

# THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

## Research on Fund Management of Diversified Tobacco Enterprises

Yeqing Yuan

Manager, Department of Power, Henan China Tobacco Industry Co., Ltd.,  
Gold Leaf Production and Manufacturing Center, China

### Abstract:

*Although the diversified operation of tobacco enterprises can tap the potential of stock resources, obtain the advantages of scale economy and scope economy, and expand brand influence in breadth and width, on the other hand, a diversified investment may also bring huge risks to tobacco enterprises. This paper studies the non-linear 'U' shaped evolution relationship of tobacco enterprise capital management and comprehensively studies the influence of different property rights, agency costs, financing constraints and other common influencing factors on tobacco enterprise capital management. Moreover, the paper establishes a comprehensive analysis model to test how enterprises effectively use the 'U' shaped evolution relationship with empirical evidence to find the Pareto optimal state among financing constraints, financial flexibility, agency costs and cash holdings.*

**Keywords:** Diversified operation, funds management, 'U-shaped' evolution

### 1. Introduction

The diversified investment of tobacco enterprises should adhere to the idea of related business diversification first and then non-related business diversification to improve the benefits of diversified business. Fully tap the potential of enterprise stock resources, gain the advantages of scale economy and scope economy, and expand brand influence in breadth and width. The diversification of the tobacco industry is a double-edged sword, which can not only bring profits to enterprises, make them obtain new economic growth points, expand their economic benefits and improve their strength. On the other hand, diversified investment may also bring huge risks to enterprises, such as natural risk, market risk, national macro policy risk, investment decision risk, operation risk, etc. At present, the research on diversified investment in the tobacco industry has a narrower vision. Moreover, as the tobacco industry is an unlisted company, it is difficult to obtain data, and many scholars' research has many shortcomings. Because of the limitation of data, much research on the tobacco industry is limited to theoretical analysis. The employees involved in the analysis of the specific content of the diversified investment in the tobacco industry are generally within the tobacco system, which limits the research level of the diversified investment strategy in the tobacco industry. In terms of content, there are many deficiencies in the research on the diversified investment strategy of the tobacco industry, most of which are limited to one aspect, namely the relationship between the diversified investment strategy of the tobacco industry and the business performance of tobacco industry, while there are few theories directly studying how to diversify the investment of tobacco enterprises. This cannot fundamentally solve the problem of low investment efficiency of diversified investment in the tobacco industry. When studying diversified investment strategies in the tobacco industry, most scholars discussed and analyzed why diversified investment in the tobacco industry failed from the perspective of tobacco companies but did not treat the diversified investment as a systematic and strategic issue from the perspective of decision-makers.

### 2. Background

Despite its various uses, more than 80 percent of the world's tobacco is used to make cigarettes, and tobacco consumption is declining in developed countries, while the rate of increase in cigarette consumption is declining again in developing countries. Moreover, the world's tobacco production is highly concentrated, and tobacco enterprises expand their market share by diversifying investment and increasing tobacco varieties. Katchova (2015) and Miller (2016) found that tobacco companies obtained excess returns through diversification with empirical research. Saffer & Chaloupka (2000) have proved that diversification will reduce the shareholder wealth of tobacco companies. The development of the tobacco industry is regulated by the government, and the entry and exit of the tobacco industry are strictly restricted by the government. Therefore, there are few studies on the diversification of investment in the tobacco industry. It can be seen from the existing research results that diversified investment can promote the development of tobacco enterprises and improve the economic benefits of tobacco enterprises. Peng (2016) and Li (2016) made a detailed analysis of various challenges faced by China's tobacco industry. Zhou (2017) analyzed the problems faced by the development of China's tobacco industry by using the five forces model proposed by Professor Porter. Yuan (2021) proposed that the tobacco industry should make diversified investments and put forward the idea of diversified investment. Liu (2022) analyzed the supply and demand changes in China's cigarette market and proposed the development direction of tobacco industry

diversification in the future. Some scholars have studied the relationship between diversified investment and enterprise value from the perspective of corporate governance. The above studies show that there was no consistent conclusion on the impact of diversified investment on enterprise performance and fund management. Therefore, when studying diversified investment in the tobacco industry in this paper, practical diversification strategies should be considered comprehensively and effective fund management mode should be used. Efforts to improve the economic benefits of tobacco enterprises create more social value.

