Journal of Research Administration
Society of Research Administrators International

EXPENDITURE STRUCTURES AND PROFITABILITY DYNAMICS: EVIDENCE FROM CHINESE A-SHARE BEVERAGE COMPANIES (2009–2023)

Liu Yali, S. M. Ferdous Azam
Postgraduate Centre, Management and Science University, Shah Alam, Malaysia

ABSTRACT

In the context of China's economic restructuring and the beverage industry's evolving competitive context, this study investigates how different categories of corporate financial expenditure affect profitability. Focusing on 183 beverage companies listed on China's A-share market between 2009 and 2023, the study adopts a panel data regression model with firm and year fixed effects to explore the relationship between key expenditure types, namely, Cost of Goods Sold (COGS), Accounts Payable (AP), Operating Expense Ratio (OER), and Research & Development (R&D) expenditure, and corporate profitability, measured by Return on Assets (ROA). The findings reveal that R&D and COGS have significant negative effects on ROA, indicating that innovation investments and production costs may compress short-term profits in the beverage sector. Conversely, the operating expense ratio is positively associated with ROA, highlighting that strategic spending on marketing and operations enhances profitability through stronger consumer engagement and brand performance. Accounts payable, however, do not significantly influence profitability, reflecting their limited role in capital optimization within this industry. Control variables such as firm size, leverage ratio, and Tobin's Q further demonstrate their strong explanatory power on firm-level financial outcomes. Robustness checks using net profit margin as an alternative dependent variable confirm the consistency of the results, supporting the validity of the expenditure-profitability nexus. The study offers critical managerial and policy insights: firms should optimize cost structure, enhance the efficiency of R&D output, invest wisely in brand-building activities, and maintain prudent financial leverage. These recommendations aim to strengthen financial performance while aligning with long-term value creation. This research contributes to corporate finance and strategic management literature by offering industry-specific insights into expenditure efficiency and its implications for profitability. The study also provides empirical evidence for stakeholders and regulators seeking to refine governance mechanisms and strategic resource allocation in China's fast-moving consumer goods (FMCG) sector.

Keywords: Beverage industry; Expenditure structure; Profitability; Return on assets; Financial performance

1. INTRODUCTION

In recent years, with the transformation of China's economic structure and the deepening of consumption upgrading, the beverage industry, as an important part of fast-moving consumer goods, has shown a strong development momentum (Liu Tian JIao, 2017). With the improvement of people's health awareness, consumers have put forward higher requirements for the nutrition, safety, taste and other aspects of beverages, forcing companies to continuously carry out product innovation and brand upgrading (Vincent et al., 2023). In this context, China's listed beverage companies are increasingly becoming the benchmark for leading the development of the industry. Their financial operating conditions not only directly affect the sustainable development of the company itself but also reflect the operating efficiency and profitability of the entire industry to a greater extent. Therefore, exploring the key factors that affect the profit performance of listed beverage companies has important theoretical value and practical significance.

As an important indicator of financial performance, corporate profits are usually expressed as return on assets (ROA), which comprehensively reflects the efficiency of corporate asset utilization and operating capabilities (Md., 2019).

This study starts from a micro-finance perspective, focusing on Chinese A-share listed beverage companies, selecting five types of key expenditure and operating indicator variables, and systematically analyzing their impact on ROA. Specifically, the study covers the following five core independent variables: Cost of Goods Sold (COGS), Accounts Payable (AP), Operating Expense Ratio (OER), R&D Expenses (RD) and Sales Revenue (SR). Among them, COGS represents the basic plate of production and procurement expenses, and is a direct factor in compressing profit margins; Accounts Payable reflects the company's short-term debt repayment ability and capital turnover strategy, and can be used as an interest-free financing channel to a certain extent to affect the company's capital cost; the operating expense ratio integrates the proportion of management expenses and sales expenses, and is an important indicator for measuring the company's operating efficiency; R&D expenses reflect the company's investment in innovation capabilities.

