A COMPARATIVE STUDY OF STRATEGIC PERFORMANCE FACTORS IN ACTUAL AND SIMULATED BUSINESS ENVIRONMENTS

William C. House, University of Arkansas
Herman S. Napier, University of Arkansas

Performance measures such as return on assets, return on equity, and market value/common equity have been widely used in both actual business and simulated business environments. Woo and Willard (983) have slated that such measures of profitability as return on assets and return on equity are essential to measurement of strategic performance, despite their many limitations (Dearden, et al). Drucker (1988) states that profitability related to the use of company resources should be measured as the product of profit margin multiplied by capital turnover and that while it may be easier to increase profitability by increasing turnover, both profit margin and turnover should be increased in order to achieve the best balanced results.

The early PIMS study (e.g., Schoeffler, Buzzell, and Heany, 974) indicated that factors such as market share, R&D outlays, investment intensity (assets/sales) and company size influence profitability as measured by return on investment. In a related study, House and Napier (1986) found that net income/sales, sales/assets, and assets/equity were significantly related to return on equity while market share and R&D expenses/sales revenues were not.

Some studies suggest that the importance of specific performance factors may vary from environment to environment, but few studies have been designed to determine whether and to what extent such factors influence resulting performance measures in different environments. A comparison of such factors could help to indicate not only which factors are more important than others in specific environments but also whether factors important in actual environments *are* also important in simulated business environments.

Each of the three performance measures mentioned (i.e., return on assets, return on equity, market value/common equity) can be broken down into two or more basic components. Return on assets can be subdivided into two elements:

NET INCOME/SALES X SALES/ASSETS = NET INCOME/ASSETS

In the same manner, return on equity can be broken down into three major components for more detailed analysis:

NET INCOME/SALES X SALES/ASSETS K ASSETS/EQUITY = NET INCOME/EQUITY

Finally, it market value/common equity is analyzed to detail, it can be seen that it includes the above factors while adding the price/earnings (i.e., market *val*ue/net income) ratio.

NET INCOME/SALES X SALES/ASSETS X ASSETS/EQUITY X MARKET VALUE/NET INCOME = MARKET VALUE/EQUITY

Thus, all four of the basic performance factors (i.e., ratios) mentioned above can logically be related to market value/common equity, three of the tour to net income/equity, and two of the tour to net income/assets. In addition, while tot components of the formulas described above, market share, R&D expense/sales revenues and advertising expense/sales revenues may also be related to one or more of these three performance measures.

Among quantitative factors, market share is a relative measure of the share of industry sales a company has obtained versus Its competitors in a specific market segment - Advertising expense/sales revenues is a measure of the proportion of the sales dollar devoted to advertising expenditures while R&D expense/sales revenues gives an indication of the amount of company resources being devoted to research and development activities ..ri relation to company sales revenues. Wet income/sales revenues indicate the extent to which organizations can generate profits from a given level of sales while sales/assets is a measure of the efficiency with which company assets are used to generate sales revenues. Assets/equity permits measurement of the amount of leverage a company is using to generate revenues.

STUDY METHODOLOGY

For comparative purposes, a sample ot 18 manufacturing companies was selected from the FORTUNE CORPORATE REPUTATION STUDIES for 984 and 985. This sample included 0 food processing arid tobacco companies and 8 soap and cosmetic companies. Fourteen simulated companies were selected from two business policy classes which involved senior level students playing the Keys and Leftwich Multinational Management Game. Data for two consecutive years were utilized for this study. As was the case for the actual business environment, the simulated companies competing in the business game represented two different industries. In each environment. market snare was calculated based on the subgroup in which each company was classified, providing two market subgroups in each environment.

In order to determine whether specific factors (i.e., rat irs) have a significant impact on return on assets, return on equity, and market value/common equity, six quantitative measures were selected for detailed examination. including market share, net income, sales, sales/ assets, assets/equity, advertising expenses/sales revenues, and 180 expenses/sales revenues, these ratios were correlated with return on assets, return on equity, and market value/common equity for a group of actual and simulated compares. A stepwise regression program was used in correlate the independent variables with the selected performance measures.

