

## A MARKETING PERSPECTIVE ON THE IMPACT OF FINANCIAL AND NON-FINANCIAL MEASURES ON SHAREHOLDER VALUE

Nic S Terblanche, Charlene Gerber, Pierre Erasmus and Delia Schmidt

*Department of Business Management, University of Stellenbosch*

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### Abstract

The pressure for financial accountability contributed to widespread concern about the function of marketing within the company. Consequently, marketers have become preoccupied with measuring the performance of marketing activity. Diverse financial and non-financial methods have been developed to provide evidence of how marketing activity impacts on the bottom line. This article proposes an approach whereby financial and non-financial performance measures are combined to measure the contribution of marketing to sales. Secondary data from two retail brands within the same industry were analysed whereby actual accounting data were adjusted to examine the link between marketing expenditures, specifically with regard to the 4Ps (typical non-financial measures), and sales. The results of the time series regression showed that the nature of the relationship between marketing expenditures and sales is dependent largely on the product characteristics. The link between marketing and sales depicted serves as a starting point from which to build a more robust measurement tool incorporating financial and non-financial marketing performance measures that will serve to justify investment in the marketing of a brand.

**Key words:** shareholder value, marketing performance measures, time series analysis

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### 1

#### Introduction

Marketing managers are being required to demonstrate the profitability of their marketing actions on an ongoing basis (Ramani & Kumar, 2008:27). There have been calls for investigation into the link between marketing actions and financial outcomes (Bahadir, Bharadwaj & Srivastava, 2008), with a consequent increased demand for greater accountability on the part of marketers (Rao & Bharadwaj, 2008:16; Ambler, 2000). The demand for marketing managers to assess the effectiveness and efficiency of marketing decisions has resulted in the development of several marketing performance measures to assess the impact of marketing decisions (Chendall & Langfield-Smith, 2007; Lehmann, 2004).

Researchers and practitioners have developed and used various marketing performance measures to assess the impact of marketing. Although financial measures account for more than 65 per cent of performance measures used in marketing practice (Pont & Shaw, 2003),

these seem to be inadequate for measuring important elements of marketing performance (Lehmann, 2004). Researchers have found that a combination of financial (i.e. data available from and ratios based on financial statements) and non-financial measures (i.e. other performance measures) have become essential to assessing marketing performance (O'Sullivan & Abela, 2007); they have also found that non-financial measures (such as the 4Ps) are better predictors of a company's long-term goals than financial measures are (Chendall & Langfield-Smith, 2007).

Generally, a degree of consensus has been reached that the problem of performance measurement should be approached from both the financial and the non-financial perspectives. Obtaining a balance between the two perspectives is the key to greater respect for marketing managers in boardrooms, as well as to better learning within the marketing department (Rust, Ambler, Carpenter, Kumar & Srivastava, 2004; Ambler, 2003).

Pioneering work has been done by, amongst others, Doyle (2000a) and Ambler (2003) in

pursuit of obtaining reasonable and transparent measurement tools for marketers. Although there is extensive insight into non-financial measures such as the marketing mix, service quality and the like (O'Sullivan & Abela, 2007; Farris, Bendle, Pfeifer & Reibstein, 2006; Lehmann, 2004; Rust et al., 2004; Srivastava & Reibstein, 2004), financial measures remain problematic for the many marketers who fail to understand the importance of the bottom line within a wider financial context (Lukas, Whitwell & Doyle, 2005). According to Lehman (2004), finance is the language of commerce, and whether or not marketers like it, they have to accept accountability for expenditures. He notes that the work emerging in the domain of marketing appraisal has one common thread, which is a focus on evaluating marketing actions and assets in financial, not marketing, terms.

Even though there has been dissent as to whether marketers ought to become more accountable, researchers have failed to deliver a measurement instrument that could measure marketing performance in financial and marketing terms (Bick, 2009). This article proposes a marketing performance measurement approach whereby both financial and non-financial measures are combined, allowing all parties to communicate performance in terms that would be acceptable and understandable to them. More importantly, if marketers were to expand their skills base to include financial analysis, they would be able to engage top management in meaningful conversation on the role of marketing investment in a company (Srivastava, Shervani & Fahey, 1999; Doyle, 2000b; Ambler, 2003). It is proposed that actual marketing costs be scrutinised. By tracking a brand's cash outflows (i.e. cost) and inflows (i.e. sales) over a four-year period, inferences can be made about the contribution by marketing to cash generation. In the study reported here, marketing expenditures (outflow) were correlated with sales (inflow) during the same period to measure this contribution to sales.

In this article, shareholder value maximisation is discussed and marketing's lack of credibility is highlighted. In light of this goal, marketers' attempts at performance management are addressed by focussing on marketing perfor-

mance measures, while the process of linking marketing to sales is explained in detail.

## 2

### Shareholder value maximisation

In the field of financial management, it is generally accepted that the primary financial objective of a company should be centred on the creation of shareholder value (Brigham & Daves, 2010:4). The rationale is simple: shareholders are the owners of a company and the board of directors is their elected representative; therefore, the objective function of management should be to maximise shareholder value. In order to achieve this objective, it is necessary for the company's management to invest in value-creating investment opportunities only. This is achieved when managers make decisions that increase the discounted value of all forecasted future cash flows (Copeland, Koller & Murrin, 1994; Martin & Petty, 2000).

