}\tilde{E}_{i}$	569	–.04	.123	–.171	–.023	.055
Advertising and Promotional Intensity$_{i}$	569	.041	.07	.005	.02	.096
R&D Intensity$_{i}$	569	.081	.098	.007	.049	.19

Variable Definitions:

$$\tilde{S}\tilde{E}_{it} = \frac{\text{Advertising and Promotional Expenditures}_{it} - \text{R\&D Expenditures}_{it}}{\text{Assets}_{it}}$$

$$\text{Advertising and Promotional Intensity}_{it} = \frac{\text{Advertising and Promotional Expenditures}_{it}}{\text{Assets}_{it}}$$

$$\text{R\&D Intensity}_{it} = \frac{\text{R\&D Expenditures}_{it}}{\text{Assets}_{it}}$$

$\delta\tilde{S}\tilde{E}_{it}$, δAdvertising and Promotional Intensity$_{it}$, and δR&D Intensity$_{it}$ are inter-temporal changes in the respective variables, i.e., $\delta\tilde{S}\tilde{E}_{it} = \tilde{S}\tilde{E}_{it} - \tilde{S}\tilde{E}_{it-1}$.

$\tilde{S}\tilde{E}_{i}$, Advertising and Promotional Intensity$_{i}$, and R&D Intensity$_{i}$ are the firm means for the respective variables over the reporting period.

Table 2a. Industry Affiliation: High, Stable, and Low Technology Groups

High Technology Group	Stable Technology Group	Low Technology Group
Pharmaceuticals	Chemicals	Food and tobacco
Computers	Rubber and plastic	Textile
Electronics	Fuel	Apparel
Instruments	Industrial machinery	Paper and forest
Semiconductors	Aircraft	Furniture and fixture
Telecommunications	Automotive	Building materials
	Electrical equipment	
	Metal	
	Misc. manufacturing	

Source: Chandler (1994) and Chan, Martin, and Kensinger (1990)

Table 2b. Descriptive Statistics

	Full Sample	High Technology Group	Stable Technology Group	Low Technology Group
Stock Return mean (std. dev.)	.27 (.87)	.28 (.91)	.26 (.88)	.24 (.69)
ROA mean (std. dev.)	.087 (.22)	.052 (.28)	.099 (.19)	.145 (.11)
$\tilde{\tilde{SE}}$ mean (std. dev.)	–.024 (.11)	–.07 (.11)	–.007 (.10)	.049 (.08)
# obs.	3,563	1,324	1,808	431

Variable Definitions:

$$\text{Stock Return}_{it} = \frac{\text{Shares Outstanding}_{it} * \text{Price}_{it} + \text{Dividends}_{it} - \text{Shares Outstanding}_{it-1} * \text{Price}_{it-1}}{\text{Number of Shares Outstanding}_{it-1} * \text{Price}_{it-1}}$$

$$\text{ROI}_{it} = \frac{\text{Net Income before Extraordinary Items}_{it}}{\text{Assets}_{it}}$$

$$\tilde{\tilde{SE}}_{it} = \frac{\text{Advertising and Promotional}_{it} - \text{R\&D Expenditures}_{it}}{\text{Assets}_{it}}$$

Estimation Results

We first estimate first-order autoregressive time-series models for ROA and strategic emphasis. Table 3 presents the estimated models. Following the convention, e.g., Kormendi and Lipe (1987), we use the residuals from these models as the measures of the "unanticipated" changes in ROA and strategic emphasis of a firm.[6] Table 4 presents the results of estimating Equation 4 for our entire sample and for the high, stable, and low technology sub-samples.[7]

