

ASSET VALUE OF UK FIRMS ADVERTISING EXPENDITURES

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ABSTRACT

This paper empirically investigates the relationship between advertising expenditures and the market value of firms using a valuation model and a sample of UK firms for the period between 1998 and 2003. The research findings indicate that advertising expenditures are significantly associated with increases in market value, suggesting that capitalizing advertising expenditures is appropriate. These results improve our understanding of the gap between the market value and book value of firms by focusing on intangible assets (R&D and advertising), which do not appear on financial statements. One of the major contributions of this study is that it adds to the very limited research available on intangibles in the UK. All in all, this paper should help to improve the understanding of the role that advertising investments play in firm valuation in the UK market. This paper provides useful guidance to standard setters on accounting for such intangible investments

Key words; Advertising, Intangibles, Market Value, Valuation, and Capitalization

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I. INTRODUCTION

In recent years there has been a growing controversy on the accounting treatment of intangible investments such as goodwill, advertising, research and

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development expenditures (R&D) and others. Since intangible resources constitute an increasingly important part of modern economies, accounting for intangibles has become an increasingly important problem facing the accounting profession, especially standard-setting organisations.

There is a large body of literature in economics, finance and accounting concerned with the valuation relevance of intangible investments. However, most of this prior literature has used US data and very few studies of the market value of intangibles use UK data. The literature for UK firms is considerably more limited both in the number of papers and in the time span of data analysed. Evidence on the relationship between the advertising activity of UK firms and market value is more diminutive² than on R&D: as far as I am aware, only Green, Stark and Thomas (1996), Nixon (1997) and Stark and Thomas (1998) have highlighted research and development expenditures in their research, and Shah and Stark (2004, 2005) have provided some evidence on the valuation relevance of advertising. One main reason for this limited research may be the unavailability of advertising data as in the UK. Firms do not disclose advertising expenditures separately in their financial reports³. As per existing practice, UK firms charge advertising expenditure to profit and loss accounts in relevant years. In the UK, no relevant Financial Reporting Standard (FRS) exists regarding reporting of advertising expenditures.

An understanding of the valuation implications of advertising expenditures would be useful for both academics and policy makers. If the valuation relevance of such advertising investments were recognised in the UK capital market, it would resolve the controversy concerning the treatment of these expenditures in companies' annual reports.

This study endeavors to examine empirically the association between advertising expenditures and the market value of firms by using a UK sample for the period from 1998 to 2003. The analysis shows a strong positive association between advertising expenditures and market value.

The rest of the paper is set out as follows. Section 2 briefly reviews relevant previous research. Section 3 discusses data and the research approach, and estimation results are presented in section 4. Finally, research findings/conclusions are discussed in section 5.

A. Previous Research

There is little empirical evidence on the market valuation of advertising expenditures in the UK. However, empirical evidence exists on advertising expenditures

² To my knowledge, there is no published study on the valuation relevance of advertising for the UK.

³ Paton (2002) argues that (p. 432) '*Good quality published data on firm level advertising in the UK is virtually non-existent.*'

in the US. These US studies acknowledge that advertising investments have impacts on markets directly and indirectly. A moderate body of literature, for example by Hirschey (1982), Hirschey and Weygandt (1985), Hirschey and Spencer (1992), Chauvin and Hirschey (1993), and Chauvin and Hirschey (1994) among others, provides empirical evidence on the positive association between investments in advertising and subsequent gains in companies' earnings and stock prices. However, these US findings await verification in future studies of data from other countries.

In his study, Abdel-Khalik (1975) examines the effects of advertising on sales revenues by employing a sample of firms from the food, auto, tobacco, soap and cleaners, and drugs and cosmetics industries for the period from 1955 to 1973. He finds long-lived effects of advertising on sales in the food and the drugs and cosmetic industries and short-lived effects for the rest of the groups, and on the basis of his empirical analysis, he argues for different treatments of the promotional costs of firms in different industries.

Hirschey (1982) studies the intangible aspect of advertising and research and development expenditures in a cross-sectional valuation model. He finds a significant and positive intangible aspect for advertising and research and development expenditures. Similarly, Hirschey and Weygandt (1985) find a significant and positive association between advertising and research and development expenditures and the market value of firms. They also suggest that these expenditures should be capitalised and then amortised rather than treated as expense items.

Contrary to the results of Hirschey (1982), and Hirschey and Weygandt (1985), which conclude that advertising and R&D are long-lived; Bublitz and Ettredge (1989) only find evidence of longevity for R&D and not for advertising. The results of their study classify advertising as an expense and R&D as an intangible asset.