Under the pressure of huge debts, the diversified business model was once considered not to improve the operating status but to aggravate the financial risks of enterprises. Moreover, the reality that many enterprises are facing bankruptcy has proved the disadvantages of relevant theories, such as the theory of changing the business scale and competitiveness of enterprises through a diversification strategy (Kreslake et al., 2008). With the emergence of theories such as supply chain management and global value chain, as diversified operation involves multi-industries and multi-product markets, the phenomenon of asymmetric and uncirculated information of enterprises has been alleviated, and the constraints of external financing and agency costs of enterprises have also been reduced, which has attracted the attention of business and academic circles (Imbs & Wacziarg, 2003; Campa & Kedia, 2002). Gemba & Kodama (2001) and Hitt et al. (2022) believe that the multi-faceted research results show that the essence of diversified business mode is that an enterprise improves the efficiency of resource use, improves its ability to operate the internal capital market and avoid risks.

Therefore, the relationship has also aroused attention between diversified business models and cash holding of tobacco enterprises. It is bringing unexpected financial crises to tobacco enterprises with investment opportunities based on financial flexibility and the increase of agency costs due to managers' spending behavior. This paper studies the non-linear U-shaped evolution relationship with cash holdings of tobacco enterprises based on diversification. By establishing a comprehensive analysis model, this paper empirically tests how tobacco enterprises make effective use of the 'U' shaped evolution relationship to find the Pareto optimal state among financing constraints, financial flexibility, agency costs and cash holdings.

### 3. Modeling

#### 3.1 Analysis of Model

Although the diversified business model can properly reduce the operating risks of tobacco enterprises and help tobacco enterprises to expand their business scope to a certain extent, it is often used by the management for personal gain, which may result in a discount on operating benefits. Some scholars have found that in the agency theory, there is a U-shaped change relationship between tobacco enterprise ownership and diversified business activities. From the "U-shaped" relationship, this paper finds that in the process of diversified operation, the cooperation among various business departments of tobacco enterprises constantly improves the optimal allocation of resources, completes the network collection of the internal capital market, and realizes the rational allocation and effective use of internal capital.

Therefore, by choosing diversified operations, tobacco enterprises can effectively replace the external capital market through the function of the internal capital market to improve investment efficiency. Compared with external financing, the theory of orderly financing also holds that when tobacco enterprises realize financing purposes through the internal capital market, the financing procedure is simplified and the financing cost is lower. In order to improve the efficient operation of the internal capital market, tobacco enterprises need to take the price mechanism to coordinate the close cooperation of various internal business departments as the main adjustment tool, utilize the fund allocation rights of different business departments, and become the guarantee of mutual financing capital, and guarantee the investment efficiency of diversified business departments. Tobacco enterprises need to comprehensively consider the property nature, agency costs, financing constraints and other conditions based on diversified operations when they are making cash-holding decisions. Since there is a non-linear U-shaped evolution relationship between diversification and cash holding level of tobacco enterprises, this paper studies its changing characteristics. The characteristics of the change between the diversified operation and the cash holding level of tobacco enterprises: The economic consequences of the cash holding level of tobacco enterprises can be properly reduced through the appropriate implementation of the diversified operation; However, the disadvantages of the diversified development mode of excessive investment also bring more operating uncertainties to tobacco enterprises but also increase the cash holding risk of tobacco enterprises.

This paper believes that the relationship is not completely positive between diversification and cash holding level with the comprehensive study. It is a 'U' type relationship and a non-linear relationship. At the early stage of the evolution of the "U-shaped" relationship, tobacco enterprises pay high costs due to information asymmetry, which leads to financing constraints. In addition, the agency problem is more prominent. According to the free cash flow theory, the management of tobacco enterprises is willing to hold a large amount of cash, so at the early stage of the evolution of the "U-shaped" relationship, tobacco enterprises hold a large amount of cash. However, with the development of moderate diversification, the internal capital market of tobacco enterprises accelerates the optimal allocation of resources, and the financing cost of enterprises from banks and the external environment is gradually reduced, and tobacco enterprises reduce cash holdings. In the case of excessive expansion of business investment scale, the role of the internal capital market of tobacco enterprises continues to decline, and it is difficult for banks and external investors to grasp the expanded financial information of tobacco enterprises, resulting in new financing difficulties. Moreover, tobacco enterprises begin to hold a large amount of cash. This paper proposes hypothesis M1: U-shaped evolution relationship between diversified operation and cash holding level, which is cash holding level of tobacco enterprises presents a development trend of first decreasing and then increasing with the expansion of diversified operation scale.