To ensure that the actions of the management of a company are focussed on the creation of shareholder value, it is important for systems to be in place that will ensure that this objective is clearly communicated to management. Furthermore, it is important that management's performance is evaluated to determine whether they have managed to achieve their objective. Appropriate compensation systems should also be developed to ensure that management is rewarded for achieving the objective of shareholder value creation (Monks & Minow, 2004). All too often, however, there is a lack of clarity about the objectives and the means of reaching them (Donovan, Tully & Wortman, 1998:1). As a result, performance becomes vague and managers' remuneration subjective. Koller (1994) comments that the predominant cause of inappropriate performance measurement is that the measures applied to evaluate performance are not aligned with the ultimate goal of creating shareholder value.

Typically, the financial measures used to assess periodic performance are based on historical accounting information such as earnings, profit margins or returns figures. Martin and Petty (2000:8) maintain that such measures are almost always single-period accounting-based measures of performance

that suffer from two important limitations: they are based solely on one historical period of operations (there is no reason to believe that they are indicative of the life-time value of the initiative), and accounting information systems do not incorporate the opportunity cost of capital.

In an attempt to improve on some of the weaknesses of these traditional accounting-based performance measures, a number of value-based financial performance measures were developed. These measures are usually incorporated into a broader management system that is focussed on achieving the objective of shareholder value creation. This management approach is classified as value-based management (VBM) and, according to Koller (1994), it adopts value as a doctrine, a precise and unambiguous measure from which the entire company can be operated. As VBM recognises shareholder value creation as the fundamental assumption underlying financial theory, management consequently has one basic, prevailing goal: to create value for shareholders (Brigham & Daves, 2010).

If VBM is properly executed, it is a managerial approach that aligns a company's overall aspirations, analytical techniques and management processes to focus decision-making on the key drivers of value (Koller, 1994). Ryan and Trahan (1999) conclude that VBM is all-encompassing and includes corporate strategy, management compensation, and detailed internal reward systems, all of which are designed to link employee performance to shareholder value. In order for managers to evaluate the success of their actions, they need to assess the development of the strategy at finite intervals over the specified time frame.

VBM has been described as the marriage between strategic thinking and modern financial theory (Day, 1990:333). Copeland et al. (1994: 96) suggest that the "right" organisation of a company is critical to value creation, as it ensures that the aspirations and strategy are translated into disciplined execution. The authors maintain that there is no right approach to organisation, only that the chosen structure should enable performance accountability of clearly defined units, such as performance accountability for the marketing function.

### 3

#### The marketing function

Marketing is defined as "the activity, set of institutions, and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large" (AMA, 2007). In its simplest form, the marketing function serves to manage profitable customer relationships by targeting market segments and tailoring the 4Ps (i.e. product, price, place and promotion) to meet the needs of the identified target market (Kotler & Armstrong, 2008:4). Kotler and Keller (2012:136) emphasise the importance of the marketing function by stating that the financial success of companies often depends on marketing ability and that the lack thereof could be the Achilles' heel of formerly prosperous companies. A response to the indecision regarding the role of marketing in modern companies was constructed by Srivastava et al. (1999), who argued that, in an attempt to inspire a market perspective among companies, marketing should directly influence the business processes contributing to the generation and maintenance of customer value.

Marketing managers have repeatedly been challenged to provide accountability for expenditures (Grønholdt & Martensen, 2006; Ambler, 2003; Rust, Lemon & Zeithaml, 2004; Doyle, 2000b). Some have proposed the use of shareholder value analysis as a solution to the dilemma of demonstrating the added-value that marketing contributes to a company (Bick, 2009; Srivastava, Shervani & Fahey, 1998; Day & Fahey, 1988). Accordingly, marketing investments and strategies are evaluated based on their ability to enhance value.

Ambler (2006) describes marketing as a two-stage process: building brand equity, and then using it to drive cash flow. As a result, if performance is to be benchmarked and monitored, both stages have to be measured. The value of a company is dependent largely on the growth prospects and perceived sustainability of profits. Although a two-stage model like this is theoretically sound, marketers' continual inability to formally trace the effects of a marketing action to company value undermines the latter stage, and in turn,

marketing (Rao & Bharadwaj, 2008; Moorman & Rust, 1999).

### 3.1 Marketing's credibility

Researchers and academics posit that the role of marketing in a company became focussed on strategy implementation (Martin, 2010; Webster, 1992) and evaluating how expenditures influence marketplace performance (Kotler & Keller, 2012:136; Bick, 2009). Research indicated that marketing performance tends to meet objectives (Ambler, 2003:29). Accordingly, a number of marketers have recognised the need for more effective feedback systems (Wilson & Gilligan, 2005:33). Bonoma and Clark (1988:3) note that marketing literature focuses almost exclusively on the efficiency of marketing initiatives but there is curiously little work concerning the effectiveness of such strategies. Crudely, the essential difference between the two concepts is captured by the notion that "efficiency is doing things right, effectiveness is doing the right things" (Ward, 2004:7).