Connolly and Hirschey (1984) expand on Hirschey (1982) by investigating the relation between R&D, market structure and a market-value-based measure of profits. They estimate a valuation model for a sample of 390 firms from the 1977 "Fortune 500". Their estimation results overall document a positive valuation effect of R&D and advertising and favour the 'intangible capital' view of R&D and advertising.

Hirschey and Spencer (1992) examine size effects in the valuation of fundamental factors for the years 1975-1990. They name cash flow, growth, risk, research and development, and advertising expenditures as the fundamental factors for the determination of the earnings process. For the examination of size

effects, they divided their sample on the basis of size into small, medium and large firms. They find that firm size affects the influences of fundamental factors. They argued that advertising has valuation relevance only for large firms and research and development affect the market value for firms of all sizes. They also find that the relationship between research and development expenditures and the market value of firms varies with firm size.

Chauvin and Hirschey (1993) examine the association of advertising and research and development expenditures with the market value of firms for the years 1988-1990. They divide their sample on the basis of size and manufacturing vs. non-manufacturing firms. Their analyses highlight the fact that firms in specific industries/groups have different characteristics, therefore the valuation implication of advertising and research and development may be different. They find differences in the valuation implications of advertising and R&D according to firm size. Additionally, they also find the valuation relevance of these measures for manufacturing and non-manufacturing firms. In short, advertising and R&D expenditures are valuation relevant in the majority of their analyses.

In the UK, Shah and Stark (2004) investigate the value relevance of the advertising expenditures of UK firms as captured by ACNielsen MEAL⁴ for the period 1990-1998. The results of the study show a significant positive influence of advertising expenditures on the market value of firms. Shah and Stark also investigate the effects of firm size and sector by splitting their pooled sample into sub-samples of small and large firms and of manufacturing and non-manufacturing firms. They find advertising expenditures to be valuation relevant for large and non-manufacturing firms.

In another study, Shah and Stark (2005), by employing valuation models and using major media advertising expenditure data of a balanced panel of 35 UK firms (who are persistent major-media advertisers) over the period 1990 to 1998, examine the valuation relevance of advertising expenditures. They investigate whether advertising expenditures help in forecasting future earnings and are associated with market value. They find major media advertising expenditures valuation relevant and useful in predicting future values of earnings.

The above literature illustrates that the valuation relevance of advertising has been the subject of intensive investigation in the US but there have been

⁴ A commercial source for advertising-related information in the UK.

relatively fewer UK studies on the subject⁵. Previous research provides the evidence that the market is capable of determining value relevance from advertising expenditures. However, this previous research, such as that by Hirschey (1982), Chauvin and Hirschey (1993), and Hirschey and Weygandt (1985), failed to include both earnings and book value explanatory variables, leaving their models seriously mis-specified. Rees (1997) casts doubt on the results of such studies.

The present study contributes to the prior research in several ways. One of the major contributions of this study is that it adds to the very limited research available on intangibles in the UK. This study helps to understand better the extent to which advertising investments play a role in firm valuation in the UK market. The results of this study improve our understanding of the gap between market value and book value by focusing on intangible assets (R&D and advertising), which do not appear on financial statements. This study does not focus on a specific industry or sector but covers a wider set of industries or sectors, thus making its findings more robust. By providing empirical evidence on the information content of advertising expenditures, this study alleviates some of the ambiguity associated with prior research and provides more comprehensive understanding of the issue. This study uses a valuation model that includes both balance sheet and income statement components to explain the market value of firms⁶ as well as control for the valuation effects of other intangibles (such as R&D). The evidence from this study on the value relevance of advertising investments combined with the evidence from previous studies provides useful guidance to standard setters on accounting for such intangible investments.

B. Research Approach

The market value of the firm is regressed on current advertising expenditures and other explanatory variables such as R&D expenditures, book value, earnings, dividends and capital contributions. The model to be estimated is⁷:

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \alpha_3 RD_{it} + \alpha_4 AD_{it} + \alpha_5 D_{it} + \alpha_6 CC_{it} + \xi \quad (1)$$

where the subscript 'it' denotes firm i at time period t, MV is market value, BV is book value, E is earnings, RD is research and development expenditures, AD

⁵ Advertising in particular has not attracted a large amount of research. This may be due to the lack of information on advertising expenditures and reluctance of UK companies to disclose information on their marketing/promotion efforts, among others.

⁶ According to Ohlson (1995), the market value of a firm's equity might be explained better by a model that includes both parts of financial accounting: a stock concept of value and a flow concept of value.

⁷ This model is similar to that used by Akbar and Stark (2003), except for advertising expenditures.

advertising expenditures, D is dividend, CC is capital contributions and ξ is the error term⁸.

