Business Investment Strategy and Firm Performance: A Comparative Examination of Accounting and Market-Based Measures

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Abstract

This study examined the relationship between 130 firm's business investment strategy and their firm performance, as measured by return on investment (ROI) and earnngs per share (EPS). ROI was used as the accounting performance measure and EPS was used as the market-based performance measure. Results indicate that the accounting performance measure (ROI) may be more appropriate for firms pursuing share-increasing and turn-around business investment strategies. Whereas both accounting (ROI) and market-based (EPS) measures may be more appropriate for firms pursuing less risky profit-oriented business investment strategies.

Introduction

The conceptual framework of an organization as an open system is essential to understanding strategy decisions which are responsive to both sources of opportunity (eg. market expansion, new products) and threats (eg. competition) simultaneously (Hrebiniak & Joyce, 1984). Current research involving business strategy and performance is contradictory and fragmented. Further, there is frequent disagreement in the literature as to what constitutes an appropriate measure of organizational performance.

The purpose of this study is to examine the relationship between business investment strategies and firm performance measures. Return on investment (ROI) was used as the accounting measure while earnings per share (EPS) was used as the market- based measure to assess firm performance. The study examines whether the objectives of a performance measure and the type of business investment strategy were determinants for selecting an appropriate firm performance measure. In examining these issues, the study explored whether the use of accounting (ROI), market-based (EPS), or multiple (ROI and EPS) measures varied as the degree of risk associated with a firm's business investment strategy.

The use of accounting and market-based measures may provide an appropriate and more comprehensive measure of firms pursuing relatively less risky investment strategies such as profit or market-concentration asset reduction. Under these conditions, external measures are more munificent for assessment of strategic and tactical decisions, thus suggesting credence for the use of both past financial measures and the investors' market expectations. Since both multiple performance measures may be necessary to the evaluation required by such investment strategies, accounting and market-based performance

measures would appear to be essential in evaluating past financial performance and in developing future strategic decisions which influence future investor decisions.

Researchers (Smith, 1976; Michel & Shaked, 1984; Rockmore, 1991) have argued the need for multiple criteria measures since the success of an organization is not a unitary dimension. A common characteristic of strategic management research is the use of accounting data from income statements and balance sheets to measure firm performance (Dubofsky & Varadarajan, 1987). A limitation of accounting data is that it measures a firm's past performance and does not indicate the perception of a firm's future performance as does market-based measures (Michel & Shaked, 1984), such as earnings per share or the price of a firm's stock.

Confounding is another problem with measuring the firm's performance relationship or moderating effect between the variables of interest (eg. environment and strategy) and the performance measure. This is reflected in Smith's (1976, p.750) statement that "the step from results to organizational effectiveness is large." Smith (1976) proposes that the effective classification of performance measures should demonstrate specificity of the criteria to its intended measure and that the relationship between the variable of interest and the form of measurement be closely associated.

Conceptual Framework

The conceptual framework guiding this study explores the relationship between business investment strategy decisions, and accounting and market-based performance measures. Given the various research and models on organizational performance constructs (Schoeffler, Buzzell & Heany, 1974; Caves, 1977; Lenz, 1981), it is logical to suggest that the success of a business investment strategy selected by a firm may be dependent on the type of performance measure(s) examined. The literature relevant to the variables of the conceptual framework will now be discussed.

Strategy

It is necessary to present a brief overview of strategy levels and models presented in the literature to establish the reasoning for using Hofer & Schendel's (1978) six generic business investment strategies as the strategic framework for this study. The term "strategy" has a variety of meanings which generally include an interactive set of rules or guidelines responsive to external conditions, a hierarchy of primary goals and policies for guiding decisions, a pattern of purposes for major policies and actions, and a plan of action. However, the behavior of strategic decisions by an organization may not be aligned with its goal, thus resulting in dysfunctional performance. For instance, a firm may avoid uncertainty while maintaining stability for its techno-structure (Galbraith, 1973), but this may paralyze an organization and restrict potential profits through its inability to adapt to market demands (Caves, 1970).

Although the concept of strategy is theoretically applicable to each organizational level [corporate, business, functional, sub-functional], various strategic typology models are not. Rumelt's (1974) corporate diversification typology and Miles' and Snow's (1978) organization-environment typology are not appropriate for assessing each strategic level.