The distinction between efficiency and effectiveness arose in an effort to distinguish means-related efforts from ends-related efforts (Bonoma & Clark, 1988:3). The necessity of this distinction is obvious from the previous notion that marketers believe that non-financial measures are sufficient ends in themselves. Mistakenly, some assume marketers' pre-occupation with efficiency measures (market share or customer satisfaction) suggests that such intermediate measures are "self-evident" measures of effectiveness (Wilson & Gilligan, 2005:554). According to Wilson and Gilligan (2005:554), the intensive coverage of efficiency measures implies its effectiveness. These measures are applied extensively by marketing managers, and are generally assumed to be correct. This, however, may not necessarily be the case.

These shortcomings of efficiency measures have led many to adopt performance management systems to monitor a variety of important measures that managers have identified in pursuit of their objectives (Ambler & Roberts, 2008; Farris et al., 2006:3; Clark, Abela & Ambler, 2006; Ambler, 2003:57). These systems or collective measures attempt to address three

complications that Rust et al. (2004) identify in their pursuit of measuring marketing productivity:

- relating marketing to long-term effects;
- separating individual marketing activities from other activities; and
- using purely financial measures have proved inadequate for justifying marketing investments; non-financial measures are also needed.

Nevertheless, Ambler (2003:29) found that, more often than not, performance is a function of what is planned and measured. For this reason, Ambler and Kokkinaki (2002:225) contend that successful marketing requires monitoring the effectiveness of marketing activities and that better measurement will result in better marketing. Hence, if the financial impact of how market results create shareholder value is not measured, it is likely to be arbitrary and top management will consequently continue to undermine marketing efforts (Moorman & Rust, 1999). Finally, marketing actions should aim to create measurable marketing assets, which, in turn, should contribute to shareholder value.

Marketing investment and strategy analysis should be evaluated according to their ability to enhance value. The inability of marketers to do so and, as a result, to abide by the laws of shareholder wealth maximising is undermining the strategic influence of marketing managers in companies (Doyle, 2000b). Unless marketers expand their skills to incorporate the financial analysis of their strategies, top management is likely to maintain the status quo and marginalise marketers and their proposed investment strategies. There is no shortage of recent outcries from various corners of the business domain for increased accountability and transparency of marketing money spent (Davis, 2007; Ambler, 2003; Rust et al., 2004; Morgan, Clark & Gooner, 2002; Doyle, 2000b). Some have gone as far as contemplating the demise of marketing professionals (Doyle, 2000a), a concern based in the ongoing marginalisation of marketers at boardroom tables. Reinforcing the concern of Rust et al. (2004) regarding marketers' financial ineptitude, Lukas et al. (2005) contend that:

"... marketing's lack of strategic influence within companies will continue to happen until

marketing has a better understanding of what shareholder value is and how it provides opportunities for the discipline to engage in a meaningful performance dialog with top management. The quality of, and motivation for, such a dialog depends on fully understanding the marketing–finance interface, which is centered on the interdependence between the marketing function and shareholder value.”

Commendable work has been done on investigating the plausibility of the shareholder value framework (embracing the VBM concept) as a solution to linking marketing activity to sales (Rust et al., 2004; Ambler, 2003; Doyle, 2000b; Srivastava et al., 1999). Using VBM to govern decision-making could resolve the underinvestment bias derived from senior management regarding marketing money spent as expenditures instead of investment (Doyle, 2000b). If marketers could engage executive managers in a meaningful dialogue to successfully demonstrate the extended contribution of marketing investment it would strengthen the strategic role and importance of the marketing function. Furthermore, the incorporation of financial discipline into marketing management would increase the efficiency and effectiveness of marketing tactics as a result of improved goal articulation and resource allocation and this should facilitate learning within the company (Koller, Goedhart & Wessels, 2010:435; Damodaran, 2001:802).

### 3.2 Marketing performance measurement

As early as 1988, marketing research anticipated the introduction of shareholder value maximisation as a means for measuring marketing performance (Day & Fahey, 1988). The demand from marketing managers to assess the effectiveness and efficiency of marketing decisions has resulted in the development of marketing measures to assess the impact of marketing decisions (Chendall & Langfield-Smith, 2007; Lehmann, 2004). Both marketing practitioners and academics have shown increasing interest in the assessment of marketing performance (Ambler, Kokkinaki & Puntoni, 2004; Clark, 1999) and it is therefore not surprising that measuring marketing’s performance has emerged as one of the top research priorities in the field of marketing (Lehmann &

Reibstein, 2006; Lehmann, 2004).

As illustrated in Table 1, marketers have a plethora of measures available to them. The combination of performance measures used will depend on the objectives and circumstances (Ambler, 2003), but balancing a number of useful measures when evaluating a marketing strategy is important. Farris et al. (2006:3) argue that, by combining various measures, managers can obtain more accurate information. Table 1 provides a brief summary of what Grønholdt and Martensen (2006) found to be the most widely used marketing measures.

