The Impact of Sales Expenses on the Performance of Fast-Moving Consumer Goods Enterprises: An Empirical Study Based on A-share Listed Companies in the Fast-Moving Consumer Goods Industry

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Abstract. Currently, the main direction of China's economic transformation is to drive economic growth through domestic demand, which presents both an opportunity and a risk for rapidly moving consumer goods enterprises in China. Therefore, when studying the relationship between sales expense investment and company performance, fast-moving consumer goods enterprises that are sensitive to sales expenses should be a key focus of research. Building on the research of domestic and foreign scholars on company sales expenses, this paper puts forward its research hypotheses. After studying the relevant financial data of 149 A-share listed fast-moving consumer goods companies from 2012 to 2022, it was found that the level of sales expense investment is positively correlated with corporate operating income. The sales expense ratio has an inverted U-shaped relationship with current gross profit, and the optimal sales expense ratio derived from A-share fast-moving consumer goods companies is 66.77%. Different robustness tests were conducted on the empirical results, and the universality of the empirical results was confirmed. Therefore, based on the empirical results, relevant recommendations can be made to companies. The main contribution of this paper lies in its specific research on the fast-moving consumer goods industry and the analysis of the limitations of capitalizing sales expenses. Additionally, it derives the sales expense ratio with a marginal effect of 0, providing a quantitative reference for the marketing planning of fast-moving consumer goods enterprises.

Keywords: Fast-moving consumer goods, Sales expenses, Operating performance, Inverted U-shaped relationship

1 Introduction

Sales expenses, as one of the three major types of period expenses, are commonly present in the profit and loss statements of various enterprises in the fast-moving consumer goods industry, reflecting the expenditure on marketing and sales-related activities of fast-moving consumer goods enterprises. In practice, there are generally four sales expense control models in the fast-moving consumer goods industry companies: 1) "total amount control" model, also known as fixed budget; 2) "expense ratio control" model; 3) "expense ratio + price difference" model; 4) "expense ratio + price difference" and "profit assessment" dual-track operation model[1]. Under these models, budget personnel need to make certain professional judgments. Budget personnel in fast-moving consumer goods enterprises face a problem when making cost budget decisions,

i.e., how much budget space should be left for sales expenses generated by the sales department to maximize the return on investment in marketing and sales activities? In other words, is there a relative optimal sales expense investment ratio for fast-moving consumer goods enterprises compared to the company's scale?

Looking at the research on the impact of sales expenses on company performance both domestically and internationally, a large number of scholars have reached different conclusions. Most of them have found positive and negative effects, meaning that there are studies proving a positive or negative correlation between sales expenses and company performance. This provides a basis for the inverted "U" shaped hypothesis proposed in this paper. Therefore, this paper takes the fast-moving consumer goods industry, which is sensitive to sales expenses, as the starting point to study the relationship between the two, and hopes to draw conclusions that can provide theoretical support for fast-moving consumer goods enterprises.

The main contributions of this paper are: (1) the current research in the academic community on the relationship between sales expenses and company performance mainly focuses on individual company case studies, but there is insufficient research on the fast-moving consumer goods industry, where sales expenses are the main period expenses. This study to some extent fills this gap; (2) by conducting regression analysis to identify the optimal sales expense ratio for fast-moving consumer goods enterprises, it provides certain guidance for the marketing and budget management of enterprises in practice.

2 Theoretical Analysis and Research Hypotheses

Both the academic and practical communities have always regarded the three major expenses of enterprises as a major focus of company research. From the perspective of domestic and foreign research, foreign research on sales expenses is significantly more extensive than domestic research, and the conclusions drawn are more controversial[2]. As early as the beginning of the 20th century, Western scholars began to focus on the research of company sales expenses. Weld had already researched the marketing function of companies in 1917[3]. On the other hand, foreign scholars have also tended to diversify their research on company sales expenses, from the perspective of companies, consumers, sales channels, etc.[4][5][6].

Looking back at the research on company sales expenses in China, it can be concluded that domestic scholars mainly focus on quantitative analysis, which tends to be more specific in terms of the impact of sales expenses on company operations, in contrast to the diversified research abroad.

Currently, there is significant conflict in the research on the impact of sales expenses on company performance. The related research conclusions can be roughly divided into two aspects: (1) The investment in advertising and other sales expenses has a positive effect on company performance. Lifei Wang found through regression analysis that there is a significant positive correlation between the investment in sales expenses of pharmaceutical companies and their performance[7]. (2) The increase in sales expenses has a negative impact on company performance. This conclusion is mainly because many scholars believe that the increase in sales expenses consumes the company's cash flow, and marketing strategies based on sales expenses have not been effectively implemented. Qiushi Xiao used China Resources Sanjiu Corporation

as an example and concluded that the company's excessively aggressive marketing strategy would affect its profitability[8].