Rumelt's (1974) corporate diversification typology is intended to logically classify businesses with respect to degree of product/service market diversification. Generally, these are corporate portfolio decisions of multidivisional organizations not single business unit decisions. The corporate level is concerned with portfolio analysis, diversification decisions, and decisions about the primary organizational structure (Hrebininak & Joyce, 1984). Conversely, Miles' and Snow's (1978) organization-environment typology is most appropriate for a single strategic business unit (SBU). The business-level strategy involves analyzing the relative competitive strength of a SBU, including its distinctive competencies, competitive market growth rates, and availability of critical resources. A SBU is a single or closely related product/service line company, company division, or product/service center responsible for a specific product/service which has its own strategies and task environment.

Hofer's and Schendel's (1978) model provides the strategic framework for this study because it allows for the examination of the linkage between investment strategy of a SBU and firm performance. Their model is embedded in strategic theory and research and permits analysis across a wide variety of organizations in different industries. Another advantage of Hofer's and Schendel's (1978) model is that it allows for the differentiation among the organizational strategic levels. Hofer's and Schendel's (1978; pp.158-176) six business investment strategy classifications are defined in the questionnaire response format provided in Figure 1.

Figure 1
Business Unit Strategy

Please **CIRCLE** the following Business Unit Strategy description defined below that *most closely* fits the strategy of *Your* business unit for the past five years:

1.	*Share Increasing*: to significantly and permanently increase the market share of *Your* business. This strategy would imply a level of investment substantially greater than the norm for *your* industry.
2.	*Growth:* to maintain a relative market share position in rapidly expanding markets. This strategy often requires moderately high investment in absolute terms, but not substantially above *your* industry's investment average level.
3.	*Profit:* to maximize *Your* businesses utilization of its existing resources and skills. Investment's under this strategy are usually at maintenance level.
4.	*Market Concentration and Asset Reduction:* to realign resources and skills of *Your* business to make them correspond to the (new) market segments that the business intends to serve. This strategy usually requires the sale or shutdown of some of *your* businesses asset base and/or moderate cash investment to refocus the remaining assets.strategy are usually at maintenance level.
5.	*Turnaround:* to reverse the declining posture of *Your* business as rapidly as possible. These strategies may be self- financing or may require additional capital and other resources.
6.	*Liquidation and Divestiture*: to generate as much positive cash flow as possible while usually with drawing from the business.

Business Unit Performance

Various performance criteria have been used to measure firm performance. Smith's (1976, p.745) statement: "Deciding what criteria one wants to predict, manipulate, or conceptualize is the first problem of the scientist" appropriately summarizes the critical problem in studying the relationship between a business unit's investment strategy and firm performance. There appears to be no "ultimate criterion" (Thorndike, 1949) that accurately represents the complexity and multi-faceted nature of organizational performance (Smith, 1976; and Hofer, 1983). Smith (1976) suggests that a key criterion or criteria selected should be relevant to an important goal of the organization (Smith, 1976). However, as indicated by Smith (1976), the determination of relevance is one of personal or organizational judgment.

Similar to Thorndike (1949), Mahoney and Weitzel (1969) suggest that complex organizations cannot be effectively evaluated with global unitary measures. Seashore and Yuchtman (1967), on the other hand, caution that the use of multiple criteria is problematic because overall organizational effectiveness may depend on a few criteria, as well as, high firm performance on only a few important criteria. The more sophisticated research studies appear to use multiple criteria for evaluating firm performance, in order to account for performance variability across industrial groupings (Hitt, Ireland & Stadter, 1982).

The literature on measures of firm performance (Seashore & Yuchtman, 1967; Mahoney & Weitzel, 1969; Hitt et al, 1982; Hofer, 1983; Michel & Shaked, 1984; Buzzel & Gale, 1987; Dubofsky & Varadarajan, 1987; David, 1989) indicates that there is no consensus as to which measures to use in assessing business unit performance. Commonly used performance measures are accounting and market measures.

Accounting data from income statements and balance sheets focus on evaluating the internal operating efficiency of a firm. They include such measures as return on investment (ROI) (Thune & House, 1970; Rumelt, 1974; Kudla, 1980; Bourgeois, 1980), return on assets (ROA), return on equity (ROE) and return on sales (ROS) (Dubofsky & Varadarajan, 1987). These are measures of past performance that indicate profitability. ROI is an efficiency measure which indicates the effectiveness of the firm's use of past investment demonstrated by the after-tax profits per dollar of assets (investment). ROI is also referred to as ROA. ROE provides a measure of a firm's after-tax profit per dollar of stockholder investment in the firm, providing a past measure of efficiency indicating the organization's use of stockholder investment. ROS or net profit margin indicates a firm's profitability and the relationship between after-tax profits per dollar of total sales.