Table 3. First-Order Time-Series Models for ROA and $\tilde{\tilde{SE}}$*

	Full Sample	High Technology Group	Stable Technology Group	Low Technology Group
Model: $ROA_{it} = \varphi 10 + \varphi 11 * ROA_{it-1} + \eta_{it}$				
ROA_{it-1}	.77*** (64.35)	.78*** (40.84)	.73*** (41.99)	.83*** (28.39)
R^2	.57	.59	.51	.71
# obs.	3,563	1,324	1,808	431
Model: $\tilde{\tilde{SE}}_{it} = \varphi 20 + \varphi 21 * \tilde{\tilde{SE}}_{it-1} + \eta_{it}$				
$\tilde{\tilde{SE}}_{it-1}$	.87*** (88.71)	.84*** (46.78)	.89*** (71.06)	.94*** (47.57)
R^2	.76	.64	.78	.88
# obs.	3,563	1,324	1,808	431

* *t*-statistics in parentheses.
*** $p < .001$

Each equation also includes (1) annual dummy variables so as to capture the effects of economy-wide factors and (2) industry dummy variables to capture industry-specific effects.

Table 4. Stock Market Reaction to Changes in Strategic Emphasis
Dependent Variable: Stock Return*

$StkRet_{it} = \alpha_0 + \alpha_1 \Delta ROA_{it} + \alpha_{20} \Delta \tilde{\tilde{SE}}_{it} + \alpha_{21} \Delta ROA_{it} \Delta \tilde{\tilde{SE}}_{it} + \alpha_{22} \tilde{\tilde{SE}}_{it-1} \Delta \tilde{\tilde{SE}}_{it} + \varepsilon_{it}$

	Full Sample	High Tech	Stable Tech	Low Tech
Unanticipated ROA	1.58*** (15.26)	1.36*** (9.49)	1.80*** (10.85)	3.09*** (6.45)
Unanticipated Strategic Emphasis	1.18*** (3.54)	2.01*** (3.61)	1.50** (2.83)	.91 (.55)
Unanticipated ROA* Unanticipated Strategic Emphasis	3.73*** (6.93)	2.79*** (3.91)	5.37*** (5.93)	–14.77 (–1.42)
Strategic Emphasis$_{t-1}$* Unanticipated Strategic Emphasis	–.61 (–.59)	6.00** (2.91)	–3.44** (–2.59)	–5.80 (–.91)
R^2	.20	.26	.22	.43
# obs.	3,480	1,288	1,770	422

* *t*-statistics in parentheses.
** $p < .01$
*** $p < .001$

Each equation also includes (1) annual dummy variables so as to capture the effects of economy-wide factors, (2) industry dummy variables to capture industry-specific effects, and (3) annual effects for log (Market Value$_{t-1}$) and log (Book Value/Market Value)$_{t-1}$ to capture firm-specific risk factors.

The differences in the number of observations between Table 3 and Table 4 are due to missing value associated with including logs of (Market Value)$_{t-1}$ and (Book Value/Market Value)$_{t-1}$ to form the firm-specific risk factors.

Full Sample Results

The Table 4 results for the full sample estimation indicate that unanticipated ROA has a positive (1.58) and significant effect on stock return. The fact that the coefficient estimate is greater than 1.0 does not indicate that investors are short-term oriented in that they over-value current-term results. Rather, consistent with the time-series models showing that ROA exhibits persistence, a shock to ROA will not dissipate immediately but rather is likely to persist over a number of years. The greater the persistence of a ROA shock, the larger the earnings response coefficient in the stock return equation (Miller and Rock 1985). As such, the market reaction to unanticipated ROA reflects the fact that it provides information not only about the current-term results but also about the future-term profits as well.

Table 4 also shows that changes in strategic emphasis are significantly related to stock return. The positive coefficient (1.18) means that, on average, investors view increases in emphasis on value appropriation relative to value creation as being positively related to future-term performance.[8] With both ΔROA_{it} and $\tilde{\tilde{SE}}_{it-1}$ at zero, a firm unexpectedly increasing its strategic emphasis on value appropriation by one standard deviation of $\Delta \tilde{\tilde{SE}}_{it}$ (.053) will generate approximately a 6.3 per-

cent (1.18 * .053) increase in stock return. Since the model accounts for the direct influence of unanticipated ROA, this effect is incremental to information contained in accounting returns. Investors perceive strategic emphasis as providing incremental information about the future-term prospects of the firm above and beyond that contained in current accounting returns.

