Financial Performance Analysis Under an Asset-Light Operating Model

Xiaolin Li, Yuqi Lv[*], Chunyan Lu and Jia Xu

Business and Tourism School, Sichuan Agricultural University, Chengdu, 611830, China

*yqwssy02@163.com(Yuqi Lv,corresponding author)

Abstract. The pharmaceutical industry is closely related to people's lives. With the fierce competition in China's pharmaceutical industry and the market entry of foreign pharmaceutical companies bringing serious stimulation to domestic pharmaceutical companies, pharmaceutical companies have begun to explore new operational models. The light asset operation model has become an important choice for the transformation and upgrading of Chinese pharmaceutical companies. This article summarizes and organizes the relevant content of the light asset operation model, introduces the development situation and policy background of China's pharmaceutical enterprises, and conducts an empirical analysis of the financial performance of the pharmaceutical industry under the light asset operation model, pointing out the positive relationship between the two. It also raises existing problems and provides suggestions, finally summarizing the research conclusions and looking into the future.

Keywords: Asset-light Operation, Regression Analyses, Pharmaceutical Industry.

1 Introduction

1.1 Background

The pharmaceutical industry is an important part of the national economy, has garned significant attention across various sector. After the "13th Five-Year Plan," medical reforms continue to deepen, and the government has introduced preferential policies to encourage its development. At the same time, the entry of foreign pharmaceutical companies into the Chinese market has brought about shocks. Against this backdrop, pharmaceutical companies are exploring the light asset operation model. It was first proposed by British and American economists, originating from the reflection on the limitations of traditional heavy asset operations. Companies, in response to the pressure brought by excessive assets, began to divest non-core assets and focus on core businesses. Subsequently, under the impetus of the knowledge economy and information technology development, it has been continuously deepened and expanded, emphasizing more on relying on intangible resources, such as brands and technology, to conduct business and achieve high returns with less physical asset investment. In this model,

the core resources of a company are "light" assets such as marketing, technology research and development, and brand value. It advocates that companies should concentrate resources in core areas, achieve the best business combination at a low cost, and enhance performance and value. Many foreign companies, such as Apple and Microsoft, have adopted this model. Influenced by their successful transformation, Chinese companies are also continuously researching and applying it. In recent years, companies in various industries in China, such as Tencent, Xiaomi, and Wanda, have successfully transformed in line with their actual situations. However, there are relatively few pharmaceutical companies in China that apply the light asset operation model, and related research is also scarce. In the current policy and economic environment, whether this model is suitable for pharmaceutical companies, how companies should transform, and what issues should be noted during the transformation process all need to be explored. Based on this background, this article takes domestic listed pharmaceutical companies as examples to study their financial performance levels and provides a reference for other companies.

1.2   Research Purpose and Significance

The concept of asset-light was introduced into China at the beginning of this century[1]. Although there is no mature theoretical system yet, Chinese scholars have achieved certain research results through case analysis. However, in China, research objects mainly focus on industries such as real estate, the Internet, and clothing, etc. There are relatively few relevant studies on the pharmaceutical industry. Moreover, most of the studies focus on aspects such as the connotation, characteristics, and financial strategies of the asset-light operation model, and lack in-depth discussions on the issue of its impact on the financial performance of enterprises.

   This paper takes the pharmaceutical industry as the analysis object, focuses on studying the impact of the implementation of the asset-light operation model by pharmaceutical enterprises on financial performance, and explores whether this model is conducive to the comprehensive development of enterprises and whether it can produce a positive effect, so as to enrich relevant theoretical research in China and provide an analytical framework. On the practical level, China has a large population, and people's requirements for health are gradually increasing. The innovative development of the pharmaceutical industry is of great importance. Although the application of the asset-light operation model is becoming more and more widespread, its layout in the pharmaceutical industry is relatively late. This paper takes some listed pharmaceutical companies in China as the research objects, centers on the theme of financial performance analysis under the asset-light operation model, analyzes its applicability, and puts forward targeted suggestions, so as to provide references for enterprises applying this model to optimize resource allocation and improve performance levels.

1.3   Literature Review

After sorting out the relevant literature on the asset-light operation model at home and abroad, it can be seen that scholars at home and abroad mostly conduct research around

its concept[2], characteristics, and influencing effects[3][4]. Some scholars have explored the relationship between it and the financial performance of enterprises[5]. However, the existing research has deficiencies in terms of the problems existing in the implementation of this model by enterprises and the corresponding solutions[6], and a complete theoretical system has not yet been formed.

Foreign scholars[7][8] have conducted more comprehensive research on the financial performance of enterprises[9] under the asset-light operation model, exploring how to improve enterprise earnings, reduce financial risks[10], and thus enhance performance through it. China started relatively late in this regard and mostly provides supplementary explanations on the basis of foreign research. The research focus is often concentrated on specific case analysis[11] and conclusions drawn are mostly at the theoretical level. China's financial performance evaluation system is not yet sound enough. Traditional financial indicators and analysis methods such as the DuPont analysis are mostly adopted, the selection of evaluation indicators is rather single, there are few studies using empirical analysis to evaluate the financial performance of enterprises, and no suggestions have been put forward on how to improve financial performance, indicating that the research depth is insufficient.

Since different industries have different attributes, which will affect the effect of the asset-light operation. Therefore, when analyzing the relationship between it and financial performance, it is necessary to base on the actual situation of specific industries.