IMPACT OF SINGLE VARIABLES ON RETURN MEASURES

The six selected variables (i.e., market share, net income/sales, sales/assets, assets/equity, advertising expenses/sales revenues, and R&D expenses/sales revenues were correlated one a time with return on assets, return on equity, and market value/common equity. In addition, since ret income/sales and sales/assets can he multiplied together to pronounce return on assets and combined with assets equity to calculate net income/ equity, the other independent factors were correlated with return on sales and sales/assets to determine any indirect effects that may exist.

As Table indicates, market snare, advertising expenses/Sales revenue- and R&D expenses/sales revenues did not correlate at significant levels with the three major performance measures in either year one or year two for the actual business environment. However, net income/sales did correlate at significant levels with net income/assets artu net income/equity in both years. Net income/sales was also correlated with sales/assets

and market value/common equity in year one but not in year two.

Sales/assets was negatively correlated at significant levels with net income/sales, net income/assets, and net income/equity in year one. However, it was not significantly correlated with any of these tree measures at significant levels in year two. in addition, sales/assets was moderately correlated with market value/common equity in year one and at significant levels with market value/common equity in year two. Assets/equity was significantly correlated both net income/sales and net income/assets in years one and two. Surprisingly enough, it was not correlated at significant levels with any of the other performance measure in either year.

Net income/sales (positive) and assets/equity.' negative) are the only two independent variables of these examined which were significantly correlated with net income/assets. Thus, an increase in the net income/sales ratio is likely to increase return assets while an increase in the assets/equity ratio appears likely to decrease return on assets furthermore, an increase in assets/equity appears to decrease net income/sales and indirectly affect tier income assts.

Wet income/sales is the only variable of the six considered which was significantly correlated net Income/equity in both years. Since assets :t'. was significantly correlated with net income/sales, this variable may also have had an indirect effect on return on equity. Net income/sales was significantly correlated with market value/common equity 1 ear one while sales/assets was significantly correlation with market value/common equity year two. Co variable was significantly correlated with market value/common common equity in both years.

Table 2 shows the correlation coefficients for six factors in the simulated business environment with the major performance measures. Market share was significantly correlated with sales/assets, net income/equity, and market value/common equity in both years. :t was significantly correlated with net income, assets only in year one. Advertising expenses/sates revenues was negatively correlated with net income, equity and market value/common equity in year one and sales/assets and net income/assets in year two at significant levels. R&D expenses/sales revenues was not significantly correlated in either year with any of the mater performance measures.

Net income/sales was significantly correlated with net income/assets in both years one and two and with net income/equity in year one. The correlation between net income/sales and market value/common equity was not significant in either year. Sales assets was significantly correlated with net income/assets, net income/equity, and market value/common equity in both years. Assets/equity was not significantly correlated with any performance measure in year one hut was related to sales/assets, net income/equity, and market value/common equity in year two at significant levels.

Net income/sales and sales/assets were significantly related to net income/assets in both years while market share was positively related to net income/assets n-i year one and advertising expenses/sales revenues was negatively related to return on assets in year two at significant levels. Market share and sales-assets were significantly related to return on equal both years. Net income/sales was positively correlated with return on equity in year one while advertisers' sales revenues was negatively correlated with return on equity in year two at significant levels. Assets/equity was positively related to return on equity sit significant levels only ii year two.

Market share and sales/assets were significantly related to market value/common equity in both years. Advertising expenses/sates revenues was significantly related to market value/common equity in year one while assets/equity was significantly related to market value/ common equity in year two. Since assets/equity was positively related to sales/assets, and advertising expenses, sales revenues was negatively related to sales! assets at significant levels in year two, these two variables may have had an indirect effect on return on assets, return on equity, and market value/common equity.

In tie actual business environment, market share, advertising expenses/sates revenues and R&D expenses! sales revenues had no apparent effect on the three major performance measures. Net income/sales was the most significant factor when paired with assets/equity, having an indirect effect on return on assets and return on equity. Net income/sales appeared to have the most significant impact on market value/common equity in year one while sales/assets had the most significant factors affecting the three major performance measures in the simulated business environment. Net income/ sales seemed to have a significant effect only on return on assets while assets/equity and advertising expenses/sales revenues may have had an indirect effect on toe return measures.