There is a relatively large difference because of different property rights. Tobacco enterprises occupy various resources, operation and management abilities. This difference will directly affect the cash holding level of tobacco enterprises, which is more obvious in the process of diversified business mode management. This paper proposes hypothesis M2: compared with state-owned tobacco enterprises, non-state-owned tobacco enterprises have a more significant "U-shaped" evolution relationship for cash holdings based on diversified business models and different property rights attributes.

In the diversification process, tobacco enterprises must strictly control the proportion of management shares. Otherwise, the management will have too much control power. This will bring more uncertain financial crises and operational risks to tobacco enterprises. Many scholars at home and abroad have actively studied the effective shareholding range of managing diversified enterprises. For example, some research results believe that the reasonable shareholding range of the management of tobacco enterprises is [8%, 25%] based on the synergistic effect of interests and 'Entrenchment Effect.' After the study, this paper believes that the excessive diversification of business and the increase of management agency problems, especially with the increase of management shareholding ratio, will weaken the synergistic effect between the value of tobacco enterprises and the personal interests of management and increase agency costs. This paper puts forward hypothesis M3: management's personal benefits are maximized, and there is a U-shaped evolution relationship with the cash holding level of tobacco enterprises based on the diversified business model and agency cost control.

### 3.2. Establishing Model

In order to better study the 'U-shaped' evolution relationship between diversified operation and cash holding level of tobacco enterprises, this paper also established a comprehensive model to study the relationship among financing constraints, agency costs and other issues of enterprises of different natures and high cash holding. Referring to the research results of some scholars at home and abroad, this paper selects income entropy (EI) and income Herfindahl index (HHI).

$$\begin{aligned} \text{Cash} = & \alpha_0 + \alpha_1 EI_{i,t} + \alpha_2 EI^2_{i,t} + \alpha_3 \text{Size}_{i,t} + \alpha_4 \text{Lev}_{i,t} + \alpha_5 \text{Roe}_{i,t} + \alpha_6 \text{CF}_{i,t} \\ & + \alpha_7 \text{Debtstr}_{i,t} + \alpha_8 \text{Nwc}_{i,t} + \alpha_9 \text{CV}_{i,t} + \alpha_{10} \text{Capex}_{i,t} + \alpha_{11} \text{PB}_{i,t} \\ & + \alpha_{12} \text{Divid}_{i,t} + \alpha_{13} \text{Growth}_{i,t} + \sum \text{Industry} + \sum \text{Year} + \varepsilon_{i,t} \quad (1) \end{aligned}$$

In the above comprehensive model, PB is the ratio between the market value and the book value of corporate shareholders' equity. CV represents the standard deviation of cash holdings from business activities in recent years. Debtstr is the ratio of long-term debt to the total debt of an enterprise. When  $\alpha_1$  in the model is significantly correlated, but  $\alpha_2$  is not, which indicates that the relationship between diversification and cash holdings is linear. When  $\alpha_1$  is significantly negative and  $\alpha_2$  is significantly positive, the relationship is a 'U-shaped' evolution between diversification and cash holdings of tobacco enterprises. For tobacco enterprises with different property rights, the level of cash holdings is also different. For this purpose, the research parameters are added, such as the individual interests of management in this paper and such as the equity of management (represented by GP). The scale of diversified operation of tobacco enterprises, and the cross term between management equity, can be expressed as  $EI \times GP$ ,  $EI^2 \times GP$ . Therefore, this paper constructs a model of diversification and cash holding level for enterprises with different property rights:

$$\begin{aligned} \text{Cash} = & \beta_0 + \beta_1 EI_{i,t} + \beta_2 EI^2_{i,t} + \beta_3 GP_{i,t} + \beta_4 EI \times GP + \beta_5 EI^2 \times GP \\ & + \beta_6 \text{Size}_{i,t} + \beta_7 \text{Lev}_{i,t} + \beta_8 \text{Roe}_{i,t} + \beta_9 \text{CF}_{i,t} + \beta_{10} \text{Debtstr}_{i,t} \\ & + \beta_{11} \text{Nwc}_{i,t} + \beta_{12} \text{CV}_{i,t} + \beta_{13} \text{Capex}_{i,t} + \beta_{14} \text{PB}_{i,t} + \beta_{15} \text{Divid}_{i,t} \\ & + \beta_{16} \text{Growth}_{i,t} + \sum \text{Industry} + \sum \text{Year} + \varepsilon_{i,t} \quad (2) \end{aligned}$$