The total effect of strategic emphasis, however, is not constant but rather is evidenced to vary systematically. While the interactive effect with lagged strategic emphasis (i.e., –.61) is statistically insignificant, the interactive effect with unanticipated ROA is positive and highly significant. The positive interactive effect (3.73) indicates that investors view a shift toward value appropriation capability as amplifying firm value when a firm is experiencing a positive shock to ROA.[9] Conversely, when firms experience a negative shock to profits, investors view a shift toward value appropriation capabilities less positively. Indeed, when unanticipated ROA is less than –.32 (i.e., 1.18/3.73), investors view a shift toward value creation capability as preferable.

Role of the Technological Environment

Analysis of the sub-samples of high, stable, and low technology reveals both similarities and differences across the three environments. All three samples exhibit positive effects of unanticipated ROA on stock return. One difference to note among the samples relates to the magnitude of the earnings response coefficient estimates. The estimated effect is lowest for high technology (1.36), increases for stable technology (1.80), and is highest for the low technology sample (3.09). Theoretical valuation models, e.g., Miller and Rock (1985), depict the magnitude of the earnings response coefficient to increase the greater the persistence of profits and decrease the larger the discount rate. The observed differential effect is consistent with differences across the three environments. Shocks to ROA are more likely to persist and future-period returns are discounted less, the less dynamic the environment.

The estimated direct effects of strategic emphasis are positive and significant for both high and stable technology markets. While the estimated coefficients are decreasing in magnitude moving from high (2.01) to stable (1.5) to low (.91) technology markets, a Chow test is unable to reject the hypothesis that the direct effect of strategic emphasis is the same across technological environments. Thus, we find no evidence to suggest that value appropriation is any less important in high technology markets than in stable technology markets.

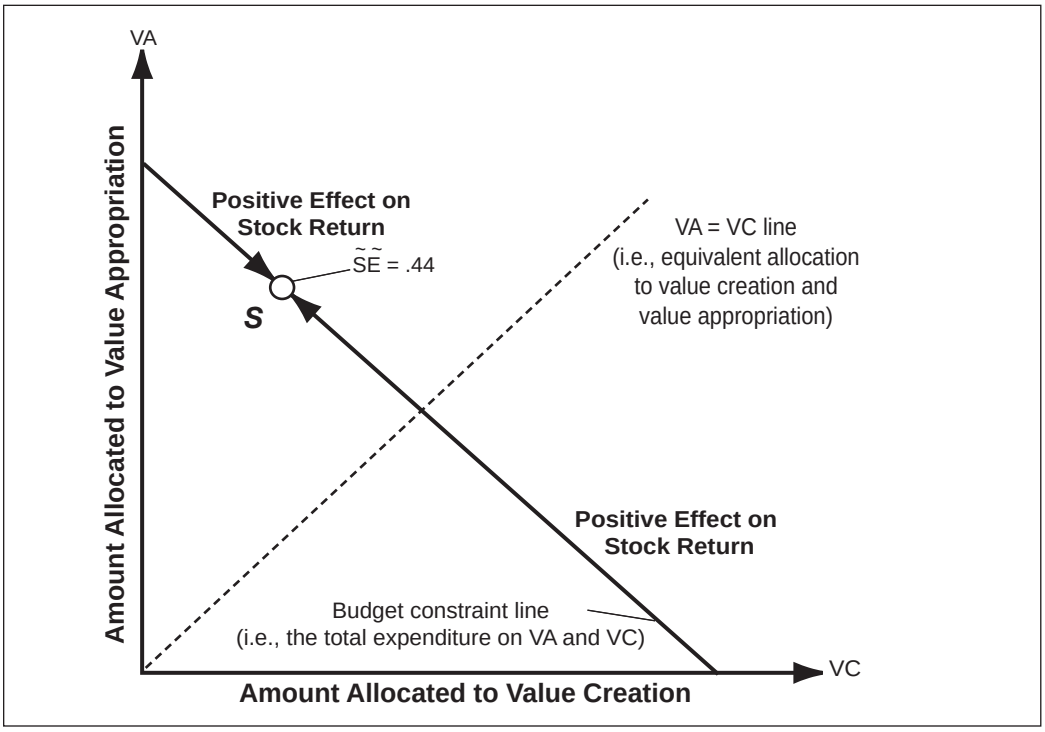
Moderating Effects of Profitability. The moderating effect of unanticipated ROA on strategic emphasis is positive for both the high technology and stable technology environments. This positive effect indicates that investors value a shift toward emphasizing value appropriation capability when earnings are greater than anticipated. In other words, when a firm is doing well the market wants the firm to increase emphasis on value appropriation. The moderating effect is larger in stable technology markets than in the high technology sector (5.37 vs. 2.79). This is consistent with the relative role that, according to Chandler (1994), innovation plays in these two markets. In stable technology markets, where innovation is less