IMPACT OF MULTIPLE VARIABLES ON RETURN MEASURES

Although only one ratio in the actual business environment and two ratios in the simulated business environ- sent snowed a consistent relationship with the major measures 01 return, when several independent variables (i.e.. ratios) are combined in a multiple regression formula with a given measure of return, a more significant correlation result was often achieved. As the multiple correlation coefficient increased, the stronger was the relationship between the independent and dependent variables. The magnitude of the percentage of variance explained in the dependent variable by each Independent variable indicates how important that variables is in the multiple regression relationship. The higher the F and T values are, the less likely the correlation relationship would be due to chance.

RETURN ON ASSETS

Table 3 contains a correlation matrix for performance ratios which related to return on assets for years One arid two in the actual business environment. In year one, net income/sates and sales/assets were the only two variables significantly related to return on assets. Advertising expenses/sales revenues had a moderate positive Dot not significant relationship to return on assets or both years, In year two, net income/sales. sales assets, and R&D expenses/sales revenues were significantly related to return on assets. Net income/ sales vas tire dominate variable in both years, explaining a large percentage of the variation in the dependent variable.

In toe simulated business environment, as Table 4 indicates. sales/assets and not income/sales were also significantly related to return on assets in year one. In terms of explained variance, sales/assets was much more important than ret income/sales. In year two, net income/sales and sales/assets were significantly related to return on assets again although sales/assets was slightly more important than net income/sales. No other variables showed a significant relationship to return an assets in either year one or two.

In the actual operating environment, net income/sales was :,r store important than any other variable considered during troth years. Sales/assets became significant when combined with net income/sales in the

multiple regression equation but was not as important as net income/sales. R&D expenses/sales revenues also became significant in year two, but at a lower level than sales/assets. In the simulated business environment, sales/assets was the most significant performance factor in both years, with net income/sales becoming more important in year two.

RETURN ON EQUITY

As Table 5 indicates, in the actual operating environment, net income/sales and advertising expenses/sales revenues are the only two variables significantly related to return on equity in year one. In year two, five variables were significantly related to return on equity. Net income/sales, sales/assets, assets/equity, and advertising expenses/sales revenues were positively correlated with return on equity while R&D expenses/sales revenues were negatively correlated to return on equity. The relationships between the independent and dependent variables as measured by the multiple R and R 2 were stronger in year two than in year one.

In the simulated business environment, as Table 6 shows, market share, net income/sales, and sales/assets were significantly related to return on equity in year one. However, in year two, five variables were significantly related to return on equity, including assets! equity (+), net income/sales (+), sales/assets (+), advertising expenses/Sales revenues (+), and R&D expenses/sales revenues (-). The correlation between the independent and dependent variables was very high in both years.

An examination of the real world environment indicates that in year one net income/sales was the most important variable in the correlation relationship with return on equity, followed by advertising expenses/sales. In contrast, in the simulated environment, market share was the most significant variable in terms of its impact on return on equity followed by net income/sales and sales/assets. Sales/assets was not significantly related to return on equity in the actual environment in year one.

In year two, net income/sales, sales/assets, and assets/equity were the most significant independent variables in terms of their apparent impact on return on equity for the real world companies. For the simulated companies, assets/equity, net income/sales, and sales/ assets were the most important variables (in order of importance) in their impact on return on equity. In both environments, advertising expenses/sales revenues (+) and R&D expenses/sales revenues (-) were related to return on equity, but had a less significant impact on the dependent variable than the other three independent variables.

MARKET VALUE/COMMON EQUITY

Table 7 shows the correlation between the independent variables and market value/common equity for the actual operating environment. In both years one and two, net income/s-ales, sales/assets, and assets/equity were significantly related to market value/common equity. In year two, R&D outlays/sales revenues were also positively related to the dependent variable but not as strongly as the other three variables.

For the simulated business environment, Table 8 shows the correlation between market value/common equity and the independent variables. In year one, sales/assets was the most significant variable in the multiple correlation relationship in terms of explained variance. Market share, net income/sales, and R&D expenses/sales revenues were also positively related to the dependent variable in year one. In year two, assets/equity was the variable with toe most significant impact on market

value/common equity. Net income/sales and market share acre negatively correlated with market value/common equity and advertising expenses/sales revenues and sales/assets were positively correlated with market value/common equity. The relationship between the independent variables and the dependent variable was some- shat stronger in year two than in year one.

