The Contribution of Changes in Advertising Expenditures to Earnings and Market Values

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We examine the asset value of advertising expenditures for a sample of 320 firms with reported advertising expenditures for each of the 10 consecutive years ending in 1994. We find that, depending upon the industry, changes in advertising expenditures are significantly associated with earnings up to five years following the year of the expenditure. Furthermore, the asset values are significantly associated with the market values of the firms. Across all industries, the asset value of advertising expenditures appears to have a 3-year life with the greatest value on the current year and declining value in subsequent years. Asset values are found to be longest lived in the consumer products and industrial products industries and shortest lived in the sales and services industry. J BUSN RES 2000. 50.149–155. *© 2000 Elsevier Science Inc. All rights reserved.*

Advertising is one of the most visible and least understood of a firm's marketing expenditures. Budgets over $60 billion were allocated to advertising media by the top 200 consumer products advertisers in 1995. In that same year, Proctor & Gamble alone spent $2.7 billion on advertising Leading National Advertisers, 1996), and business-to-business advertising exceeded $11 billion for the category (Kosek, 1996). Firms that allocate large amounts of their resources to advertising expect their expenditures to contribute, ultimately, to the financial performance of the firm. In this study, we examine the effect of advertising expenditures on financial performance by measuring the contribution made by year-to-year differences in advertising expenditures to the asset values and subsequent market values of publicly traded firms. Relations among advertising and financial performance are investigated over time and across industries.

For advertising expenditures to have asset value, they must result in an expected future benefit to the firm. The benefit takes the form of future cash flows, which derive from future sales. Future sales are influenced by advertising expenditures, which alter customer preferences for particular products or vendors. Evidence for the asset value of advertising expenditures is mixed. While some studies support the notion of advertising asset value (e.g., Peles, 1970; Hirschey, and Weygandt, 1985; Green, Barclay and Ryan, 1995; Chauvin and Hirschey, 1993; Lev and Sougiannis, 1996), others do not (e.g., Bublitz and Ettredge, 1989; Erickson and Jacobson, 1992; Aaker and Jacobson, 1994). None of the studies directly measures the future effect of advertising expenditures. Our first goal therefore is to extend prior research by establishing a link between advertising expenditures and future earnings. Connecting current-year advertising expenditures with future earnings provides a reasonable estimate of the asset value of advertising expenditures. The relation between asset and market value is well established (Ball and Brown, 1968), and a connection should exist between items contributing to asset value—in our case advertising expenditures—and market value. Therefore, our second goal is to examine whether advertising assets, as derived from the association between advertising expenditures and future earnings, are associated with firm value.

This article makes four contributions to the literature on the asset value of advertising expenditures. First, it looks at multiperiod rather than single-period effects of advertising. Studies in our review used single-period advertising models, which limit generalizability of their results. The second contribution is derived from the first; by using a multiperiod model, we can estimate asset value directly from future earnings rather than infer it from the size of single-period coefficients relating advertising and market value. Third, we avoid a logical inconsistency that arises when advertising asset value is implied from its relation with market value in a single regression model. Because market prices are determined largely by reported financial variables, it is circular to suggest that those same variables are derived from market values. Fourth, this study

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associates advertising asset value with market values after deriving direct effects. This procedure provides added confidence in results supporting the asset value of advertising.

Prior Research

Research related to the asset value of advertising can be categorized into studies of the direct benefits of advertising, studies of the associations between firm market value and advertising intensity, and studies of associations between stock returns and advertising intensity.

Direct Benefits

Direct benefit studies measure the relation between advertising expenditures and hypothesized future benefits. Peles (1970) reported an association between current-year sales and advertising expenditures from up to 3 years prior to the current year. More recently, Green, Barclay, and Ryan (1995) examined determinants of long-term performance of entrants into the software industry and found significant and long-lived benefits to advertising among word processing suppliers. They found no future benefits, however, for entrants in the business graphics market, a result they attributed in part to the structural differences between the two markets during their product introduction phases.