central, firms need to place greater emphasis on appropriation when the firm has an advantage. Locking in an advantage is still important in high technology markets, but less important than in the stable technology markets. Interestingly, the estimated effect is negative for the low technology firms. However, the size of the standard error makes it difficult to isolate the effect or draw conclusions.

Moderating Effects of the Past Strategy. The most dramatic difference among industry groupings is for the interactive effect of unanticipated strategic emphasis with the lagged level of strategic emphasis. The estimated effect is positive and significant for high technology firms (6.00), negative and significant for stable technology firms (–3.44), and negative (although insignificant) for low technology firms (–5.80).

The negative effect is consistent with the proposition of diminishing marginal returns to a high value creation or value appropriation emphasis. This finding suggests that in the stable technology sample, the higher the past level of strategic emphasis, the less positive the market reaction to increases in this emphasis. And, indeed, for very high levels of strategic emphasis, the effect turns negative. Figure 4 graphically depicts the estimated relation between stock return and strategic emphasis depending on the previous level of strategic emphasis.[10] For the majority of the stable technology firms, the market reacts positively to emphasizing value appropriation capability. However, there exists a threshold value S, such that for $\tilde{\tilde{SE}}$ greater than S, there is no need to increase emphasis on value appropriation capability. For those firms, which have already a high emphasis on value appropriation

Figure 4. Effects of Directional Change in Strategic Emphasis on Stock Returns Given Past Level of Strategic Emphasis: Stable Technology Sample