By analyzing the above model, in tobacco enterprises with different property rights, GP is 1 if the proportion of management equity exceeds the median shareholding and 0 if not. When  $GP < 0$  or  $GP > 0$ ,  $GP \neq 1$ ,  $\beta_1$  is a significantly negative correlation,  $\beta_2$  is a significantly positive correlation, indicating that the incentive measures of management shareholding have a U-shaped evolution relationship between the diversification and cash holding level of tobacco enterprises, and play a positive moderating effect.  $\beta_1$  is significantly negative, while  $\beta_2$  has no significant or negative correlation. It indicates that the incentive measures of management shareholding have a U-shaped evolution relationship between diversification and cash holding level of tobacco enterprises, which has a negative moderating effect.

In view of tobacco enterprises facing different degrees of information asymmetry, agency cost control and other problems, this paper studies the impact of diversification on cash holding level. The larger the scale of diversification, the cash holdings of tobacco enterprises are the lower. In order to more accurately express the value of diversified operations to tobacco enterprises' cash holdings, this paper establishes a cash holdings value model based on agency costs:

$$\begin{aligned} V_{i,t} = & \delta_0 + \delta_1 \text{Cash}_{i,t} + \delta_2 YV_{i,t} + \delta_3 YV \times \text{Cash}_{i,t} + \delta_4 \Delta V_{i,t+1} + \delta_5 \text{NCash}_{i,t} \\ & + \delta_6 \text{NCash}_{i,t+1} + \delta_7 E_{i,t} + \delta_8 \Delta E_{i,t} + \delta_9 \Delta E_{i,t+1} + \delta_{10} \text{FCC}_{i,t} + \delta_{11} \Delta \text{FCC}_{i,t} \\ & + \delta_{12} \Delta \text{FCC}_{i,t+1} + \delta_{13} \text{Capex}_{i,t} + \delta_{14} \Delta \text{Capex}_{i,t} + \delta_{15} \Delta \text{Capex}_{i,t+1} + \delta_{16} \text{Divid}_{i,t} \\ & + \delta_{17} \Delta \text{Divid}_{i,t} + \delta_{18} \Delta \text{Divid}_{i,t+1} + \sum \text{Industry} + \sum \text{Year} + \varepsilon_{i,t} \quad (3) \end{aligned}$$

In the above model, YV represents the dummy variable of diversification (grouped according to the median of the scale of diversification of tobacco enterprises; when EI is greater than the median, the value of YV is set as 1. Otherwise,

the value of YV is set as 0). NCash is the non-cash assets of tobacco enterprises, E is the operating profit of tobacco enterprises, Div is the cash dividends of tobacco companies and FCC is the financial cost of tobacco enterprises.

#### 4. Results and Discussions

This paper establishes a comprehensive model of cash holding of tobacco enterprises and relevant research results based on the 'U-shaped' evolution relationship between diversification and cash holding level and conducts a descriptive analysis of the main variables, as shown in table 1.

Variables	Sample Size	Average	Minimum	Median	Maximum	Standard Deviation
Cash	12025	0.1959	0.0001	0.1580	0.8920	0.1410
EI	12025	0.3861	0	0.2140	1.3630	0.4161
Size	12025	21.9650	19.9633	21.8152	24.5579	1.1582
Lev	12025	0.4331	0.0072	0.4335	0.8246	0.2120
Roe	12025	0.0865	-0.1085	0.0816	0.2505	0.0742
CF	12025	0.0870	-0.1740	0.0786	0.3605	0.1364
Debtstr	12025	0.1285	-0.0118	0.0460	0.5400	0.1634
Nwc	12025	-0.0203	-0.9479	0.0472	0.8853	0.4215
CV	12025	0.1108	0.0059	0.0836	0.2843	0.0843
Capex	12025	0.0963	0.0010	0.0705	0.2920	0.0866
PB	12025	0.8070	0.0044	0.6165	2.0575	0.5823
Dividend	12025	0.7634	0	1	1	0.4250
Growth	12025	0.2203	-0.6496	0.1313	0.9990	0.4002
GP	12025	0.0148	0	0.0002	0.0575	0.0233

Table 1: Descriptive Statistics of Major Variables

As can be seen from the above table:

- The average value is 0.1916, which is similar to the research results. The minimum value of cash holdings in the sample of tobacco enterprises is 0.0001, and the maximum value is 0.8920, indicating a large gap in cash holdings in the sample.
- The minimum value of EI in the table is 0, the maximum value is 1.3630, and the median value is 0.2140, which is far lower than the mean value of 0.3861, which reflects that when tobacco enterprises with different property rights adopt diversified business models, there is a serious imbalance in business scope and development level.
- In the table, the mean value, median value and maximum value of management equity allocation of tobacco enterprises are 0.0148, 0.0002, and 0.0575, indicating that the management shareholding ratio of tobacco enterprises is generally low, indicating that the incentive mechanism of management needs to be accelerated.
- From the above table, it can also be analyzed that the operation scale and cash holdings of tobacco enterprises of different natures are at a relatively low level, which reflects that the comprehensive impact of diversified operations on cash holdings is relatively large. It also verifies the hypothesis proposed in this paper and supports the 'U-shaped' evolution relationship between diversified operations and cash holdings of tobacco enterprises.

#### 5. Conclusion

This paper studies the non-linear 'U' shaped evolution relationship of tobacco enterprise capital management. By establishing a comprehensive analysis model, the paper tests how tobacco enterprises make effective use of the 'U' shaped evolution relationship with empirical evidence to find the Pareto optimal state of capital management. The fund management level of tobacco enterprises has different performance because of the diversified operation mode, which is a non-linear 'U' shaped evolution relationship. In the early stages of the U-shaped relationship, tobacco companies are willing to hold large amounts of cash. However, with the development of moderate diversification, the internal capital market of tobacco enterprises has accelerated the optimal allocation of resources and reduced cash holdings. However, in the case of excessive expansion of business investment scale, the role of the internal capital market of tobacco enterprises has been declining, and financing has encountered new difficulties, which has increased the level of cash holdings. Due to the different nature of property rights, diversification has no significant regulating effect on reducing the cash holding level of state-owned tobacco enterprises. However, it has a significant regulating effect on non-state-owned tobacco enterprises. At the same time, management shareholding is conducive to the synergistic effect of enterprise value based on the diversified business model. Therefore, tobacco enterprises can use the incentive measures of management shareholding to improve the regulating effect of cash holding level of price reduction in diversified operations.

#### 6. References

- Campa, J. M. & Kedia, S. (2002). Explaining the Diversification Discount. *The Journal of Finance*, 57(4), 11-17.
- Gemba, K. & Kodama, F. (2001). Diversification dynamics of the Japanese industry. *Research Policy*, 30(8), 1165-1184.
- Hitt, M. A., Tihanyi, L., Miller, T. L., & Connelly, B. L. (2006). International Diversification: Antecedents, Outcomes, and Moderators. *Journal of Management*, 32(6), 831-867.

- iv. Imbs, J. & Wacziarg, R. (2003). Stages of Diversification. *The American Economic Review*, 93(1), 63–86.
- v. Katchova, A. L. (2005). The Farm Diversification Discount. *American Journal of Agricultural Economics*, 87(4), 984–994.
- vi. Kreslake, J. M., Wayne, G. F., Alpert, H. R., Koh, H. K., & Connolly, G. N. (2008). Tobacco industry control of menthol in cigarettes and targeting of adolescents and young adults. *American Journal of public health*, 98(9), 1685–1692.
- vii. Li, J. (2016). Diversified investment management of tobacco industry under the new normal. *Management Research*, (3), 88–90.
- viii. Liu, R. (2022). Thinking on diversified investment management of tobacco. *Enterprise Technology Development*, (7), 139–141.
- ix. Masulis, R.W. & Reza, S. W. (2015). Agency problems of corporate philanthropy. *Review of Financial Studies*, 28(2), 592–636.
- x. Miller, D. J. (2006). Technological diversity, related diversification and firm performance. *Strategic Management Journal*, 27(7), 60–67.
- xi. Peng, J. H. (2016). Research on the preservation and appreciation of state-owned assets in tobacco industry. *Financial Supervision*, (5), 107–109.
- xii. Saffer, H., & Chaloupka, F. (2000). The effect of tobacco advertising bans on tobacco consumption. *Journal of health economics*, 19(6), 1117–1137.
- xiii. Yuan, Z. Y. (2021). Discussion on diversified development of tobacco industry. *Chinese and Foreign Entrepreneurs*, (1), 53–55.
- xiv. Zhou, H. (2017). Fiscal decentralization and the development of the tobacco industry in China. *China Economic Review*, 2017(1):11–13.