It is evident from Table 1 that not all of the financial measures have been given the attention deemed necessary to develop a common language with top management in order to provide evidence of marketing productivity. It is repeatedly argued, however (Ambler, 2003; Doyle, 2000b; Lukas et al., 2005), that, if marketing is to become central to the general management process, marketers need to expand their skills base to include financial planning techniques. Ambler (2008) argues that, although financial analysis is necessary to evaluate different strategy alternatives, it cannot be used in isolation from non-financial measures. Doyle (2000a) states that measures such as sales, market share or consumer attitudes have little value as criteria for judging marketing strategies, since they have no necessary correlation with how investors value a company. As stated, more than 65 per cent of performance measures used in marketing practice are financial measures that are inadequate to measure important elements of marketing performance (Lehmann, 2004). Not only have researchers found that a combination of financial and non-financial measures has become essential to assessing marketing performance (O’Sullivan & Abela, 2007) – they also found that non-financial performance measures are better predictors of a company’s long-term goals than financial measures are (Chendall & Langfield-Smith, 2007; Koller et al., 2010:431). It is therefore necessary to develop the relationship between non-financial efficiency measures and financial effectiveness measures. Rust et al. (2004) state that, in order to monitor the contribution of marketing, it is necessary to track off-balance-sheet measures and relate such measures to current and expected performance.

**Table 1**  
Popular marketing performance measures

Mental consumer results	Market results
Brand awareness <sup>1</sup>	Sales (volume and value <sup>3</sup> ) <sup>1</sup>
Relevance to consumer	Sales to new customers
Perceived differentiation	Sales trends <sup>2</sup>
Perceived quality/esteem <sup>1</sup>	Market share (volume and value) <sup>1, 2, 3</sup>
Relative perceived quality <sup>1</sup>	Market trends <sup>1, 2</sup>
Image/reputation	Number of customers <sup>1</sup>
Perceived value	Number of new customers
Preference	Number of new prospects (leads generated/inquiries)
Customer satisfaction <sup>1</sup>	Conversion (leads to sales)
Customer loyalty/retention (intention) <sup>1, 2</sup>	Penetration
Likelihood to recommend	Distribution / availability <sup>1, 2</sup>
	Price
	Relative price (SOM value/volume) <sup>1</sup>
	Price premium
	Price elasticity
Behavioural customer results	Financial results
Customer loyalty / retention <sup>1, 2</sup>	Profit/profitability <sup>1, 3</sup>
Churn rate	Gross margin <sup>1, 3</sup>
Number of customer complaints <sup>1</sup>	Customer profitability
Number of transactions per customer	Customer gross margin
Share of wallet	Cash flow <sup>3</sup>
	Shareholder value/EVA/ROI <sup>3</sup>
	Customer lifetime value
Notes:	<sup>1</sup> One of the 15 most commonly used measures, according to Ambler and Puntoni (2003 as cited in Hart, 2003).
	<sup>2</sup> One of the 10 most valuable measures, according to Davidson (1999).
	<sup>3</sup> Traditional financial measure, according to Brigham and Daves (2010).

Source: Grønholdt and Martensen (2006)

Doyle (2000b) insists that the era of financial accountability is a reality facing marketers. If they do not adopt financial analysis to evaluate their strategies they will face the possibility of being ignored by top management. Marketers would therefore greatly benefit from developing the skills needed to incorporate financial analysis and, as a result, still maintain a level of control and insight into the way marketing performance should be evaluated. Finally, although shareholder value analysis is no panacea, it could increase the credibility of marketing strategies in boardrooms (Doyle, 2000b; Day & Fahey, 1988).

However, the development of measures that assess the financial performance of marketing investments has evolved sporadically and remains a largely unexplored domain (Rust et al., 2004; Morgan, Clark & Gooner, 2002; Srivastava et al., 1999). Rust et al. (2004) conducted an audit of progress in the pursuit of market productivity measures and found new research directions across seven areas. The authors consequently emphasised a common thread across all these areas, that is, the development of aggregate-level models that

link tactics to financial impact.

#### 4

### Rationale for the study

There is little debate that shareholder value analysis assists management in evaluating decisions and strategies to value creation (Pike & Neale, 1999:112). In order to evaluate and manage shareholder value creation, the focus is usually placed on the maximisation of value drivers. These are sets of performance measures impacting on the success of managerial decisions (Copeland et al., 1994:97) and include growth in (profitable) sales or revenues, an increase in operating profitability (Brigham & Daves, 2010: 379), and access to a motivated sales force and market share (Koller et al., 2010).

Even though marketing can be seen at the centre of VBM owing to the customer-focussed outlook of strategy formulation (Doyle, 2000a), marketing's lack of financial accountability has polluted its presence in the boardroom. It has been noted that, unless marketers find a way to translate performance

to top management in financial contexts, they will continue to be marginalised. Contrarily, Ambler (2003:80-83) remarks that financial measures (e.g. cash flow) provide valuable internal discipline structures, but fail to provide any useful market information on the way in which cash flow is generated. The adoption of shareholder value analysis by marketers should increase the credibility of marketing initiatives, as it will provide clarity in goal setting and performance management, and provide marketing managers with bargaining power in budget debates. As shareholder value adopts a long-term perspective on performance, pressure on marketing managers for quarterly results will thus be alleviated (Ward, 2004: 23).