For the actual companies, net income/sales was the most significant variable that related to market value/common equity iii year one while sales/assets and assets/ equity were the most significant variables affecting market value/common equity in year two. In the simulated business environment, sales/assets was the most significant variable in year one while assets/equity was the most significant variable in year two in terms of impact on the dependent variable. Net income/sales and sales/assets did have a significant impact on market value/common equity in both years in both environments. Assets/equity was significantly related to market value/common equity in both years in the actual environment but only in year two in the simulated business environment. Market share had a positive impact in year one and a negative impact in year two on the dependent variable in the simulated business environment, but had no apparent impact on the dependent variable in either year in the actual environment.

DISCUSSION AND IMPLICATIONS OF RESULTS

Typical business games allow the interaction of many factors with assumed external economic conditions to produce results usually measured in some form of profit measure such as return on assets, return on equity, or earnings per share. Most games are based on the assumption that individual companies which increase market share, advertising expenses/sales revenues, and R&D expenses/sales revenues, etc., will be more profitable than firms who do not. These assumptions are only partially supported by the results of this study.

In the simulated environment, market share had a significant impact on return on equity and market value/common equity in year two. However, market share did not affect return on assets significantly in either year. Advertising expenses/sales revenues had a moderately positive impact on return on equity and upon market value/common equity in year two. R&D expenses/sales revenues had a negative impact on return on equity in year two and a positive impact on market value/common equity in year one.

In the actual operating environment, market share did not significantly affect any of the three performance measures. Advertising expenses/sales revenues had a positive impact on return on equity in both years one and two but was not significantly related to either of the other two performance measures in either year. R&D expenses/sales revenues was positively related only to return on assets and negatively related to return on equity in year two. It was also positively related to market vale/common equity in year two.

The most appropriate strategies for goal achievement will vary, depending on tire measure of return selected and the specific environment considered. If maximization of return on assets is the desired goal in the actual business environment, managers should concentrate on improving return on sales in the initial year of operation, with increasing sales/assets and R&D expenses/ sales revenues becoming more important in year two. In the simulated environment, primary attention should be paid to increasing sales/assets in year one and equal emphasis placed on increasing sales/assets and net income/sales in year two.

If maximizing return on equity is the primary goal in the actual business environment, managers should

emphasize increasing net income/sales first and advertising expenses/sales revenues secondly in year one. In year two, primary attention should be paid to increasing net income/sales, sales/assets, and assets/ equity. Some increase in advertising expenses/sales revenues may also be appropriate in year two with no increase or even some cutback in R&D expenses/sales revenues. By contrast, increasing market share and to a lesser extent, net income/sales, is the most important action in year one for the simulated environment. In year two, efforts should be concentrated on increasing assets/equity as well as net income/sales and sales/assets.

When increasing market value/common equity is the primary goal, improving the return on sales ratio is the most important consideration with an increase in sales/ assets and assets/equity of secondary important in year one for the actual operating environment. These three variables are also important in year two, with increasing assets/equity and sales/assets becoming more important than increasing net income/sales. An increase in R&D expenses/sales revenues can also have a positive impact on market value/common equity. In the simulated environment, the most important factor to increase in year one is sales/assets. Increases in market share, net income/sales, and R&D expenses/sales revenues can also have a positive impact on market value/common equity. In year two, primary attention should be paid to increasing assets/equity with lesser emphasis on increasing advertising expenses/sales revenues and sales assets. Surprisingly enough, efforts to increase net income/sales and market share seers to reduce market value/common equity.

The limitations of this study are fairly significant. Only a limited number of companies in two different environments for a limited time period was considered. Only a few of the many performance factors which can affect the performance measures selected were examined. In addition, these results may not be representative of other actual industry environments or simulated environments in different Situations covering longer time periods.