The contributions of this study are mainly reflected in the following aspects: First, combining the operating characteristics and financial model of the beverage industry, a systematic expenditure-profit analysis framework is constructed, enriching the industry empirical research on the relationship between expenditure structure and profitability; second, in terms of data selection, based on the panel data of China's A-share listed beverage companies from 2014 to 2023, it has strong representativeness and practical reference value; third, the method uses fixed effects and generalized least squares (GLS) to conduct robust regression analysis, and conducts heteroscedasticity and multicollinearity diagnosis to enhance the credibility of the research; finally, from the policy and management practice level, the research results can provide a quantitative basis for enterprises to formulate more refined financial control strategies, and provide a judgment reference for investors to evaluate the long-term investment value of enterprises.

Based on the above discussion, this paper will focus on the following three core research questions:

RQ1: How do cost of goods sold, accounts payable and main business income jointly affect the ROA of listed beverage companies?

RQ2: Do changes in operating expense rate and R&D expenditure have a significant impact on ROA? Is its effect industry-specific?

RQ3: Are there significant profit driving factors in the expenditure structure? Is there asymmetry in the marginal contribution of different expenditure combinations to ROA?

The structure of this paper is as follows: the second part is a literature review and research hypothesis construction, the third part introduces the data source and research methods, the fourth part shows the empirical results, the fifth part is the discussion of the results and management implications, and the sixth part summarizes the research conclusions and puts forward policy recommendations.

2. LITERATURE REVIEW

2.1. Theoretical and empirical insights

The trade-off theory holds that when companies make financial structure and investment decisions, they must balance between multiple goals, especially the balance between cost and benefit, risk and return. This theory originated from the study of capital structure selection, but its connotation has been expanded to explain the rational behavior of companies in resource allocation and financial decision-making. Trade-off Theory is a core framework in capital structure theory, which is used to explain how companies make trade-offs between debt and equity financing to achieve the optimal capital structure. The following are the key research conclusions about this theory:
When choosing a capital structure, companies will weigh the tax benefits brought by debt (such as interest tax deductions) and potential bankruptcy costs. Companies will seek an optimal debt level at which the company's value is maximized(Ai et al., 2020). Several studies have found that companies will gradually adjust their leverage ratios to approach the target capital structure, supporting the "dynamic adjustment" model of the trade-off theory. For example, in companies in Indonesia and Vietnam, leverage ratios return to the target value at a specific speed (Dao & Le, 2023).

2.2. Determining parameters and hypotheses

Research shows that various types of corporate expenditures have significant and complex effects on return on assets (ROA), especially in terms of budget allocation, risk taking, and market investment efficiency. For example, research has found that when human resources and budget management strategies are highly consistent, the company's ROA level is significantly improved, which means that if the expenditure structure is consistent with strategic goals, it can maximize resource utilization efficiency(PARKINSON & TAGGAR, 2000). In addition, marketing expenditures do not have a significant impact on ROA in some industries, reflecting that high market investment may lead to resource waste if there is no sophisticated performance evaluation mechanism. From the perspective of financial expenditure, some studies have integrated operating indicators in the balance sheet and found that various expenditure-related factors (such as cash ratio, operating profit margin, and fixed asset turnover rate) have a positive driving effect on ROA, reflecting that a reasonable expenditure structure has a direct impact on asset utilization efficiency. In the study of Islamic banking, there is also a positive relationship between ROA and charitable spending, that is, the more profitable the bank, the more its social responsibility spending, which in turn can enhance its reputation and profitability sustainability (Munir, 2022).