In adopting shareholder value analysis, marketers would need to apply an aggregate-level model linking marketing activities to financial impact, in other words a model that incorporates non-financial marketing performance measures (such as the marketing mix) and financial performance measures (such as cash flow or turnover). This article proposes such a model.

## 5

### Research method

#### 5.1 Procedure

Although a number of factors contribute to the creation of shareholder value, the importance of sales is usually highlighted owing to their contribution to the generation of cash flow. To assess the contribution of marketing activities to shareholder value maximisation, its relationship with sales has to be considered. In the endeavour to link marketing to sales, actual financial data for both marketing expenditures and sales is needed, in other words secondary data. For purposes of this article, authentic financial data that was collected over a specific period of time was therefore scrutinised. Financial data serves as the most accurate source of data as it provides a true reflection of the interaction between sales and marketing expenditures over a specific period of time. The financial data obtained was therefore apportioned (in terms of the costs incurred) to the activities on which it was spent, in other words the 4Ps (non-financial measures).

Allocation of the marketing expenditure data was conducted based on the recommendations of the company's financial manager and head of marketing management. Two senior marketing researchers and one senior financial researcher concurred on the allocation of costs.

In the current study, a fast-moving consumer goods (FMCG) company operating in South Africa provided monthly accounting data for two products (Brand A, a convenience product, and Brand B, a premium product) extending over the 48-month period from June 2001 to July 2005. The products and timeframe were selected based on data availability. Due to the sensitivity and confidentiality of the data, the specific industry or type of products cannot be revealed.

Instead, emphasis was placed on the accuracy of data and the appropriateness of the time frame in question. The data encapsulated the period from June 2001 until the end of July 2005, a relatively stable economic period in the South African economy (SARB, 2001-2005). Economic stability is an important factor to consider as it secures a more accurate reflection of the relationship between sales and marketing expenditures as opposed to sales as the subject of economic variability. Such economic variables serve as extraneous variables that could undermine the result of the analysis between marketing expenditures and sales (Zikmund & Babin, 2007:264).

The product data investigated in this study represented the monthly financial income statement for each respective brand over the study period. Consequently, the sales units (in litres) and sales in Rands represent the 'sales-out-of-company' to resale vendors such as self-service convenience or wholesale stores. The average sales price for Brand A over the four-year period was R11.42 whereas the average sales price for Brand B over the same period was R34.21. Since two types of products are included in the analysis, it is possible to investigate whether differences are observed between the two brands.

#### 5.2 Data analysis

One of the major problems experienced with efficient performance evaluation is that the accounting data that is readily available in a company is not necessarily in the appropriate

format to be used for performance evaluation. When considering marketing performance measures, this is often the case. For purposes of this article, the shortcoming indicated was addressed by adjusting the actual financial data and reclassifying it according to marketing activities based on the marketing mix (i.e. the 4Ps) framework. Only expenditures in the income statement related to the 4Ps were included. In other words, the traditional income and expense items as classified by accounting standards were not applied. Rather, expenditures were allocated according to marketing activity. Marketing expenditures were therefore identified and classified into predetermined components according to the 4Ps. The different components of the 4Ps were organised to represent the independent variables contrasting sales as the dependent variable.

Once the data for each brand had been categorised according to the appropriate variables and an organised time series of data for each variable had been created, the empirical analysis commenced. Initially, a series of standard statistical descriptors was analysed to better understand the nature of the data for each brand. In particular, as the data encapsulated the period from July 2001 until the end of June 2005, it clearly resembled time series data. When analysing time series data there are several unique components that have to be taken into account while conducting a regression analysis. In the FMCG industry, seasonal fluctuation of product sales often occurs, as certain products are prone to higher sales in certain months of the year (Levy & Weitz, 2012:327). If a correlation between adjacent points in time exists, the residual at any point in time may tend to be similar. Such a pattern in the residuals is called autocorrelation. Autocorrelation can cause serious errors when performing tests of statistical significance based on the assumed regression model (Anderson, Sweeney & Williams, 2011:750). A preliminary investigation into the presence of autocorrelation in the data revealed Durbin-Watson statistics well below the threshold value of 2 for both brands. In other words, the assumptions of regression (i.e. independence of errors, homoscedasticity and normality) were violated (Berenson, Levine & Krehbiel, 2004).

Therefore, before linking marketing to sales, the obtained data had to be scrutinised for the presence of trend, seasonality and autocorrelation in the data. Based on the assumption that possible trend, seasonality and autocorrelation could be present in the data, the necessity to apply time series regression analysis instead of multiple regression analysis in the study was anticipated. In an ordinary multiple regression analysis between the independent and dependent variables, the unique characteristics of time series data are not necessarily taken into account. Therefore, to examine the link between marketing and sales, the relationship between marketing expenditures and sales was evaluated using time series regression analysis. In a time series regression analysis, provision is made for trend and seasonality through the use of dummy variables (Makridakis, Wheelwright & Hyndman, 1998).