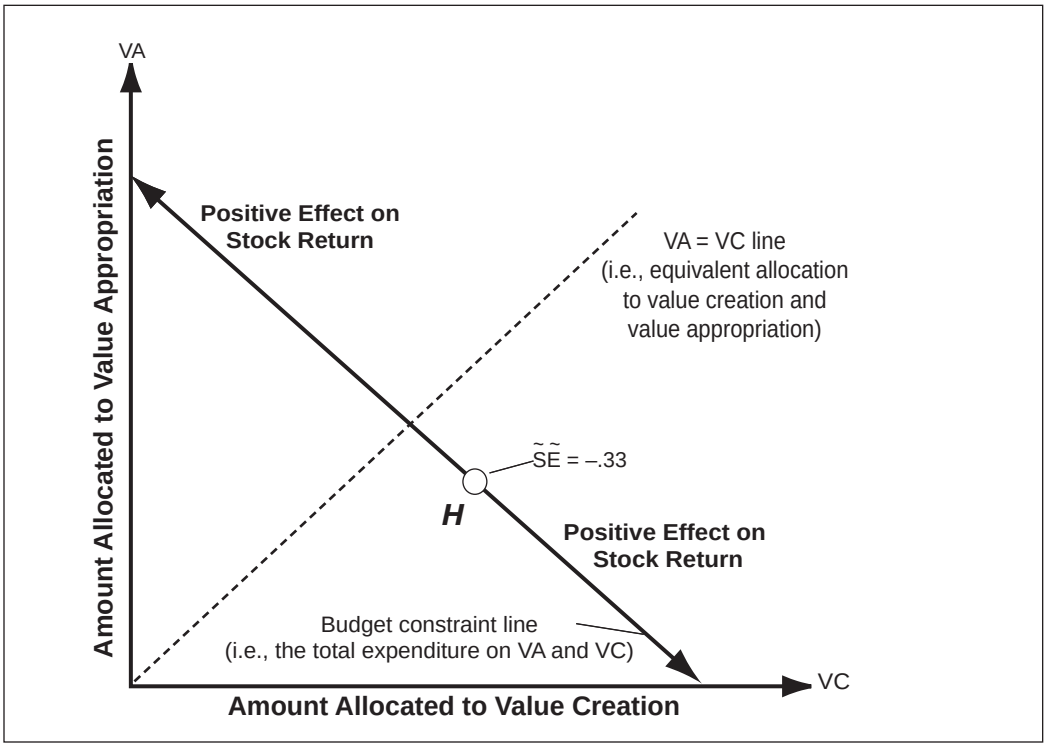


Point S represents an optimal point as firms tend to achieve increased stock return when $\tilde{\tilde{SE}}$ moves toward .44.

capability, its further development has a negative effect on stock return. Our results suggest that for stable technology firms there is a single "converging" equilibrium. An optimum point S exists (estimated at Advertising Intensity – R&D Intensity = .44, i.e., 1.50/3.44). Deviating from this point S has negative effect on return. Movement toward S (represented by arrows in Figure 4) has positive effect on stock return.

Conversely, for high technology firms, the positive coefficient for the interactive effect of unanticipated strategic emphasis with the lagged strategic emphasis is reflective of positive "re-enforcing" or specialization effects. Figure 5 graphically represents our findings for the high technology sample. Here, a single optimum solution does not exist. Firms with high orientation on value creation are rewarded for further emphasis on value creation capabilities. All other firms are rewarded for further investments into their value appropriation capability. A "separating" point H is estimated at Advertising Intensity – R&D Intensity = –.33 (i.e., –2.01/6.00). Movement toward H is viewed negatively by the market. Movement away from H to the extremes of value creation or value appropriation emphasis (represented by arrows in Figure 5) is rewarded by the stock market. This result suggests two possible sources of competitive advantage for the high technology manufacturing firms: either a high value creation emphasis or a high value appropriation emphasis in their marketing strategy.

Figure 5. Effects of Directional Change in Strategic Emphasis on Stock Returns Given Past Level of Strategic Emphasis: High Technology Sample



Point H represents a separating point as firms tend to achieve increased stock return when $\tilde{\tilde{SE}}$ moves away from –.33.

Sensitivity Analysis and Directions for Future Research

We undertook a number of tests to assess the sensitivity of our analysis. We found that alternative specifications and expanded models did not perform as well or added little to the analysis. For example, we tested whether some alternative means of scaling the Advertising-R&D differential for firm size (e.g., dividing by sales or the sum of advertising and R&D expenditures instead of assets) would enhance the information content of the $\tilde{S}\tilde{E}$ measure. In fact, these alternatives displayed lower information content than the asset-scaled size adjustment.[11] We also assessed some other possible moderating factors. For example, we checked whether the anticipated component of ROA_{it} (i.e., the predicted value from the univariate ROI model), rather than just the unanticipated ROA_{it} (i.e., ΔROA_{it}), might also moderate the effect of shifts in strategic emphasis on stock return. We found that only the unanticipated component of ROA_{it} had a statistically significant moderating effect. Additionally, we tested for the presence of feedback effects from stock return to strategic emphasis. That is, our results could stem not from $\tilde{S}\tilde{E}$ having information content but rather from firms shifting strategic emphasis in the wake of changes in their stock market value. The presence of this type of feedback would induce correlation between the error in Equation 4 and $\Delta\tilde{S}\tilde{E}_{it}$, and so lead to biased coefficient estimates. We found no evidence of such an effect. While we find that ΔROA_{it} does influence $\Delta\tilde{S}\tilde{E}_{it}$, we observed no feedback effects from stock return to strategic emphasis that would lead to biased estimates in Equation 4.