Research shows that cost of goods sold (COGS) has a significant impact on the return on assets (ROA) of enterprises, and its direction and degree depend on cost structure management and industry characteristics. In a study of small and medium-sized enterprises in Vietnam, it was found that a higher COGS ratio significantly reduced ROA, indicating that cost control efficiency directly affects corporate profitability and asset utilization returns (Dang et al., 2017). Similar findings were found in the grain processing industry in Uzbekistan, where enterprises with a higher proportion of COGS in total operating costs had significantly lower ROA performance (Avlokulov, 2018). As a result, considering these arguments, the hypothesis in our scenario is:
H1: COGS is negatively related to ROA

Accounts payable (AP), as an important part of a company's short-term debt repayment obligations, have an impact on the company's return on assets (ROA). The management level of accounts payable not only reflects the credit relationship between the company and its suppliers but also affects the company's cash flow and operating efficiency. In industries with high demand for working capital, such as manufacturing and retail, effective management of accounts payable can improve asset utilization efficiency by delaying payments to retain cash flow, thereby improving ROA. However, this relationship is not linear and universal and needs to be analyzed in combination with the specific financial structure of the company and industry characteristics. Empirical research supports this complex relationship. For example, some studies have found that a long accounts payable turnover period may lead to deterioration of supplier relationships and increased credit costs, thereby suppressing ROA, while moderate use of accounts payable may help optimize cash turnover and improve ROA (Goenawan Soedarso & Dewi, 2022). At the same time, in the analysis of corporate samples in the Southeast Asian market, some studies have pointed out that the debt ratio (including accounts payable) has a significant negative impact on ROA, indicating that high short-term debt may put pressure on asset returns (Sunaryo & Lestari, 2021). As a result, considering these arguments,the hypothesis in our scenario is:
H2: AP is positive related to ROA

Operating Expense Ratio (OER, the ratio of operating expenses to operating income) has a significant impact on a company's return on assets (ROA), especially in banks and financial institutions. Multiple empirical studies have found that a higher OER usually means lower operating efficiency, which will erode corporate profits and lead to a decline in ROA.In a study of three state-owned banks in Indonesia, it was found that OER (called BOPO in this study) had a significant negative impact on ROA, indicating that controlling operating expenses is crucial to improving bank profitability (Goenawan Soedarso & Dewi, 2022). In another study of 20 listed commercial banks in Indonesia, it was also found that OER was a significant variable affecting ROA, with an explanatory power of up to 88.4% (Sunaryo & Lestari, 2021). As a result, considering these arguments,the hypothesis in our scenario is:
H3: OER is positive related to ROA

A large number of studies have explored the impact of research and development (R&D) on corporate return on assets (ROA), and the results show that this relationship is usually complex and has a time-delay effect. Most empirical analyses show that R&D investment can significantly improve corporate profitability and asset utilization efficiency in the medium and long term. In emerging economies such as Bangladesh, R&D expenses have also been shown to be positively correlated with corporate ROA and Tobin's Q and other performance indicators, and the model results are robust and not affected by multicollinearity (Sinha & Mondal, 2020). As a result, considering these arguments,the hypothesis in our scenario is:
H4: RD is positive related to ROA

3. RESEARCH METHODOLOGY

3.1. Data and sample

This study is based on the panel data of beverage companies listed on the A-share market in my country from 2009 to 2023, aiming to explore the impact of corporate revenue and expenditure on their profitability. The data in this article comes from the CSMAR database. In order to ensure the scientific quality of the data and the effectiveness of the empirical analysis, companies with missing key variables (such as ROA, LEV, etc.) for two consecutive years or more are directly deleted from the sample to avoid interference of long-term missing values on the panel regression analysis and ensure the representativeness and robustness of the sample. Sample observations with abnormal debt-to-asset ratios are eliminated. Data before the company went public are eliminated. In order to alleviate the interference of extreme values on the statistical analysis results, this article performs a 1% level shrinkage treatment on continuous variables.