The research on the relationship between sales expenses and company performance has been ongoing for many years, and different scholars have reached different and even opposite conclusions depending on the selected samples and the construction of the models. Through the above analysis and comparisons, it can be observed that there is insufficient targeted research on the fast-moving consumer goods industry in the academic community, and the conclusions tend to be polarized. Considering the scarcity of conclusions on whether there exists an optimal sales expense ratio, this paper, based on the summarization of domestic and foreign research conclusions, explores whether there is a turning point in the impact of sales expenses on company performance, i.e., a sales expense ratio with a marginal effect of 0. This study makes the relationship between the two more specific, to some extent improving the research on their relationship.

The specific choice of the fast-moving consumer goods industry as the object of study in this paper is mainly due to the characteristics of the fast-moving consumer goods industry and its reliance on marketing strategies. The frequent usage rate and diversified demands of consumers determine that the convenience of consumption must be a key consideration when profiling customers in the fast-moving consumer goods industry. Additionally, it is precisely because of the diversification of consumers that the entry barrier for this industry is low and customer dependence is not high. Therefore, when there is an increase in sales revenue in the fast-moving consumer goods market, company executives will increase their investment in sales expenses to adapt to the sales fluctuations in the market[9].

In terms of the effectiveness of sales expense investment, the impact of sales expenses on the scale of operating income is considered first. As mentioned earlier, many scholars from different perspectives believe that increasing a company's sales expenses is beneficial for its operating performance. This paper hopes to study whether fast-moving consumer goods industries, which are more sensitive to sales expenses, also have similar conclusions. Therefore, the first hypothesis of this paper is proposed:

H1: The level of sales expense investment in fast-moving consumer goods enterprises is positively correlated with operating income.

Next, the impact of sales expense investment on the accounting profit of enterprises is considered. It is assumed that the impact of sales expenses on the accounting profit of enterprises in the fast-moving consumer goods industry follows a non-linear quadratic relationship. This is because sales expenses have both positive and negative effects on the operating performance of fast-moving consumer goods enterprises.

Negative effect: On the one hand, the marketing activities of fast-moving consumer goods enterprises will undoubtedly lead to an increase in sales expenses, and since sales expenses are one of the main types of period expenses, they will reduce the operating profit for the period and also cause some resources on the balance sheet to flow out of the company, such as cash. Therefore, an increase in sales expenses will have an adverse effect on both the operating performance reflected in the profit and loss statement and the resources reflected in the balance sheet.

Positive effect: On the other hand, the occurrence of sales expenses signifies the occurrence of marketing activities. For the investment in sales, especially in the fast-moving consumer goods industry, where effective sales are essential due to the characteristics of fast-moving consumer goods, the investment in sales expenses is beneficial for increasing the brand awareness of the company and its products, contributing to increased product sales, leading to larger accounting profits from increased sales. Some scholars even believe that sales expenses and sales techniques can be used as sources of information and stimulants for internal entrepreneurship[10].

Clearly, the reduction in profit due to sales expenses is linear, but when sales expenses affect operating performance through the scale and quantity of sales, their effect is not linear. Research indicates that as the scale of sales increases, the marginal effect of sales expenses on operating income decreases[11]. Therefore, it is hypothesized that when the amount of sales expenses is small, their negative effect on profit is weak, and the positive effect plays a dominant role. As the amount of sales expenses increases, their negative effect on profit becomes more pronounced, and the diminishing positive effect is no longer sufficient to counteract the impact of the negative effect, resulting in a negative impact on company performance. Taking into account both the negative effect and the positive effect, the second hypothesis of this paper is proposed:

H2: The impact of the sales expense investment ratio on operating profit of fast-moving consumer goods enterprises follows an inverted U-shaped relationship.

3 Research Design

3.1 Model Setting and Variable Definition

Based on the analysis above, to test the impact of sales expenses on the performance of fast-moving consumer goods enterprises, and considering that the companies in the sample often have individual characteristics that may be constant over time, causing omitted variables, it is necessary to use individual fixed effects models for OLS regression. This paper constructs the following basic econometric models to test hypotheses H1 and H2:

For hypothesis H1, the following model is established:

$$LnRevenue_{it} = \beta_0 + \beta_1 LnSe_{it} + \beta_2 LnSize_{i,t-1} + \beta_3 BdSize_{i,t-1} + \beta_4 RID_{i,t-1} + \beta_5 Duality1_{i,t-1} + \beta_6 Lev_{i,t-1} + \beta_7 Top5_{i,t-1} + \mu_i + \varepsilon_{it}$$

(1)