This study uses the Ordinary Least Squares (OLS) technique and estimates model 1 for the pooled sample for the period from 1998 to 2003. Pooling cross-sectional data was necessary in order to reduce the multicollinearity between explanatory variables and in order to increase the sample size. The regression coefficients reported for Model 1 are estimated using OLS regression based on White's (1980) heteroscedasticity consistent standard errors and covariance estimates. Their associated probability values under a two-tailed t-test are also reported. To delete extreme values from the sample, the most generally accepted outlier deletion criterion (deletions of top and bottom 0.5% of observations) is applied. Further, in order to eliminate any size-related naturally existing correlation in the data and also to relieve the problem of size-induced heteroscedasticity in the error term, book value (BV) and opening market value (OMV) were used as deflators to deflate the model.

II. DATA COLLECTION AND SAMPLE

This study used Datastream as the major data source and extracted all relevant data for variables except for advertising from these databases. Advertising data was obtained from Nielsen Media Research, as the same was not available from Datastream. Advertising expenditures comprise major media expenditures, i.e., newspapers, radio, cinema, TV and outdoor. The data used for this study were not without limitations due to the scarcity of published reliable data on advertising in the UK. The advertising data are obtained from a particular non-financial source⁹, Nielsen Media Research. The organisation monitors advertising activity across all major consumer media (such as TV, radio, outdoor, press, cinema, and direct mail) in the UK. If a firm has not advertised on the media they monitor, it will not appear on their database. However, their database also covers those firms that ran advertising campaigns occasionally or in bursts during the sample period. Nielsen Media Research provides month-level data, which can be analysed against advertiser, brand, category, agency, and media. The advertising data/reports provided by Nielsen Media Research for the period from 1998-2003 are based on their full Multimedia database and show, in Excel format, the sample firms ranked down the side with individual months (January to December) across the top.

Nielsen Media Research, in certain cases, provided divisional data for firms, which were aggregated and traced through to firms for each month. To

⁸ See Appendix 1 for sources of each variable used and measured.

⁹ Nielsen Media Research is a relevant and reliable non-financial source and is used by researchers, advertising agencies, and manufacturers, among others.

identify annual advertising expenditures by firms with different financial year-ends in the sample, monthly advertising data were aggregated to create an annual figure. For example, if a firm had a financial year-end in June 2003, the total advertising expenditures for the last six months (from July to December) of 2002 were added to the total advertising expenditures of the first six months (from January to June) of 2003 to work out the annual advertising figure for 2003 for the respective firm. The same procedure was followed for other financial year-ends.

To avoid survivorship bias, dead companies are also included in the sample for the period. A range of companies (from small to large) from a number of different industry sectors is represented in the sample. Financial and insurance firms were excluded from the initial sample for standard reasons.

Firms in the sample in each annual cross section (from 1998 to 2003) must satisfy the following restrictions:

1. All the data for the variables must be available;
2. Closing book value must be positive;
3. The firm should be from the non-financial sector;
4. The firm should be listed on the LSE.

Tables 1 and 2 provide descriptive statistics and correlation matrices of pooled annual cross sections. The descriptive statistics reveal some degree of skewness in most of the variables¹⁰. The maximum and minimum values, the median and mean values of each variable are presented in Table 1 and suggest that the overall sample appears to be heavily concentrated at the lower end of the distribution for most of the variables. In a non-skewed distribution, the mean, median, and mode are equal; however, differences exist in these measures in the data. Table 2 presents the matrix for the correlations between all the variables used in the analysis. The correlation statistics for all of the variables are moderate, which suggests that the sample does not suffer a significant multicollinearity problem.

III. ESTIMATION RESULTS

AD is the variable of main interest in this analysis. The estimation results presented in Table 3 reveal that the pooled coefficient of AD is positive and statistically non-zero. Thus, the null hypothesis ($\alpha_4 = 0$) can be rejected at the 1%

¹⁰ As per Rees (1997), skewness is a normal feature of cross-sectional data.

level of significance. The estimated pooled coefficient of AD is 12.36 when BV is the deflator and 5.10 when OMV is the deflator. Hirschey (1985) reports AD coefficients of 5.55 and 7.55 for two different model specifications, and Chauvin and Hirschey (1994) find and report an AD coefficient of 6.20. In the UK, Shah and Stark (2004 and 2005) report AD coefficients of 7.33 and 8.98 respectively. These findings overall suggest a positive and statistically significant effect of AD on market value.