Market measures focus on the stock market's evaluation of the firm's performance. Thus, they are often referred to as "market-based" measures. These include stock price and earnings per share (EPS) (Thune & House, 1970; Rumelt, 1974; Kudla, 1980; Bourgeois, 1980; Hofer, 1983) which incorporate both the current return to stockholders and indicate the expected firm performance through immediate and short-term future market evaluation by investors (Lewellen & Huntsman, 1970). The movement (increase or decrease) in the price of a firm's common stock over time indicates the level of confidence (expectations) in the firm's performance by investors. The EPS measure

indicates the profitability of a firm based on its net income to the total number of outstanding shares of common stock. This measure provides an indication as to the market's demand for a firm's stock based on the stock's financial return to the investors.

A limitation of accounting measures is that they reflect a firm's past performance and do not indicate the firm's future performance as do market-based measures (Michel & Shaked, 1984). A limitation of financial measures is that they reflect the expectation of the stock market investor which could change quickly due to events uncontrollable by the firm's management (eg. economic changes due to international crisis or investor perceptions of interest and inflation rates due to national fiscal policy). Thus, market-based performance measures do not characterize the actual performance of the firm. Rather, they represent the investors' assessment (expectations) of the firm's general performance. Even though accounting and market-based measures supposedly evaluate overall firm performance, Michel and Shaked (1984) note that they provide different evaluations of a firm's performance due to the timing (past or present) and the nature (retrospective or prospective) of these different measures.

Taken together, the literature suggests the use of both accounting and market measures of performance. The two performance measures used by this study are ROI (accounting) and EPS (market). ROI is a well-accepted and well-used measure for assessing business performance (Ansoff, 1965). Researchers (Buzzell & Gale, 1987, p.25) have suggested that ROI is superior to other accounting (profitability) measures because it includes profit for each dollar of sales (profit margin) and the volume of business generated by its investments (investment turnover). Due to the absence of a meaningful stock price in many privately held firms and the difficulty in collecting stock price data in those private firms that do internally distribute stock, EPS was used as the market measure of firm performance.

ROI and EPS are also the two most commonly used measures in research studies (Thune & House, 1970; Rumelt, 1974; Kudla, 1980; Bourgeois, 1980). Nevertheless, one study (Michel and Shaked, 1984) found that market performance measures were positively correlated with each other but negatively correlated with accounting measures.

Specifically, this study examines whether accounting (ROI) and market-based (EPS) performance measures differ significantly within varying business investment strategies. Furthermore, by using both ROI and EPS, the proposition of whether the use of accounting and marketing-based performance measures provide a more comprehensive representation of a business unit's performance is also examined.

The study's variables are defined as follows:

1. **BUSINESS INVESTMENT STRATEGY:** focuses on how a single business unit competes within its industry product/service market through integrating the different functional area activities (Hofer & Schendel, 1978, p.27-29).

2. **BUSINESS UNIT PERFORMANCE**: the economic performance of a business unit as measured the accounting performance measure return on investment (ROI) and the market based measure earnings per share (EPS).

Sampling Strategy

A rational approach was used to select the business unit sample. The main concern was to ensure a cross section of geographically dispersed manufacturing and service firms of varying size, as measured by both sales volume and number of employees, and functioning in more or less uncertain task environments.

Data were collected by mailing questionnaires to the operating heads (ie. CEO's, Presidents or General Managers) to assess the firm's business investment strategy and performance as measured by ROI and EPS.

The study's sample consisted of 130 business units representing 36 two-digit Standard Industrial Classification (SIC) codes and 66 four-digit SIC codes. The sample's total 1988 sales ranged from two million to 7,200 million dollars, the range of employees was nine to 42,000, and there were 99 (75.6%) publicly-owned firms and 31 (24.4%) privately-owned firms.

Measures

The concepts measured in the study were (1) business investment strategy and (2) accounting (ROI) and market-based firms (EPS) performance measures.

Business Unit Strategy

Respondents were asked to indicate the nature of their business unit's investment strategy presently being pursued. The response choices consisted of Hofer and Schendel's (1978, p.160) six generic types of business investment strategies (Reference Figure 1). These six generic types of business strategies were used to classify the firm's present business investment strategy. The identification of a business unit's investment strategy was determined by the respondent selecting the appropriate business investment strategy for their firm.

Firm Performance

Actual ROI and EPS of the business unit were used as measures of firm performance. The data were collected in two ways. The questionnaire asked the respondents to:

1. "Please indicate the Return on Investment for your business unit's main product/service over a five-year period," and

2. "Please indicate the Earnings Per Share for your business unit's main product/service over a five-year period."