Tellis and Weiss (1995) found no current period effects from advertising, but a number of limitations restrict generalizability of the study's results. The data were restricted to one product category (laundry detergent) and television advertising—a small subset of the companies and industries that rely on various advertising media to produce long-term benefits. Data were also heavily biased toward one company, Proctor and Gamble, which provided 50% of the purchases and television exposures in the sample. Additionally, the time frame (just over 1 year) was too short to isolate long-run effects, which may be present if direct effects, such as buyer awareness and brand loyalty, extend into future periods.

Market Value

Market value studies are based on the efficient market hypothesis (EMH) (Fama, 1970), which suggests that a firm's market value is "the present value of all expected cash flows from a firm's assets and, at any given time, reflects all the available information about a firm's current and future profit potential" (Agrawal and Kamakura, 1995, p. 57). In the context of the EMH, if market participants value advertising based on advertising's future benefits, the relation can be detected statistically by coefficients of association between current advertising expenditures and current market values that are greater than one. Coefficient estimates reported by Hirschey and Weygandt (1985), Chauvin and Hirschey (1993), and Lev and Sougiannis (1996), all of which exceed 1.0, support the notion that current advertising expenditures represent future market value.

Associations between Stock Returns and Advertising Intensity

Studies of association between stock returns and advertising intensity also rely on the EMH. Because market value is assumed to reflect all publicly available information, an association between price changes (returns) and advertising should include the market's perception of the creation of new value from advertising expenditures. Recent research conducted in this area shows either a negative association (Bublitz and Ettredge, 1989) or no association (Erickson and Jacobson, 1992; Aaker and Jacobson, 1994) between advertising and market returns when earnings changes or returns on investment are included as explanatory variables. Returns studies, however, probably provide a weak test of the value of advertising. Earnings changes are a poor proxy for changes in market participants' expectations of future profitability; only "unexpected" changes in future cash flows would show up in associations with current-year returns.

Estimating the Advertising–Earnings Relation

The advertising-earnings relation is estimated from the fundamental relation between assets and the earnings they generate. For accounting purposes, assets generally are categorized as tangible (i.e., assets with physical substance) or intangible (i.e., assets without physical substance). Following Lev and Sougiannis (1996), we show the asset-earnings relation as [Eq. (1)]:

$$\text{Earnings}_{it} = g(\text{TAssets}_{it}, \text{IAssets}_{it}), \quad (1)$$

where g represents the earnings process, TAssets the tangible assets, and IAssets the intangible assets of firm i in year t.

Although earnings, tangible asset, and certain intangible asset (e.g., purchased goodwill) values are recorded by a firm's accounting system, other intangible assets are not. Accounting regulations require both advertising and research and development (R&D) expenditures to be expensed as incurred. If, however, advertising and R&D expenditures contribute to future earnings, it follows that earnings in any particular year are determined to some extent by both prior-year and current-year expenditures. If so, equation 1 can be expanded to[Eq. (2)]

$$\text{Earnings}_{it} = g(\text{ATGassets}_{it}, \text{RDassets}_{it}, \text{ADasset}_{it}), \quad (2)$$

where ATGassets equals the tangible and intangible assets recorded by firm i's accounting system, RDasset equals the R&D asset and ADasset equals the advertising asset.

By definition, the asset value of advertising and R&D expenditures is the contribution of each year's expenditures to future earnings. Lev and Sougiannis (1996), for example, show the R&D asset (RDasset) as $\Sigma\eta_{i,t-k}{*}RD_{i,t-k}$ where $\eta_{i,t-k}$ is the contribution of a dollar in R&D expenditure in year $t - k$ ($k = 0, \ldots, n$) to earnings in year t. We also express the R&D asset as the sum of yearly asset values and expand the Lev and Sougiannis definition to advertising assets (because of data restrictions, Lev and Sougiannis use current-year advertising

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