While these sensitivity tests did not uncover results challenging our findings, this is not to suggest that further work is not needed. Indeed, a number of directions for future research are warranted. One would be improving the measure of strategic emphasis. For example, we have used resource allocation patterns to discern firm strategic emphasis. An alternative would be to survey experts or statements in the annual reports to operationalize strategy. In addition, as our study examined firms across different industries, the $\tilde{S}\tilde{E}$ indicator we employed had merit as an aggregate indicator of strategic emphasis. Future work focused at the business-unit level and on analyzing a particular industry could seek to develop better industry-specific measures of strategic emphasis. These measures would seek to incorporate other factors that facilitate the processes of value creation and value appropriation in that industry.

Another research avenue might not focus on trying to measure the extent of shifts in emphasis, but rather on isolating events when a shift occurred and determining whether the event reflected increased emphasis on value appropriation or on value creation. An event study, i.e., assessing how the stock market reacted to these shifts, could then be undertaken.

Future work in the area can also explore the potential role of other moderating factors, e.g., cross-cultural differences, stage of the company life cycle, or the effectiveness of patent protection. Indeed, a host of factors besides those included in our model can generate a non-linear or even non-monotonic stock market response to shifts in strategic emphasis. One approach would be to undertake threshold analysis that seeks to isolate different regimes where the effect of strategic emphasis on financial performance differs.

Further, research aimed at better understanding strategic emphasis is in order. An interesting research avenue would be to investigate the factors that influence strategic emphasis and that motivate a firm to shift its emphasis.

Implications

Our study shows that the relative emphasis firms place on value appropriation compared to value creation contains information relevant to investors in the valuation of the firm. We find that, in general, increases in emphasis toward value appropriation capability and away from value creation capability are associated with increases in stock return. This result reinforces the view of Teece (1987) and others who note that many firms, particularly in the high technology sector, labor under the illusion that developing new superior products ensures fabulous success not only for the product but also for the firm. These firms do not pay sufficient attention to restricting competition from imitating innovation and dissipating a firm's returns from it. Our results show that even in the high technology markets, where innovation and R&D are central to firm success, investors view favorably a shift toward value appropriation capability.

The positive response to enhancing value appropriation is particularly strong when a firm has better than expected earnings. In other words, when a firm is doing well the market wants it to increase emphasis on value appropriation. When a positive shock to earnings occurs, this provides a signal to existing and potential competitors as to the direction resources should flow. The inflow of resources into areas with positive shocks will tend to bring returns back toward the competitive rate of return. If management wants to insulate itself from this process, it needs to place greater emphasis on value appropriation and restricting imitation.

Conditions exist, however, where the financial markets view increases in value appropriation capability negatively. For example, for firms experiencing a negative shock to ROA, increased focus on value appropriation capability would in some cases lead to a drop in market value. If a firm is not doing well financially, the financial markets respond positively to efforts designed to generate value creation capabilities. The same is true for firms operating in stable technology markets who are already highly emphasizing their value appropriation capability. For these firms, further increases in the value appropriation capability can decrease market value. If a firm already has placed considerable focus on value appropriation, the markets realize that there may be limits to the firm's ability to extract surplus. In this case, efforts to expand surplus via enhanced emphasis on value creation are rewarded.