## 6

### Results

The classical approach to time series analysis is based on the premise that a typical time series is composed of several components, namely secular, seasonal, cyclical and irregular variations (Daniel & Terrell, 1975:334). Accordingly, the process of deconstruction involved isolating and reconciling the distorting impact of each of these components to the extent that an accurate regression analysis was completed. The effect of trend and seasonality is mediated by creating counteracting variables that are included in the time series analysis.

#### 6.1 Brand A: sales and marketing expenditures over time

When dealing with time series data, trend, seasonality and autocorrelation might influence the relationships between variables. As depicted in Figure 1, Brand A experienced peaks in sales around November and December of every year followed by a sharp decline in January. There thus appeared to be indications of both trend and seasonality in the data, and these effects had to be incorporated before the regression analysis could be performed accurately.



**Figure 1**  
Brand A: Sales and marketing expenditures over time

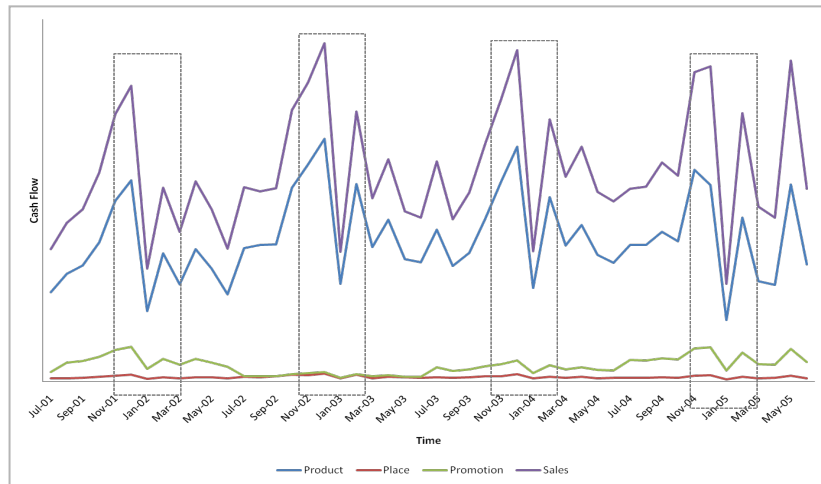


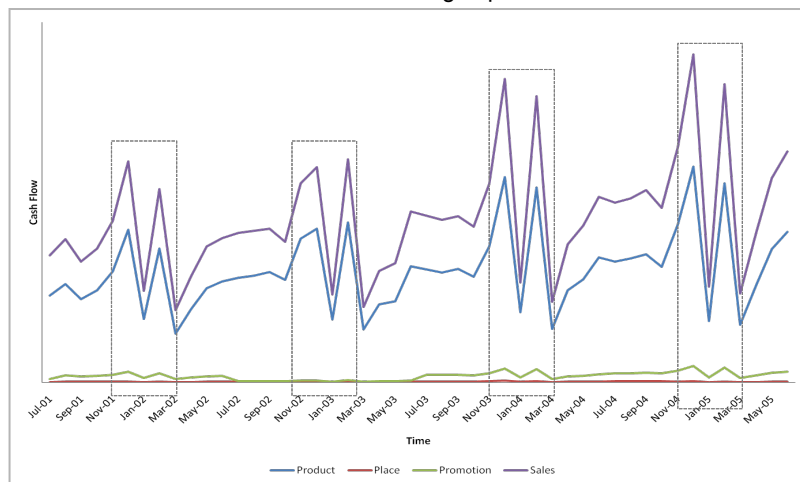
Figure 1 shows that the months of November and December are characterised by high peaks in marketing expenditures coinciding with high sales. Every year in January, the opposite effect is evident, when sales and expenditures are much lower than in other months. Albeit on a much smaller scale, promotion and distribution costs appear to follow a similar pattern. In July 2002 and July 2003, the promotional expenses for Brand A were decreased to the same level as that of distribution costs. Notably, sales reached their highest point during this period, but have appeared to slowly

decrease marginally over time since then.

## 6.2 Brand B: sales and marketing expenditures over time

As depicted in Figure 2, Brand B also experienced peaks in sales around November and December of every year followed by a sharp decline in January. Thus, there also appeared to be indications of both trend and seasonality in Brand B's data, and these effects had to be incorporated before the regression analysis could be performed accurately.

**Figure 2**  
Brand B: Sales and marketing expenditures over time



Similar to Brand A, the promotional expenditures for Brand B were decreased between July 2002 and July 2003. Contrary to sales for Brand A, sales for Brand B remained relatively constant during this period, even though the peak in sales for March 2003 were higher than sales for the same period in the previous year. From July 2003, when promotional expenditures were once again increased, the brand displayed growth for the remainder of the period under scrutiny.