3.2 Model

This study constructs the following regression formula based on Zhang Nan's 2021 research.

$$\mathrm{ROA}_{(\mathrm{it})} = \beta_1 \mathrm{COGS}_{(\mathrm{it})} + \beta_2 \mathrm{AP}_{(\mathrm{it})} + \beta_3 \mathrm{OER}_{(\mathrm{it})} + \beta_4 \mathrm{RD}_{(\mathrm{it})} + \mathrm{Firm_i} + \mathrm{Year_t} + \mathrm{cons} + \varepsilon_{(\mathrm{it})}$$

Variable Definitions:

- $ROA_{(it)}$: Return on Assets , the return on assets of firm i in year t.
- $SR_{(it)} \sim RD_{(it)}$: Set of independent variables, including Sales Revenue (SR), Accounts Receivable (AR), Investment Income (II), Cost of Goods Sold (COGS), Accounts Payable (AP), Operating Expense Ratio (OER), and Research & Development expenditure (RD).
- $Firm_i$: Firm fixed effects , control for time-invariant firm-specific characteristics.
- $Year_t$: Year fixed effects , control for time-specific factors that affect all firms.
- _cons: The constant term (intercept) in the regression model.
- $\varepsilon_{(it)}$: Error term , captures unobserved factors that vary across firms and over time.

3.3. Descriptive Statistics

Table 1 Descriptive statistics

VarName	Obs	Mean	SD	Min	Median	Max
ROA	2088	0.044	0.080	-0.305	0.038	0.268
roe	2066	0.054	0.216	-1.365	0.072	0.478

profit	2088	0.067	0.276	-1.676	0.060	0.704
AP	2085	0.088	0.066	0.004	0.074	0.308
RD	1120	0.014	0.020	0.000	0.007	0.119
COGS	2087	0.668	0.203	0.143	0.711	0.989
OER	2087	0.133	0.319	-1.072	0.068	1.600
size	2088	22.265	1.249	19.241	22.199	25.578
lev	2088	0.465	0.220	0.063	0.466	1.018
top1	2088	35.423	15.130	9.230	34.430	71.844
lnage	2088	2.439	0.853	0.000	2.708	3.401
dual	2088	0.238	0.426	0.000	0.000	1.000
board	2088	8.811	1.685	5.000	9.000	14.000
tobin	2088	2.368	1.886	0.833	1.728	12.066
independent	2088	0.374	0.057	0.300	0.333	0.571

To further understand the basic financial characteristics and variable distribution of the sample companies, this paper conducted a descriptive statistical analysis of the main variables, and the results are shown in the table. Overall, the sample data has good representativeness and a reasonable numerical range, which can provide a reliable basis for subsequent empirical analysis. Among the 2088 observations, the average return on assets (ROA) of the company is 4.4%, and the standard deviation is 0.080, indicating that the overall profitability of beverage industry companies is relatively stable, but there are still some differences, with a minimum of -30.5% and a maximum of 26.8%. The average return on equity (ROE) is 5.4%, but the volatility is large (the standard deviation is 0.216), indicating that some companies may have high leverage or financial structure fluctuations. The average net profit margin is 6.7%, and some sample companies have serious losses (the lowest value is -1.676), but most companies remain profitable (the median is 6.0%).

Among the various expenditure indicators, the average ratio of cost of goods sold to operating income (COGS) is 66.8%, which reflects the characteristics of a cost-driven industry; the average operating expense ratio (OER) is 13.3%, with a large standard deviation (0.319), indicating that there are significant differences in the control of period expenses among enterprises. The average ratio of accounts payable (AP) is 8.8%, reflecting the limited credit procurement in the industry as a whole. There are relatively few data on R&D investment (RD), with only 1,120 valid observations and an average of 1.4%, indicating that the overall R&D investment is low and some companies have not disclosed R&D information.

In terms of control variables, the logarithm of enterprise size (size) has an average of 22.265, and the sample covers beverage companies from small and medium-sized to large. The average debt-to-asset ratio (lev) is 46.5%, with the highest value slightly higher than 1 (1.018), but outliers have been eliminated in the early stage, and the overall level is reasonable. The average shareholding ratio of the largest shareholder (top1) is 35.4%, which has a certain degree of concentration; the average logarithm of the enterprise age (lnage) is 2.439, which corresponds to about 11 years of actual age. The proportion of samples in which the chairman and general manager are the same person (dual) is 23.8%; the average size of the board of directors (board) is 8.81 people; the average proportion of independent directors (independent) is 37.4%, slightly higher than the minimum regulatory requirements, reflecting the basic norms of the governance structure. The average value of the company's market valuation variable Tobin's Q is 2.368, indicating that most companies have certain growth expectations.