Nevertheless, the comparisons provide $_1$r useful perspective by indicating similarities and differences in the impact of specific performance factors on the three measures of return considered and the relative importance of such factors. Not income/sales and sales/assets were significantly related to all three measures of return in both the actual and simulated business environments. Assets/equity was significantly related to both return on equity and market value/common equity in year two in both environments with market share being significantly related to both return on equity and market value/common equity in year one and to market value/common equity in year two only in tire simulated environment sales/assets has a more significant impact than net income/sales in the simulated environment while net income/sales of the most important variable in the actual environment.

TABLE 1

CORRELATION COEFFICIENTS FOR SELECTED INDEPENDENT VARIABLES AND DEPENDENT PERFORMANCE MEASURES FOR 18 FOOD/TOBACCO/SOAP AND COSMETIC COMPANIES

INDEPENDENT VARIABLE	DEPENDENT VARIABLES				
	NET INCOME/ SALES	SALES/ ASSETS	NET INCOME/ ASSETS	NET INCOME/ EQUITY	MARKET VALUE/ EQUITY
MARKET SHARE					
YEAR ONE	-0.17	-0.16	0.12	0.05	0.15
YEAR TWO	-0.13	0.09	0.17	0.03	0.18
NET INCOME/ SALES REVENUES					
YEAR ONE	--	0.69*	0.93*	0.81*	0.74*
YEAR TWO	--	-0.16	0.90*	0.64*	0.25
SALES/ASSETS					
YEAR ONE	-0.69*	--	-0.51*	-0.57*	-0.52
YEAR TWO	-0.16	--	0.23	0.41	0.48*
ASSETS/EQUITY					
YEAR ONE	-0.48*	0.06	-0.52*	-0.14	-0.22
YEAR TWO	-0.58*	-0.41	-0.45*	-0.38	-0.09
ADVERTISING/ SALES REVENUES					
YEAR ONE	0.08	-0.21	0.08	0.33	0.28
YEAR TWO	-0.04	0.27	0.07	0.35	0.17
R&D OUTLAYS/ SALES REVENUES					
YEAR ONE	0.22	0.02	0.15	-0.07	0.11
YEAR TWO	0.01	0.10	0.15	0.13	0.11

* SIGNIFICANT AT 0.05 LEVEL

TABLE 3
CORRELATION MATRICES FOR SELECTED INDEPENDENT VARIABLES WITH
RETURN ON ASSETS FOR YEARS ONE AND TWO IN ACTUAL BUSINESS ENVIRONMENT

YEAR ONE

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
2	NET INCOME/			
	SALES	1.13	10.42	0.87
3	SALES/ASSETS	2.68	2.97	0.03
5	ADVERTISING/			
	SALES REVS	0.21	1.45	0.02
A = -4.15	F(3,14) = 54.2	Se = 1.39	R = 0.95	R 2 = 0.92

YEAR TWO

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
2	NET INCOME/			
	SALES	0.85	15.69	0.79
3	SALES/ASSETS	3.64	6.60	0.14
6	R&D OUTLAYS/			
	SALES REVS	0.14	2.17	0.02
5	ADVERTISING/	-0.14	-1.33	0.00
A = -1.89	F(4,13) = 68.1	Se = 1.07	R = 0.98	R 2 = 0.95

TABLE 4
CORRELATION MATRICES FOR SELECTED INDEPENDENT VARIABLES WITH RETURN
ON ASSETS FOR YEARS ONE AND TWO IN SIMULATED BUSINESS ENVIRONMENT

YEAR ONE

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
3	SALES/ASSETS	17.05	37.26	0.63
2	NET INCOME/			
	SALES	0.76	34.99	0.37
A = -16.43	F(2,11)=1661.7	Se = 0.18	R = 0.99	R 2 = 0.99

YEAR TWO

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
2	NET INCOME/			
	SALES	1.26	9.63	0.41
3	SALES/ASSETS	14.46	9.09	0.50
A =	F(2,11) = 76.8	Se = 1.21	R = 0.97	R 2 = 0.93

TABLE 5
CORRELATION MATRICES FOR SELECTED INDEPENDENT VARIABLES WITH RETURN
ON EQUITY FOR YEARS ONE AND TWO IN ACTUAL OPERATING ENVIRONMENT