The first time-series component scrutinised was trend, the effect of which was incorporated by including a dummy variable with a value running from 1 to 48 for each of the 48 months representing each of the data points. The regression analysis was repeated, including the trend independent variable to examine the unstandardised residuals of the analysis. If the residuals still violated the acceptable bounds, the next step entailed including further dummy variables to account for seasonality.

### 6.3 Time series regression analysis: Brand A

Brand A had volatile sales and was characterised by high variance in sales during the period investigated. During the process of validating the time series regression analysis, the unstandardised residuals fell within the acceptable range after a trend dummy variable was added, so no further accommodation for seasonality was necessary. The trend component of the time series thus impacted the dependent variable (sales) in a way that distorted the accuracy of the regression analysis but seasonality did not. A time series regression analysis was conducted in which product, price, promotion, place and trend were included as independent variables and sales served as the dependent variable. Table 2 shows the results of the regression coefficients for Brand A.

**Table 2**  
Time series regression Brand A

Predictor	Model summary			Anova	Coefficients		
	R	R <sup>2</sup>	Durbin-Watson	F (df)	B	t	P-value
Dependent variable: sales	0.99	0.98	1.59	692.53* (5)			
Product					0.03	1.50	0.14
Price					0.05	3.73	0.00*
Place					1.03	4.03	0.00*
Promotion					0.01	0.53	0.60
Trend					-1279.87	-11.37	0.00*

\* Significant at the 95% confidence level.

For Brand A, when a time series regression analysis was performed on the different components of marketing, the results indicated that the model explained 98 per cent variance in sales ( $F(5) = 692.53$ ,  $p < 0.05$ ). With the introduction of trend into the analysis, the Durbin-Watson statistic is also closer to 2 (changed from 1.07 to 1.59), which means that autocorrelation is no longer a significant factor in the analysis. The next step was therefore to understand the interaction between the independent variables included and sales.

The results of the time series regression analysis indicated that, for Brand A, place and price explained unique variance in sales ( $p <$

0.05). At a 95 per cent level of confidence, neither promotion nor product appeared to account for unique variance in sales. As anticipated, trend also explained unique variance in sales ( $p < 0.05$ ). The nature of the significant relationship between distribution costs and sales was positive. In other words, assuming that all things remain unchanged, if the company were to invest more resources towards increasing the distribution range of Brand A, the sales for the brand would also increase. There was also a significantly positive relationship between price and sales. Price elasticity is a commonly used measure of price sensitivity, and describes the percentage

change in quantity sold divided by the percentage change in price. Levy and Weitz (2012:374) explain that consumers of a product are viewed as price insensitive (inelastic) when a 1 per cent decrease in price results in less than 1 per cent increase in the quantity sold. Alternatively, the consumers of a product are viewed as price sensitive (elastic) when a 1 per cent decrease in price produces more than a 1 per cent increase in the quantity sold. The consumers of Brand A therefore appeared to be price insensitive, as an increase in price did not negatively impact on sales.

The results also indicated that trend explains unique variance in sales. Since trend incorporates exogenous factors like economic growth, it is possible that, if economic growth declined and consumer budgets became further stretched, consumers would trade down to cheaper alternatives like Brand A. A negative relationship between trend and sales for the particular brand was detected. Ultimately, the results for Brand A indicated that a high proportion of sales variance was explained by the place and price elements, as well as the trend in the data. According to retail theory, the pricing and location of products are essential when shopping for convenience products (Levy & Weitz, 2012:183). As Brand A was a convenience product, the results obtained in the time series regression were supported.

#### **6.4 Time series regression analysis: Brand B**

Brand B was characterised by a relatively low variance in sales but a high autocorrelation between sales months. As depicted in Figure 2, Brand B appeared to be sensitive to seasonality, with high peaks in the summer of every year. As a first step in the regression analysis process, the trend dummy variables were included in the time series analysis to incorporate the effect of secular trend. However, the inclusion of trend did not sufficiently account for error residuals, so further inclusion of dummy variables that accounted for the seasonal component was needed. In the case of Brand B it was thus necessary to include dummy variables for both the trend component and seasonal component of the time series. A dummy variable for each of the months included was assigned a variable

of either one or zero respectively to account for seasonality. Thus, a time series regression analysis was conducted where the product, price, promotion, place, trend and monthly dummy variables were included as independent variables, and sales served as the dependent variable. Table 3 shows the results of the regression coefficients for Brand B.

Regarding Brand B, when a time series regression analysis was performed on the different components of marketing the results indicated that the proposed model explained 99 per cent of the variance in sales ( $F(16) = 427.00, p < 0.05$ ). Once again, the introduction of trend and seasonality in the analysis brought the Durbin-Watson statistic closer to 2 (changed from 0.07 to 2.2), which meant that autocorrelation was no longer a significant factor in the analysis. The next step was therefore to understand the interaction between the independent variables included and sales.

In the case of Brand B, it appeared that only the product element of the 4Ps explained unique variance in sales ( $p < 0.05$ ). At a 95 per cent level of confidence, not one of the promotion, place or price components explained the variance. In this case, both trend and seasonality explained unique variance in sales. From the results, it was evident that not only was the type of product in high demand, but sales were seasonal (except for the month of February) and followed a trend.