For hypothesis H2, the following model is established:

$$GMR_{it} = \beta_0 + \beta_1 SeRate_{it} + \beta_2 SeRate_{it} + \beta_3 LnSize_{i,t-1} + \beta_4 BdSize_{i,t-1} + \beta_5 RID_{i,t-1} + \beta_6 Duality1_{i,t-1} + \beta_7 Lev_{i,t-1} + \beta_8 Top5_{i,t-1} + \beta_9 Years_{it} + \mu_i + \varepsilon_{it}$$

(2)

Where LnRevenue represents the natural logarithm of enterprise operating income, GMR represents the gross profit margin of the enterprise, measuring the operating performance of the company; LnSe represents the natural logarithm of sales expenses, SeRate represents the sales expense ratio of the enterprise; LnSize represents the natural logarithm of total assets at the end of the year; BdSize represents the board size; RID represents the proportion of independent directors in the board; Duality1 represents the situation where the chairman of the company also

serves as the general manager, taking 1 if so and 0 if not; Lev represents the leverage held by the company; Top5 represents the proportion of shares held by the top five shareholders of the company; Years represents the time from the establishment of the company to the end of the accounting year selected in the sample; μ_i is the intercept term representing individual heterogeneity.

To avoid endogeneity problems, this paper lags the control variables in the model by one period. If hypothesis 1 holds, β_1 in model 1 should be significantly positive. If hypothesis 2 holds, β_2 in model 2 should be significantly negative.

3.2 Data Source and Descriptive Statistical Results

The fast-moving consumer goods industry referred to in this paper mainly includes consumer goods manufacturing and distribution (supermarkets, hypermarkets, convenience stores, etc.), mainly including tobacco and alcohol, food and beverage, agricultural and sideline products, clothing and shoes, personal consumption goods, daily necessities, etc. According to this standard, Chinese A-share listed fast-moving consumer goods companies from 2012 to 2022 were selected as the sample, and the data was screened according to the following principles: (1) eliminating ST companies; (2) eliminating companies in the fast-moving consumer goods sector with a revenue proportion of less than 3/4 of their total revenue; (3) eliminating companies with zero disclosed sales expense amounts; (4) eliminating companies with a significant amount of missing data; (5) eliminating companies with less than 11 years of annual report data, resulting in a final cross-sectional sample of 149 companies, comprising a total of 1454 observations. The data of listed companies are all from the CSMAR database.

Based on the Table1, we can draw the following conclusions. Firstly, the average value of sales revenue (lnrevenue) is 22.055, with a standard deviation of 1.414, a minimum value of 16.171, and a maximum value of 25.682. This indicates that the sales revenue of FMCG enterprises shows a certain level of fluctuation in the sample, with a relatively high average level. Secondly, the average level of sales expense (lnse) is 19.566, with a standard deviation of 1.609, a minimum value of 10.24, and a maximum value of 23.855. Sales expense levels are relatively concentrated but still exhibit some fluctuation. Thirdly, the average gross profit margin (gmr) is 0.298, with a standard deviation of 0.187, a minimum value of -0.275, and a maximum value of 0.929. The average gross profit margin is relatively high, but there is also some fluctuation, indicating that some enterprises may experience losses. Lastly, the average sales expense ratio (serate) is 0.125, with a standard deviation of 0.106, a minimum value of 0.001, and a maximum value of 0.801. The overall sales expense ratio is relatively low, but there is a certain range of fluctuation, suggesting that some enterprises may invest more in sales expenses.

Overall, the data above show varying degrees of fluctuation and concentration trends in terms of sales revenue, sales expenses, gross profit margin, and sales expense ratio for FMCG enterprises. The average levels of sales revenue and sales expenses are relatively high, the gross profit margin is generally stable and high, while the sales expense ratio is relatively low with fluctuations. These data provide important references for understanding the operational and financial performance of FMCG enterprises.

Table 1. Descriptive Statistical Results.

Variable	Obs	Mean	Std. Dev.	Min	Max
lnrevenue	1454	22.055	1.414	16.171	25.682
lnse	1454	19.566	1.609	10.24	23.855
gmr	1454	0.298	0.187	-0.275	0.929
serate	1454	0.125	0.106	0.001	0.801
seratesq	1454	0.027	0.048	0	0.641
lnsize	1454	22.441	1.101	20.259	26.265
bdsize	1454	8.649	1.636	4	17
duality1	1454	0.237	0.426	0	1
rid	1454	0.38	0.062	0.25	0.8
lev	1454	0.43	0.203	0.02	1.484
top5	1454	0.524	0.147	0.15	0.924
years	1454	19.537	5.511	3	34

4 Empirical Analysis of the Impact of Sales Expenses on the Performance of Fast-Moving Consumer Goods Enterprises

Regression analysis was conducted on models (1) and (2), and the analysis results are shown in Table 2, with the regression results rounded to three decimal places.

Table 2. Regression Analysis Results.