The pooled coefficient of RD for each of the two deflators is positive and statistically significant at the 1% level of significance. As the pooled coefficient of RD is significantly non-zero, the null hypothesis ($\alpha_3 = 0$) is rejected at the 1% level of significance. The coefficient values for RD are 8.43 (when BV is the deflator) and 4.33 (when OMV is the deflator), which is consistent with previous similar studies. Thus, Chauvin and Hirschey (1994) report an RD coefficient value of 7.34, Hirschey (1985) reports coefficients of 6.81 and 7.07 for two different model specifications, Green et al. (1996) report a coefficient value of 4.84, and Hirschey (1982) reports a value of 3.15. Shah and Stark (2004) report a coefficient value of 9.51 for their pooled sample of UK firms. In another study, Shah and Stark (2005) find and report a higher coefficient value of 11.01 for RD. Overall, the results of this study suggest a positive and statistically significant association between market value and RD.

The results of equation 1 show that other variables in the regression, i.e., BV, E, D, and CC, have significant and consistent effects on market value. The coefficient of BV is positive and statistically significant at the 1% significance level for both deflators for the pooled sample. Significant effects for E on market value were also found: the pooled coefficient of E is positive and significant at the 1% level.

The results also show a positive and significant association between market value and dividends (D). The pooled coefficient of D is positive and significant at the 1% level of significance for both deflators, and the pooled coefficient of CC is negative and significant at the 1% level for both deflators. Overall, these results suggest that BV, E, D, and CC each have a consistent significant influence on market value.

The success of the model in predicting the values of the dependent variable is captured in the R^2 statistic (also known as the 'goodness of fit' statistic). R^2 measures the proportion of the variation in the dependent variable explained by the independent variables. The value relevance of a model is judged by its explanatory power regarding stock prices and/or stock returns as specified. The empirical results of the present research report an R^2 of 0.21 when

BV is the deflator and -0.35 when OMV is the deflator. These results indicate that the regressions explain a good portion of the variance in market value. In comparable studies, broadly similar levels of explanatory power are reported. Thus, Hirschey (1982) reports an R^2 of 0.50, Hirschey (1985) reports values for R^2 between 0.30 and 0.32 for different specifications of models used, Chauvin and Hirschey (1994) report an R^2 of 0.59, Hirschey and Weygandt (1985) report a statistic of 0.31 and Green et al. (1996) 0.30. In the UK, Shah and Stark (2004 and 2005) report values for R^2 of 0.28 and 0.51 respectively.

IV. CONCLUSIONS

The overall results of this study suggest that the UK market recognises advertising investments as assets and incorporate information relating to this variable in the valuation of the firm. In view of the evidence provided by this and prior studies, investments in advertising should be capitalised and amortised over their estimated economic lives.

These findings have significant implications for future standard setting in the UK and other countries where such investments (e.g. R&D and advertising) are generally expensed as incurred, leading to downward bias in the value of assets, current earnings and shareholder equity. The financial statements of companies may not reflect the true value of the firm because of a widening gap between accounting book values and market values due to intangible assets not being capitalised. The main limitation of this research is the source of the advertising data. As advertising data is not available from accounting data sources, it was obtained for this study from Nielsen Media Research¹¹. As this is a non-accounting data source, it is therefore difficult to rely thoroughly on this advertising data. This possible imprecision may have affected the estimation results.

Previous research investigating the effectiveness of advertising expenditures has mainly considered total advertising expenditures at different points in time assuming homogenous effects of advertising regardless of the type of advertising message and /or the medium used to communicate it. Each advertising medium varies in terms of the information it provides, the costs associated with it, the number of repetitions of the messages and so on. Future research should therefore look at differential media impacts in more depth by splitting total advertising expenditures into different media advertising expenditures.

¹¹ A commercial non-financial data source.

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APPENDIX

Variable Definitions and Measurement

1. **Market Value, MV**, of equity is measured as the share price on a specific date multiplied by the number of ordinary shares in issue. It is measured six months after the balance sheet date.
2. **Book Value (Opening or Closing), BV**, is measured as the sum of shareholders' equity capital and reserves (Datastream item no. 305).
3. **Earnings, E**, are measured as profit for the financial year as reported in the financial statements (Datastream item no. 1087).
4. **Advertising Expenditures, AD**, are measured as the expenditures made on advertising in the financial year and include major media expenditures, i.e., television, press, radio, cinema, outdoor (Nielsen Media Research).
6. **Research and Development Expenditures, RD**, are measured as R&D expense recognised in the income statement (Datastream item no. 119).
7. **Dividend, D**, is measured as net amounts paid on ordinary shares, and amounts paid on participating preference shares (Datastream item no. 187).

8. Capital Contributions, CC, are measured as the negative of the sum of the equity raised for acquisitions and cash (Datastream item nos. 412+414).