Nonetheless, our results serve to highlight the importance stock market participants place on value appropriation. Why is this so, and why have firms not already acted upon this information? Should firms shift their emphasis toward value appropriation? Two phenomena that are not mutually exclusive, namely, signaling and managerial inefficiency, provide some answers to these questions.

First, changes in strategic emphasis may be providing a signal to the marketplace. Firms shifting to strategy with greater emphasis on value appropriation may be signaling that they now possess "sufficient" value creation capability and are seeking to lock in their value creation advantage. Certainly, this can describe the Intel

example, where it possessed great value creation capabilities and sought to exploit this advantage by creating brand loyalty with the "Intel Inside" campaign. This reasoning, if correct, does not indicate that all firms should shift emphasis, but rather suggests that our results are driven by those firms having the necessary value creation capabilities that decided to shift their strategic emphasis.

Second, our results may indicate that firms are indeed inefficient in their allocation of resources in that they may be consistently under-investing in value appropriation (e.g., marketing) activities relative to value creation (e.g., R&D) activities. This can be explained by the difficulty managers have in justifying marketing expenditures. A number of commentators have noted that because of a lack of reliable measures in documenting the effect of marketing, fewer resources than ought to be are devoted to marketing. The Marketing Science Institute, for example, has noted this problem and has called for proposals to help address this issue.

Value creation investment decisions cannot be divorced from issues of appropriability. There are countless examples of innovations that created enormous value but where the innovating firm was unable to capture the surplus. For example, Xerox's Palo Alto Research Center is best known as a breeding ground for innovations from which Xerox was unable to achieve strategic or commercial success (e.g., the PC, Ethernet, graphical user interface (GUI), and page-description language (PDL)). Firms that fail to pay sufficient attention to value appropriation cannot be expected to achieve sustained competitive advantage and reap the rewards from their value creation capabilities.

Notes

1. Interestingly, Golder (2000) also noted Underwood's inability to sustain its place in the typewriter market as a result of a failure to innovate. This once again highlights the need for firms to invest in both value creation and value appropriation capabilities.

2. While market anomalies exist, they tend to be rare and short-lived. As such, particularly for analysis based on a large number of firms across a long time period, the efficient markets hypothesis appears to be a good approximation for the functioning of the financial markets. Even those who question the over-reliance on the efficient markets hypothesis, e.g., De Bondt and Thaler (1985), agree that it is a good starting point.

3. Differences in firm return stem not only from differential changes in expected cash flows but also from differences in risk. That is, riskier firms earn higher returns. Historically, differences in risk have been controlled by modeling the systematic risk of the firm, as reflected by its beta. In more recent work, Fama and French (1992, 1996) have expanded on this "single factor" capital asset pricing model by allowing risk to depend not only on beta but also on "size" and "book-to-market" factors. Interestingly, Fama and French (1992) find that once the role of size (as modeled by log(Market Value)) at the start of the period and book-to-market equity (as modeled by the log(Book Value/Market Value)) at the start of the period are accounted for, estimates of beta are unrelated to firm stock return. To control for these risk factors, our model also includes log(Book $Value_{t-1}$/Market $Value_{t-1}$) and log(Market $Value_{t-1}$). As the effect of these factors may vary depending on economic conditions, we allow their effect to differ over time, i.e., we allow for differential effects by year. By including these factors in the model, we control for the different types of risk and, as such, our analysis is based on abnormal (i.e., risk adjusted) return. The model also includes (1) annual dummy variables so as to capture the effects of economy-wide factors and (2) industry dummy variables to capture industry-specific effects.

4. Other studies, e.g., Erickson and Jacobson (1992), have looked at the separate effects of advertising and R&D on stock return. Comparing response coefficients from this type of model would result in testing different effects than what we are trying to assess in our analysis. In particular, this approach would not capture just shifts in emphasis (as does our S̃Ẽ measure) but also depict market reaction to changes in total expenditures. Consider a simple example to see how the analyses differ. A firm is spending equally on R&D and advertising. It doubles both activities resulting in a substantial change in both variables. The S̃Ẽ measure, on the other hand, would exhibit no change as the firm's strategic emphasis has remained the same despite the doubling of expenditures. By being a difference, (Advertising – R&D)/Assets relates exclusively to a firm's shift in emphasis; separate analysis of advertising and R&D does not.