If available, the actual ROI and EPS were also collected for each business unit from one of three published sources: *Standard and Poors, Moodys*, or *Worldscope Industrial Profiles*. Published ROIs were obtained for each of the 130 firms in the sample. However, published EPSs were not available for 11 (8.5%) publicly owned subsidiaries whose performance measures were reported within the financial performance of their holding company. Published EPS data was also unavailable for 20 (15.4%) private firms. The respondents' reported ROI and EPS were compared to the published ROI and EPS figures to assure the accuracy of the collected performance data. There were no discrepancies between the published and reported ROIs and EPSs, providing evidence for the validity of the self-reported performance measures.

Rockmore's (1991) gain/deficit index score was used to calculate the responding firm's ROI and EPS. Since averaging has a tendency to misrepresent the true performance, direction of a firm, his gain/deficit method was used rather than the averaging of ROI and EPS as used in previous studies (Bourgeois, 1980; Dess & Davis, 1980; Dess & Robinson, 1984; Nkomo, 1987; Daft, Sormunen & Parks, 1988; Grinyer, McKiernan & Yasai-Ardekani, 1988; Robinson & Pearce, 1988). As illustrated in Figure 2, the same performance average can be obtained for firms that are increasing and decreasing in their performance over time, as illustrated by the five-year period. Two scenarios are presented in Figure 2, which demonstrates how the same average EPS for a given five-year period can produce a different gain/deficit index score by changing the year a certain EPS was achieved by a firm. As the example indicates, the five-year reported average (4.4) is the same in both situations but the gain/deficit index score is dramatically different, showing a performance gain (+1.5) in one situation and a performance decrease (-.75) in the second situation.

Figure 2

An illustration demonstrating two different scenarios which have the same average EPS but produce different EPS Gain/Deficit Index scores.

Scenario 1:

Year	*EPS*	*Gain/Deficit*	*Average EPS*	*Index Score*
1	1.5			
2	3.0	+ 1.5		
3	4.0	+ 1.0		
4	6.0	+ 2.0		
5	7.5	+ 1.5	4.4	+1.50

Scenario 2:

Year	*EPS*	*Gain/Deficit*	*Average EPS*	*Index Score*
1	4.0			
2	3.0	- 1.0		
3	6.0	+ 3.0		
4	7.5	+ 1.0		
5	1.5	- 6.0	4.4	-0.75

Data Analysis

Data analysis was conducted in three stages. Stage one involved categorizing responding firms by their business investment strategy. The second stage involved determining a gain or deficit index score for the responding firm's ROI and EPS. In stage three, chi-square goodness-of-fit tests, using the chance criterion, were conducted to determine whether or not congruence or "fit" between business investment strategy categories related to gains or deficits in ROI and EPS indexes. Chi-square tests were used because gain/deficit indexes may assume both negative and positive scores and may not be normally distributed, as well as the fact that research has not empirically demonstrated that either ROI or EPS is superior to the other as a measure of firm performance. Finally, a correlation analysis was conducted between the total sample ROI and EPS performance measures.

Results

Classification of Business Level Strategy

In classifying the firms as to their business investment strategy, the results of the respondents indicated that 19 (14.6%) of the firms currently pursued a share-increasing strategy, 42 (32.3%) of the firms pursued a growth strategy, 49 (37.7%) of the firms pursued a profit strategy, 10 (7.7%) of the firms pursued market concentration/reduction asset strategy, and nine (6.9%) of the firms pursued a turnaround strategy. Given similar risk and resource allocation decisions associated with share-increasing and turnaround investment decisions and the low response rate of firms pursuing a turnaround investment strategy, they were combined for analysis. This resulted in 28 (21.5%) firms being classified in the share increasing/turnaround category.

ROI and EPS by Gain/Deficit Category

ROI was determined for each of the 130 respondents with 71 (54.6%) reporting gains in their ROI and 59 (45.4%) reporting deficits in their ROI. Due to certain private firms electing not to report EPS and public subsidiary firms whose EPS was undeterminable, EPS was available for 99 (76.2%) of the 130 respondents with 53 (53.5%) reporting gains in their EPS and 46 (46.5%) reporting deficits in their EPS.