In summary, the sample in this article is representative and the variable distribution is reasonable, which supports the subsequent panel data regression analysis.

4 FINDINGS AND RESULTS

4.1. Regression Analysis

In order to explore the impact of various corporate expenditures on profitability, this paper takes ROA (return on assets) as the dependent variable, adopts a fixed effect model to gradually introduce the main explanatory variables, and constructs models (1) to (4) respectively, controlling for company fixed effects and year fixed effects. Table 2 shows the estimation results of each regression model.

Table 4.2 Benchmark regression

	(1) ROA	(2) ROA	(3) ROA	(4) ROA
AP	-0.027			
	(-0.790)			
RD		-0.524***		
		(-3.070)		
COGS			-0.073***	
			(-5.476)	
OER				0.194***
				(44.486)
size	0.032***	0.041***	0.030***	0.010***
	(10.543)	(7.685)	(9.731)	(4.759)
lev	-0.172***	-0.212***	-0.168***	-0.060***
	(-15.109)	(-12.095)	(-15.266)	(-7.397)
top1	0.001***	0.001***	0.001***	-0.000
	(3.271)	(2.756)	(2.863)	(-1.186)
lnage	-0.022***	-0.028***	-0.020***	-0.017***
	(-4.909)	(-4.407)	(-4.496)	(-5.364)
dual	-0.010**	-0.010*	-0.009**	-0.007**
	(-2.304)	(-1.662)	(-2.000)	(-2.298)
board	-0.002*	-0.003	-0.003*	-0.003***

	(-1.659)	(-1.157)	(-1.748)	(-2.750)
tobin	0.010***	0.011***	0.010***	0.006***
	(9.891)	(7.344)	(9.752)	(8.326)
independent	-0.062	-0.101*	-0.062*	-0.037
	(-1.634)	(-1.871)	(-1.673)	(-1.423)
_cons	-0.543***	-0.691***	-0.443***	-0.115**
	(-8.140)	(-5.988)	(-6.492)	(-2.423)
FirmFE	YES	YES	YES	YES
YearFE	YES	YES	YES	YES
r2	0.6048	0.6741	0.6114	0.8076
r2_a	0.5617	0.6175	0.5691	0.7867
F	50.9577	32.8475	56.8481	327.9837
N	2085	1109	2087	2087

In model (1), only accounts payable (AP) is introduced as the main explanatory variable. The results show that its impact on ROA is not significant (coefficient = -0.027, t value = -0.790), indicating that the proportion of short-term liabilities of beverage industry companies is low and the impact of accounts payable on profitability is weak. Model (2) introduces R&D expenditure (RD). The regression results show that RD has a significant negative impact on ROA (coefficient = -0.524, t value = -3.070, significance level 1%), which may be related to the long R&D investment cycle and the difficulty in converting it into economic benefits in the short term. Model (3) incorporates the cost of goods sold (COGS) into the analysis, and the results show that COGS has a significant negative impact on ROA (coefficient = -0.073, t value = -5.476, significance level 1%), indicating that the higher the sales cost, the more the profit margin of the enterprise is compressed. Model (4) further introduces the operating expense ratio (OER), with a regression coefficient of 0.194 and high significance (t value = 44.486, $p < 0.01$), indicating that in the beverage industry, reasonable period expense allocation (such as marketing promotion) may improve the profitability of the enterprise.