YEAR ONE

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
2	NET INCOME/			
	SALES REVS	1.19	6.52	0.66
5	ADVERTISING/			
	SALES REVS	0.71	2.65	0.11
A = 4.42	F(2,15) = 24.8	Se = 3.45	R = 0.88	R 2 = 0.77

YEAR TWO

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
2	NET INCOME/			
	SALES REVS	1.14	9.56	0.42
3	SALES/ASSETS	10.93	5.86	0.27
4	ASSETS/EQUITY	3.61	4.91	0.18
5	ADVERTISING/			
	SALES REVS	0.96	3.44	1.04
6	R&D OUTLAYS/			
	SALES/REVS	-0.37	-2.40	0.02
A = -23.02	F(5,12) = 31.8	Se = 2.61	R = 0.96	R 2 = 0.93

TABLE 6
CORRELATION MATRICES FOR SELECTED INDEPENDENT VARIABLES WITH RETURN
ON EQUITY FOR YEARS ONE AND TWO IN SIMULATED BUSINESS ENVIRONMENT

YEAR ONE

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
1	MARKET SHARE	2.78	9.66	0.71
2	NET INCOME/			
	SALES	3.23	15.98	0.27
3	SALES/ASSETS	17.25	2.48	0.01
A = -59.70	F(3,10) = 341.4	Se = 1.58	R = 0.99	R 2 = 0.99

YEAR TWO

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
4	ASSETS/EQUITY	16.99	27.33	0.62
2	NET INCOME/			
	SALES	4.94	22.11	0.62
3	SALES/ASSETS	68.25	14.31	0.11
5	ADVERTISING/			
	SALES REVS	1.35	5.47	0.00
6	R&D OUTLAYS/			
	SALES REVS	-0.52	-2.48	0.00
A = -158.3	F(5,8)=577.4	Se = 1.78	R = 0.99	R 2 = 0.00

TABLE 7
CORRELATION MATRICES FOR SELECTED INDEPENDENT VARIABLES WITH MARKET
VALUE/COMMON EQUITY FOR YEARS ONE AND TWO IN ACTUAL
OPERATING ENVIRONMENT

YEAR ONE

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
2	NET INCOME/			
	SALES	0.24	5.51	0.55
3	SALES/ASSETS	0.97	2.89	0.07
4	ASSETS/EQUITY	1.02	2.47	0.12
A = -3.56	F(3,14)=12.8	Se = 0.45	R = 0.86	R 2 = 0.74

YEAR TWO

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
3	SALES/ASSETS	1.83	5.26	0.23
2	NET INCOME/			
	SALES	0.16	4.42	0.11
4	ASSETS/EQUITY	0.69	4.03	0.27
6	R&D OUTLAYS/			
	SALES REVS	0.07	2.33	0.07
5	ADVERTISING/			
	SALES	-0.08	-1.51	0.05
A = -23.02	F(5,12)=6.43	Se = 0.49	R = 0.85	R 2 = 0.73

TABLE 8
CORRELATION MATRICES FOR SELECTED INDEPENDENT VARIABLES WITH MARKET
VALUE/COMMON EQUITY FOR YEARS ONE AND TWO IN SIMULATED
BUSINESS ENVIRONMENT

YEAR ONE

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
3	SALES/ASSETS	0.93	1.96	0.76
1	MARKET/SHARE	0.04	2.22	0.04
2	NET INCOME/ SALES	0.04	2.52	0.05
6	R&D OUTLAYS/ SALES REVS	0.05	2.05	0.05

A = -1.60   F(4,9)=19.6   Se = 0.09   R = 0.95   R 2 = 0.90

YEAR TWO

VARIABLE NUMBER	VARIABLE NAME	REGRESSION COEFFICIENT	COMPUTED T VALUE	% EXPLAINED VARIANCE
4	ASSETS/EQUITY	1.44	7.56	0.81
2	NET INCOME/ SALES	-0.06	-2.09	0.02
5	ADVERTISING/ SALES REVENUES	0.04	2.56	0.02
3	SALES/ASSETS	4.41	2.80	0.04
1	MARKET/SHARE	-0.91	-4.55	0.05

A = 5.52   F(5,8)=86.28   Se = 0.12   R = 0.77   R 2 = 0.98

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