Comparative Analysis: Business Investment Strategy and Firm Performance

The contingency table used for the chi-square goodness-of-fit tests is provided in Table 1. Results of the chi-square goodness- of-fit tests indicated significant differences between and among ROI and EPS gain/deficit measures for firms with share-increasing and turnaround business investment strategies. Also, there were no differences between ROI and EPS deficits or between EPS gains and deficits reported for these firms. Firms pursuing a share increasing or turnaround investment strategy indicated significant differences were determined between ROI gains and ROI deficits [$X^2 = 14.0$ (1), $p < .001$] and between ROI gains and EPS gains [$X^2 = 9.6$ (1), $p < .01$]. This suggests that ROI may be a more effective measure of performance for firms pursuing riskier investment strategies where limited sources of external performance measures exist. Since ROI provides an immediate measure of past financial performance, this measure may be more

important to organizations pursuing risk-oriented strategies than EPS. The need for immediate performance assessment of past strategic and financial decisions and evaluation of short-term future decisions suggest the importance of ROI as a relevant measure of firm performance. ROI being an internal performance measure would emphasize a firm's control over future strategic investment decisions compared to previous performance results. Conversely, EPS being an external performance measure would indicate reduced control by a firm over its financial investment decisions. The control becomes shared between the firm and the potential investor. This may be explained by investor perceptions. Firms deciding to pursue risk-oriented strategies may eliminate investors who desire long-term relatively secure investments and appeal to those investors seeking short-term high yields. Therefore, the degree of risk associated with the firm's strategic investment decisions influence the nature and availability of investors.

Table 1
Contingency table for the chi-square goodness-of-fit tests

Share Increasing & Turnaround Investment Strategy			
	ROI	*EPS*	*Row*
Gain	21	9	30
Deficit	7	11	18
Column	28	20	48
Growth Investment Strategy			
	ROI	*EPS*	*Row*
Gain	21	18	39
Deficit	21	14	35
Column	42	32	74
Profit Investment Strategy			
	ROI	*EPS*	*Row*
Gain	29	19	48
Deficit	20	18	38
Column	49	37	86
Market Concentration & Asset Reduction			

Also, those firms pursuing a profit investment strategy indicated significant differences between ROI gains and EPS gains [$X^2 = 4.2$ (1), $p < .05$]. From a theoretical perspective, one would expect to find no significant differences between ROI and EPS gains, since firms pursuing this investment strategy should be relatively secure and stable within their market which presents less risk to the investor. One explanation may be due to the timing of a firm's movement from a share-increasing to a profit-oriented investment strategy. If this movement has been recent, investors may not have had time to alter their perception of the firm being one of risk oriented to one of less risk oriented. Therefore, investors searching for more secure investments would not have time to respond to firms transitioning from a risky to a less risky investment opportunity. Finally, there were no

significant differences reported between ROI and EPS deficits, ROI gains and deficits, or EPS gains and deficits.

There were also significant differences evidenced between gains and deficits for ROI and EPS among firms pursuing a market concentration or asset reduction investment strategy. However, there were no significant differences indicated between ROI and EPS for either gains or deficits for firms in this business investment strategy category. An explanation for these results may be that firms pursuing a market concentration or asset reduction investment strategy previously had a relevant share of their market and most likely pursued a profit-oriented strategy. These firms probably had accumulated assets which would allow them to initially maintain a higher ROI and higher EPS due to their reduction of market scope, operations, and workforce. Whereas investors still perceiving these firms to be either a relatively low risk investment due to their previous stability or an investment opportunity associated with a firm's specific market niche, may account for insignificant difference between EPS and ROI.

Finally, there were no significant differences reported for firms indicating the pursuit of a growth investment strategy. Furthermore, unlike Michel's and Shaked's (1984) findings, this study determined a significant correlation ($r = .27$, $p < .05$) between accounting and market-based performance measures for those firms reporting both ROI and EPS.

Discussion

The findings of this study suggest that different firm performance measures may be more appropriate for assessing various business investment strategies. Although the findings are limited due to the small sample, the evidence does suggest that the objectives of a performance measure and the type of strategic investment strategy may be critical to the selection of an appropriate performance measure. For firms pursuing riskier business investment strategies (share-increasing or turnaround), it may be more appropriate for the firm to use more internally derived and controllable accounting measures rather than market- based measures to assess performance goals. Since firms experience high uncertainty associated with limited external performance measures, internal measures would be more appropriate for evaluating past strategic decisions and evaluating future direction (Thompson, 1967). Given the associated risk, it may be inappropriate to evaluate performance on less controllable factors such as investor expectations of business performance and market conditions.

The use of accounting and market-based measures may provide an appropriate and more comprehensive measure for firms pursuing relatively less risky investment strategies such as profit or market-concentration asset reduction. Under these conditions, external measures are more munificent for assessment of strategic and tactical decisions, thus suggesting credence for the use of both past financial measures and the investors' market expectations. Since both multiple performance measures may be necessary to the evaluation required by such investment strategies, accounting and market-based performance measures would appear to be essential in evaluating past financial performance and in developing future strategic decisions which influence future investor decisions.

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