VARIABLES	(1) module1 lnrevenue	(2) module2 gmr
L.lnse	0.301***	
	(0.000)	
serate		1.686***
		(0.000)
seratesq		-1.589***
		(0.000)
L.lnsize	0.642***	0.018***
	(0.000)	(0.000)
L.bdsize	-0.025**	0.001
	(0.037)	(0.793)
L.duality1	-0.018	-0.015**
	(0.623)	(0.013)
L.rid	0.080	0.043

	(0.793)	(0.410)
L.lev	0.104	-0.128***
	(0.316)	(0.000)
L.top5	-0.025	0.150***
	(0.853)	(0.000)
years	-0.011***	0.001*
	(0.000)	(0.052)
Constant	2.206***	-0.329***
	(0.000)	(0.001)
Observations	1,454	1,454
Number of id	149	149

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The regression results in Table 2 show that the coefficient of LnSe is significant at the 1% level, indicating a significant positive correlation between the sales expense input of fast-moving consumer goods enterprises and the company's operating income. Additionally, the coefficient of the square term SeRate is also significant at the 1% level and negative, suggesting an inverted "U" relationship between the sales expense input rate of fast-moving consumer goods enterprises and the current earnings of the company. Both Hypothesis 1 and Hypothesis 2 proposed in this study are validated.

For the inverted "U" nonlinear relationship, there often exists a point where the marginal is 0, corresponding to a sales expense rate where the current earnings of fast-moving consumer goods companies reach a maximum value. Through regression calculations, the optimal sales expense rate for fast-moving consumer goods companies is determined to be 66.77%.

To test the robustness of the model, three methods are employed in this study for robustness testing: replacing GMR with ROA of fast-moving consumer goods enterprises as the dependent variable; selecting cross-sectional samples from the years 2013 to 2022 for testing and comparing the regression results with the empirical analysis in the previous section. Numerous studies have already shown a significant relationship between executive compensation and performance[12]. For the FMCG industry, the calculation methods for executive compensation vary among companies; therefore, adding the total amount of executive compensation as a control variable for robustness testing is considered. After empirical testing, all three robustness tests mentioned above pass without altering the significance of the regression results in Table 2.

5 Main Conclusions and Recommendations

This study conducts empirical research on fast-moving consumer goods companies in the A-share market in China by comparing domestic and foreign studies and incorporating policy demands. Utilizing STATA16 software, the study verifies the relationship between sales expenses and operational performance of fast-moving consumer goods companies and draws the following conclusions:

Firstly, there is a significant positive correlation between the sales expense input of Chinese fast-moving consumer goods companies and their operating income. Increasing the level of sales expense input is more beneficial for the marketing activities of the company, leading to an increase in operating income.

Secondly, concerning the sales expense input rate, the current operational performance of fast-moving consumer goods companies will initially increase and then decrease with the increase in sales expense input level, showing an inverted "U" trend. This indicates that when the sales expense input rate is low, the market performance resulting from the increase in sales expenses can offset the operational pressure on the company. However, as sales expenses continue to increase, the negative effects become more prominent, ultimately harming the company's performance. The study calculates that the company's operational performance reaches its peak when the sales expense rate is around 66.77%.

Given the multiple contradictions between production and consumption in society, consumers and producers operate in different dimensions, especially for fast-moving consumer goods companies where the disparity between the two dimensions is significant. The marketing process of a company is essentially a process of aligning these dimensions. Therefore, for fast-moving consumer goods companies, a scientifically effective marketing strategy is crucial for sustainable development. Advertising-driven marketing investments can generate traffic for the company, boosting cash flow, while brand assets established through marketing efforts are essential for maintaining market share and technological innovation, enhancing performance and value.

Based on the study's findings, the following recommendations can be made for the operation of fast-moving consumer goods companies:

Firstly, when the company's sales expense input rate is low, it can consider increasing the investment level as, within a certain range, higher sales expense inputs positively impact both current and future market performance. Marketing activities of fast-moving consumer goods companies rely on sales expenses, and only with a sufficient investment level can the company enhance and expand its marketing network. Moreover, in China's increasingly market-oriented economy, a robust marketing network not only attracts traffic effectively but also strengthens the company's core competitiveness, promoting international business operations. However, if the company's product performance is poor despite a high sales expense rate, it likely indicates the negative effects of sales expenses dominating. In such cases, reducing sales expense input through optimizing marketing structures, streamlining activities, and improving management should be considered.

Secondly, innovate marketing strategies. The empirical analysis reveals that the marketing efficiency of fast-moving consumer goods companies is relatively low even with ample sales expenses. Apart from optimizing internal management and marketing activities, these companies can explore innovative marketing methods and update their marketing strategies. In the era of big data, fast-moving consumer goods companies can implement precision marketing by profiling customers accurately and tailoring marketing initiatives accordingly. Additionally, leveraging 5G technology allows these companies to enhance packaging for products and businesses, meeting diverse consumer demands with a more comprehensive appearance.

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