In each model, the direction of the influence of the control variables is generally consistent. Enterprise size has always shown a significant positive impact on ROA, indicating that large enterprises have advantages in resource allocation and operating efficiency; the debt-to-asset ratio (lev) has a stable negative impact on ROA, suggesting that high financial leverage may compress the profitability of enterprises. The shareholding ratio of the largest shareholder (top1) is only positively significant in the first three models, and loses significance in model (4), which may be related to the collinearity between variables after the introduction of the expense ratio indicator. The age of the enterprise (lnage) always shows a negative impact, indicating that newer enterprises may be more dynamic. The chairman and general manager (dual) have a negative and significant impact in all models, indicating that power is too concentrated or not conducive to the improvement of financial performance. Tobin's Q has a positive impact on ROA, indicating that enterprises with market expectation advantages have relatively higher profit levels. The proportion of independent directors (independent) is negatively correlated with ROA in some models, but the significance is unstable, suggesting that its governance effect is still unclear.

4.2 Robustness Test

To verify the robustness of the benchmark regression ROA regression results, this study further replaces ROA with profit as the explained variable and constructs seven sets of benchmark regression models. The results show that the directionality and significance of the main variables are basically consistent with the previous article, indicating that the research conclusions have strong robustness and explanatory power.

	(1)	(2)	(3)	(4)
	profit	profit	profit	profit
AP	-0.122			
	(-0.947)			
RD		-1.149**		
		(-2.222)		
COGS			-0.238***	
			(-4.842)	
OER				0.801***
				(56.964)
size	0.110***	0.145***	0.100***	0.018**
	(9.692)	(9.085)	(8.756)	(2.556)
lev	-0.595***	-0.635***	-0.599***	-0.147***
	(-14.140)	(-11.976)	(-14.667)	(-5.628)
top1	0.004***	0.004***	0.004***	0.001*
	(5.585)	(4.505)	(5.309)	(1.790)
lnage	-0.010	-0.037*	-0.001	0.014
	(-0.607)	(-1.916)	(-0.065)	(1.371)
dual	-0.021	-0.011	-0.016	-0.008
	(-1.277)	(-0.593)	(-0.986)	(-0.816)
board	0.008	0.001	0.007	0.006*
	(1.465)	(0.195)	(1.383)	(1.839)
tobin	0.017***	0.018***	0.017***	0.000
	(4.391)	(4.097)	(4.456)	(0.114)
independent	-0.022	-0.164	-0.021	0.080
	(-0.155)	(-1.009)	(-0.153)	(0.940)
_cons	-2.312***	-2.947***	-1.950***	-0.518***
	(-9.394)	(-8.427)	(-7.692)	(-3.394)
FirmFE	YES	YES	YES	YES
YearFE	YES	YES	YES	YES

r2	0.5447	0.6844	0.5459	0.8313
r2_a	0.4950	0.6296	0.4965	0.8129
F	38.6156	30.1665	43.5100	470.6390
N	2085	1109	2087	2087

In model (1), the coefficient of accounts payable (AP) on net profit margin is -0.122, but it is not statistically significant (t = -0.947), which is consistent with the ROA regression results in the previous article, indicating that accounts payable, as a short-term liability instrument, has limited impact on the profitability of beverage companies. Model (2) adds R&D expenditure (RD), and the results show that it has a significant negative impact on net profit margin (coefficient = -1.149, t = -2.222, significance level 5%). This shows that R&D activities in the beverage industry are difficult to convert into direct profits in the short term, which may be due to factors such as long technology cycles and slow brand penetration that affect the timeliness of R&D output. In model (3), the impact of the proportion of cost of goods sold (COGS) on net profit margin is -0.238, and it is significant at the 1% significance level (t = -4.842), indicating that the high cost structure significantly compresses the profit space of enterprises, verifying the importance of cost control in profit management. After the operating expense ratio (OER) variable is introduced into model (4), it is found that it has a strong positive impact on the net profit margin (coefficient = 0.801, t = 56.964), which is consistent with the above ROA regression conclusion, indicating that in the beverage industry, reasonable operating expenses such as marketing and channel operation are conducive to the improvement of profit levels, and have obvious positive input-output effects.