5. In other words, with $\alpha_{21} > 0$, the interaction of a negative ΔROA_{it} and a negative $\Delta \tilde{S}\tilde{E}_{it}$ or the interaction of a positive ΔROA_{it} and a positive $\Delta \tilde{S}\tilde{E}_{it}$ lead to positive effects on $StkRet_{it.}$

6. The use of a residual, as opposed to the series itself, in a stock return model follows directly from the efficient markets hypothesis. Stock return should exhibit a higher correlation with the residual series because the raw series includes an anticipated component that will be unrelated to stock return. As evidenced by the correlation matrix below, our results are consistent with these efficient markets implications.

Correlation Matrix

	$StkRet_{it}$	$\tilde{S}\tilde{E}_{it}$	ROA_{it}	$\Delta \tilde{S}\tilde{E}_{it}$	ΔROA_{it}
$StkRet_{it}$	1.0				
$\tilde{S}\tilde{E}_{it}$	.005	1.0			
ROA_{it}	.120	.411	1.0		
$\Delta \tilde{S}\tilde{E}_{it}$	.080	.490	.228	1.0	
ΔROA_{it}	.230	.192	.657	.321	1.0

7. Although not reported in Table 4, consistent with previous research, we find significant coefficients for the yearly log (Book $Value_{t-1}$/Market $Value_{t-1}$) and log (Market $Value_{t-1}$) measures. Controversy exists, however, regarding how to interpret the coefficients. One view is that the estimated effects reflect the mis-pricing of stocks. An alternative view, e.g., that raised by Fama and French (1992), is that the factors adjust for risk considerations. The overall negative effect of size reflects reduced risk associated with larger firms. The positive effect of book-to-market reflects risk associated with "relative distress." The key for our analysis is not so much interpreting the rationale for the significance of the factors, which is an ongoing debate in finance, but rather controlling for these factors so that we are able to conclude that shifts in strategic emphasis are not associated with stock return merely through risk.

8. An additional effect of $\Delta \tilde{S}\tilde{E}_{it}$, an indirect effect that works through ROA, may also exist. We estimate a simultaneous equations model and find evidence of a positive effect of $\tilde{S}\tilde{E}_{it}$ on ROA_{it}. As such, α_{20} provides a conservative estimate of the impact of strategic emphasis on stock return as it only assesses the direct path.

9. Another interpretation of this interactive effect, which is observationally equivalent, is that $\Delta \tilde{S}\tilde{E}_{it}$ is moderating the effect of ΔROA_{it}. Firms experiencing increased emphasis on value appropriation have higher earnings response coefficients. This interpretation has merit in that value appropriation capabilities enhance the persistence of ROA, and so the magnitude of the earnings response coefficient.

10. The result follows directly from taking a first-order derivative of the estimated Equation 4. That is, we use the coefficient values from Table 4 as the estimated parameters in Equation 4 and take a partial derivative of the model with respect to $\Delta\tilde{S}\tilde{E}$, while holding $\Delta ROA = 0$. From there, we find a range of $\tilde{S}\tilde{E}_{it-1}$, where $\partial StkRet_{it}/\partial\Delta\tilde{S}\tilde{E}_{it}$ is positive (i.e., $StkRet_{it}$ is increasing with increasing $\Delta\tilde{S}\tilde{E}_{it}$) and is negative (i.e., $StkRet_{it}$ is decreasing with increasing $\Delta\tilde{S}\tilde{E}_{it}$).

11. See, for example, Fisher (1984) for a discussion of issues relating to alternative size deflators.

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