In the case of Brand B, the unique variance in sales was explained by the trend, seasonality and type of product. Even though a high percentage of variance in sales was explained by the independent variables, unique variance in sales was better explained by trend, seasonality and the product type. If the analysis had been performed by simply adopting a multiple regression analysis, detail pertaining to the effect of trend and seasonality would have been lost and a misinterpretation of the results would have followed. Instead, the conclusion with regard to the 4Ps in the case of Brand B was that only the product type explained unique variance in sales. Retail theory states that consumers would expend extra effort when buying premium products, and will not accept substitutes (Levy & Weitz, 2012:183). Brand B was a premium product, and the results obtained from the time series

regression analysis were thus supported. Since sales are considered to be one of the major value drivers in the value-based management context, the increases in sales levels achieved

by means of improved marketing tactics should contribute to the creation of shareholder value (Koller et al., 2010:435; Damodaran, 2001:802).

**Table 3**  
Regression results Brand B

Predictor	Model summary			Anova	Coefficients		
	R	R <sup>2</sup>	Durbin-Watson	F (df)	B	t	P-Value
Dependent variable: sales	0.99	0.99	2.20	427.00 (16)			
Product					0.03	2.00	0.05*
Price					0.00	-0.04	0.97
Place					0.04	0.28	0.78
Promotion					0.01	0.86	0.40
Trend					-1814.72	-7.26	0.00*
Month 1					-109172.56	-4.96	0.00*
Month 2					-10244.14	-1.15	0.26
Month 3					-132781.79	-5.49	0.00*
Month 4					-111338.27	-5.78	0.00*
Month 5					-94040.86	-5.60	0.00*
Month 6					-78768.27	-5.61	0.00*
Month 7					-80822.49	-5.49	0.00*
Month 8					-76604.14	-5.39	0.00*
Month 9					-79671.06	-5.51	0.00*
Month 10					-81448.02	-5.33	0.00*
Month 11					-47687.35	-4.13	0.00*

\*Significant at the 95% confidence level

## 7

### Concluding remarks

At the outset of the study, the focus on marketing accountability and the transparency of marketing return on marketing investment was considered. In essence, if marketers were to expand their skills base to include financial analysis of the actions and tactics that they employ, they would be better equipped to engage top management in a meaningful dialogue about the role of marketing investment within a company. Baker (2002:317) proposes that the marketer's goal should be to find a profitable mix that combines elements of the 4Ps and to conform these elements to market forces so that the specific product category can impact company performance (Levy & Weitz, 2012:183-184).

In this study, the results of time series regression analysis of marketing expenditures and sales revealed that the nature of the

relationship between these components and sales is dependent largely on the classification of the product, in other words premium versus non-premium brands. Although results are supported by the theory of product classification, whereby product is an important factor for premium products, and price and place for non-premium products (Kotler & Keller, 2012: 349), it seems that trend and seasonality also play a crucial role in generating sales. It would appear that sales of premium brands are influenced by trend and seasonal fluctuations, while sales of non-premium brands are influenced only by trend.

Owing to the nature of this secondary data analysis, there were inherent limitations to the study. The analysis of the data was dependent on the characteristics of the data supplied. In addition, the data available did not encompass all of these activities and, as such, the 4P components included in this study reflected the activities or expenditures available instead of

the complete activity set. Specifically, no description of the actions included as promotional expenditure was available. Promotional expenditures encompass a wide variety of above-the-line and below-the-line marketing actions, and some of these actions are likely to have a greater impact on sales than others. In future research, more clarity will be generated around the impact of promotion on sales if promotional expenditures can be broken down further to address specific actions. Further analysis on the short- as well as medium- to long-term effects of promotional expenditures on brand equity will shed more light on the process during which promotion impacts sales.

The optimal allocation of resources to the different components of the 4Ps is enabled through an understanding of the unique variance created in sales by such components. Marketers should equip themselves with an understanding of managerial accounting principles, specifically activity-based costing and the guidelines for cost allocation amongst these components. In turn, marketers will be able to analyse which of the components are the most lucrative for investing resources in order to drive profitable growth.

Once the relationship between promotion and brand equity is better understood, the subsequent relationship between brand equity

and sales could be further explored for a better understanding of the interaction between promotional marketing expenditures and sales. Ideally, such an investigation would also need to be conducted over an extended period, since brand equity could take a long time to be nurtured and, if one is to fully understand whether the investment in brand equity is successful, the appropriate time frame would have to be considered. The further exploration of the promotional expenditures component is crucial to understanding the dynamics between the short-, medium- and long-term effects of different promotional activities and sales.

The understanding of the unique sales variance created by the different components of marketing expenditure serves as a first step to understanding the impact of marketing on the bottom line. The development of this body of theory should strive to quantify marketing investment and return on investment in a way that would allow marketers to speak a financial language in boardrooms. Ultimately, the research approach applied in this article serves as a starting point from which to build a more robust measurement tool incorporating financial and non-financial marketing performance measures that will serve to justify investment in the marketing of a brand.

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