In terms of control variables, enterprise scale (size) always shows a positive and significant impact on profit margin, and the coefficients in models (1) to (3) are all greater than 0.10, reflecting the positive effect of scale advantage on profitability. The debt-to-asset ratio (lev) has a significant negative impact in all models, indicating that excessive leverage may bring debt repayment pressure, thereby inhibiting profit growth. The shareholding ratio of the largest shareholder (top1) is significantly positive in most models, indicating that concentrated equity helps improve management efficiency and financial performance, but it is only marginally significant in model (4), which may be related to the improvement of explanatory power after the introduction of the OER variable. The regression coefficients of chairman and general manager dual and board size are small overall and do not show significant effects. Tobin's Q, as a representative variable of corporate market value, has a positive and significant effect on profit margin in models (1) to (3), indicating that companies with high market valuations tend to have stronger profitability, but it is not significant in model (4), or the introduction of expense variables has absorbed some of the explanatory power. The proportion of independent directors (independent) has not shown stable significance in all models, indicating that in the beverage industry, the direct impact of the proportion of independent directors on net profit is not yet obvious, and may still depend on the overall supporting level of the governance mechanism.

5.DISCUSSION AND CONCLUSIONS

On the basis of the basic regression model, a robustness analysis was further conducted to test the robustness and reliability of the results.

From the basic regression results, both R&D expenditure (RD) and the proportion of cost of goods sold (COGS) have a significant negative impact on corporate profitability, indicating that in the beverage industry, excessive product manufacturing costs and R&D investment that is difficult to convert into results in the short term may compress the profit space of enterprises. In particular, R&D expenditure is negative and significant in both ROA and profit models, indicating that although innovation investment is important, its economic returns are lagging, and it is difficult to improve the financial performance of enterprises in the short term. In contrast, the operating expense rate (OER) shows a significant positive impact in both indicators, indicating that in the beverage industry, reasonable and sufficient period expenses such as market promotion and brand operation can enhance consumer awareness, expand sales scale, and thus improve profitability. This result has certain industry characteristics and reflects the realistic logic of consumer goods companies in exchange for a higher market share through channel construction and marketing investment.

Accounts payable (AP) have no significant impact on ROA and profit, indicating that this type of short-term debt accounts for a low proportion of the capital operation of the beverage industry, and its change is not enough to significantly interfere with the financial performance of enterprises.

In terms of control variables, enterprise size and Tobin's Q always show significant positive effects, indicating that large-scale enterprises and enterprises with good market expectations tend to have stronger profitability; while the debt-to-asset ratio (lev) is significantly negative in all models, reflecting the inhibitory effect of leverage risk on corporate profits.

In the robustness analysis, this paper changes the dependent variable from ROA to net profit margin (profit) and gradually introduces core expenditure variables and control variables into the model. It is found that the sign direction and significance of the main variables are consistent, and the model fit is also significantly improved, indicating that the conclusions of this paper are highly robust. Finally, the empirical results of this paper remain consistent under different model settings, verifying that different expenditure structures in the beverage industry have a significant and clear impact on corporate profitability. While maintaining cost control, companies should focus on the efficiency of period expenses and carefully evaluate the pace and strategic value of R&D investment to achieve a dual increase in profits and long-term value.

6. SUGGESTIONS AND IMPLICATIONS

Based on the above research findings, the following suggestions are put forward:

(1) Optimize the expenditure structure and improve the efficiency of capital use. Beverage companies should strengthen the control of the cost side on the basis of ensuring product quality and R&D strategy and avoid unnecessary expenditures from squeezing out profit space. At the same time, they should reasonably plan the R&D cycle, pay attention to the transformation

mechanism of results and the market landing effect, and realize the transformation from "input-oriented" to "benefit-oriented".
(2) Increase brand and channel investment to enhance market competitiveness. The positive effect of operating expenses on profitability shows that brand building, channel sinking and consumer awareness enhancement are the key links for corporate profit growth. It is recommended that companies continue to increase investment in marketing, logistics, terminal operations, etc. within the financial controllable range to enhance market stickiness and premium ability.
(3) Reasonably control financial leverage and guard against excessive debt risks. Studies have shown that the debt-to-asset ratio has a significant inhibitory effect on corporate profitability, suggesting that high leverage operations may increase the financial burden of enterprises. Regulatory authorities can guide industry enterprises to establish a more robust capital structure and enhance risk resistance.
(4) Promote the optimization of corporate governance structure and enhance the quality of internal control. Although the corporate governance variables have different effects in this study, factors such as scale and equity concentration still have a certain impact on financial performance. It is recommended that companies further standardize the board structure, strengthen the incentive and supervision mechanism for executives, and provide institutional guarantees for financial decision-making.

REFERENCES

Ai, H., Frank, M. Z., & Sanati, A. (2020). *The trade-off theory of corporate capital structure*. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3595492

Avlokulov, A. (2018). Return on assets and financial soundness analysis: Case study of grain industry companies in Uzbekistan. *International Journal of Management Science and Business Administration, 4*(6), 52–56. https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.46.1006

Dang, N. H., Hoang, T. V. H., & Tran, M. D. (2017). Impact of cost control on business efficiency of small and medium sized enterprises in Thai Binh, Vietnam. *International Finance and Banking, 4*(2), 112. https://doi.org/10.5296/ifb.v4i2.12030

Dao, T. T. B., & Le, T. H. (2023). Optimal capital structure of Vietnamese listed firms, Finance industry and consumer discretionary industry. *Cogent Social Sciences, 9*(2). https://doi.org/10.1080/23311886.2023.2245238

Goenawan Soedarso, H., & Dewi, L. (2022). Current ratio (CR), debt to asset ratio (DAR) and total assets turnover (TATO) terhadap return on asset (ROA). *Sinomika Journal: Publikasi Ilmiah Bidang Ekonomi dan Akuntansi, 1*(4), 913–918. https://doi.org/10.54443/sinomika.v1i4.456

K., Md. (2019). Impact of the financial factors on return on assets (ROA). *DIU Journal of Business and Entrepreneurship, 12*(1), 50–61. https://doi.org/10.36481/diujbe.v012i1.54kdwn08

Liu, T. J. (2017). Research on the satisfaction of food takeaway in O2O mode. *Business and Globalization, 5*(3), 31–36. https://doi.org/10.12677/BGlo.2017.53005

Munir, M. (2022). The effect of return on assets (ROA) on the expenditure of zakat funds in Islamic banks in Indonesia. *Lan Tabur: Jurnal Ekonomi Syariah, 3*(2), 109–123. https://doi.org/10.53515/lantabur.2022.3.2.109-123

Parkinson, J., & Taggar, S. (2000). Impact of strategy, human resource management, budgeting and participation on return on assets. *Journal of Human Resource Costing & Accounting, 5*(2), 45–61. https://doi.org/10.1108/eb029068

Sinha, A., & Mondal, K. (2020). The impact of lagged R&D expenses on firm performance: Empirical evidence from the BSE healthcare index. *Colombo Business Journal, 11*(2), 114–141. https://doi.org/10.4038/cbj.v11i2.66

Sunaryo, D., & Lestari, E. P. (2021). The effect of debt to asset ratio and debt to equity ratio against return on assets. In *Proceedings of the 2nd Borobudur International Symposium on Humanities and Social Sciences (BIS-HSS 2020), 18 November 2020, Magelang, Central Java, Indonesia*. https://doi.org/10.4108/eai.18-11-2020.2311805

Vincent, C., Mirabent, C., & Munné-Bosch, S. (2023). Lipid peroxidation and lipid-soluble antioxidants as quality control markers in cold-stored fruit for establishing commercial acceptability in Bacon avocados. *Food Control, 143*, 109312. https://doi.org/10.1016/j.foodcont.2022.109312