2   Empirical Analysis of Financial Performance of Pharmaceutical Industry Under Asset-Light Operation Mode

2.1   Theoretical Analysis and Research Hypotheses

Asset-light. Asset-light refers to resources such as enterprise resource management, brand culture, and patent research and development. Asset-light resources are inimitable and unique to an enterprise, and they can create value for the enterprise for a long time. Regarding the impact relationship between asset-light and the financial performance of enterprises, many scholars at home and abroad have already conducted empirical research. Foreign scholars such as Sohn et al.[12] took American chain hotels as an example and, through empirical analysis, reached the conclusion that asset-light can contribute to the improvement of an enterprise's financial performance. Lin and Huang [13] established an asset-light assessment model and empirically verified that asset-light can bring higher financial performance to enterprises. Domestic scholar Tang Yingzhang et al.[14], after studying Taiwanese enterprises, found that the higher the proportion of asset-light resources, the stronger the profitability. Liu Jing also reached the conclusion through empirical research that asset-light operation can improve the profit margin of enterprises.

In summary, based on the existing literature review and research themes, the following hypotheses are proposed:

Hypothesis 1: There is a positive correlation between the degree of asset-light operation and financial performance.

2.2 Sample Selection and Data Sources

The main data of this paper are sourced from the RESSET database. Taking the pharmaceutical manufacturing industry on the main board of the Shanghai Stock Exchange as the research object, companies in normal operating conditions are selected. After deleting some enterprises with missing data, the remaining 30 enterprises become the research objects. Considering that the COVID-19 pandemic continued to develop after 2020 and had a significant impact on the development of enterprises, in order to avoid the impact of the pandemic factor on the financial performance of enterprises and objectively study the role of the asset-light operation model in the financial performance of enterprises, this paper only collects the enterprise data before 2019. Moreover, according to the information available, the asset-light operation model began to develop in China around 2010. To better explore the impact of the asset-light operation model on financial performance and allow it several years of development time, this paper collects the operating data of pharmaceutical enterprises from 2015 to 2019, the sample size is 150. The software used for empirical research is STATA 16.0. Before conducting the research, the data are preprocessed to make the research results more accurate.

2.3 Study Variables

Dependent variable. This paper selects the return on equity (ROE) as an indicator to measure the financial performance of enterprises. In the robustness test, the return on assets (ROA) is chosen as an alternative variable to measure and test the stability of the model.

Independent variable. This paper refers to the views of scholars such as Wang Xinru and applies the calculation formula for the degree of asset-light proposed by Tang Yingzhang, a Taiwanese scholar.

$$LAT = \frac{ICB \times (ROIC - WACC - r)}{r} + GW + LA \tag{1}$$

Among them, "r" represents the risk-free interest rate, and in this paper, the one-year loan interest rate of banks is adopted. "ROIC" stands for return on invested capital, "WACC" represents the weighted average cost of capital of an enterprise, "ICB" indicates the actual value of the invested capital, "GW" stands for the goodwill disclosed by the enterprise, and "LA" represents the intangible assets disclosed by the enterprise.

Control variables. In this paper, four control variables are selected in the study of the impact of the asset-light operation model on the financial performance of enterprises. The asset-liability ratio is selected to represent the capital structure of the company, and the net profit growth rate is used to represent the growth opportunities of the enterprise. Secondly, as can be known from the DuPont analysis method, the total asset turnover rate will affect the return on net assets. Therefore, this paper controls the total asset turnover rate. Finally, this paper also selects the shareholding concentration as a control variable.

2.4   Model Building

This paper studies the relationship between asset-light and the financial performance of enterprises. Based on previous literature, with the return on net assets as the dependent variable, the degree of asset-light operation as the independent variable, and four control variables added at the same time, the following multiple linear regression model is established:

$$ROE = \alpha + \beta_1 LATit + \beta_2 GROWit + \beta_3 TATit + \beta_4 LEVit + \beta_5 MANit + \gamma$$

3   Empirical Analysis

3.1   Descriptive Statistics

Table 1. Descriptive charts

Vari	sam	ave	med	std	mini	max
ROE	150	0.098	0.104	0.049	0.003	0.198
LAT	150	0.053	0.092	0.473	-0.960	0.923
GROW	150	0.189	0.112	0.636	-0.771	2.108
TAT	150	0.680	0.652	0.197	0.383	1.074
LEV	150	0.365	0.331	0.135	0.168	0.636

As shown in the table 1 above, among the selected pharmaceutical enterprises, the maximum value of the return on net assets (ROE) is 0.198, and the minimum value is 0.003. There is a relatively large difference in the return on net assets. The mean value of the degree of asset-light operation, the independent variable, is 0.053, and the standard deviation is 0.473. There are significant differences in the level of asset-light operation among enterprises. Among the control variables, the standard deviation of the net profit growth rate of enterprises is relatively large, indicating that there are significant differences in growth opportunities among companies, while the standard deviations of the other control variables are relatively small.

3.2   Analysis of Regression Results

Judging from the regression results in the following table 2, the R² value of Model 1 is 0.702, indicating that the model has a good fitting effect. Considering the time effect, from the perspective of coefficient significance, the data of the independent variable is highly significant. The degree of asset-light operation has a significant positive impact on the dependent variable ROE at the 1% level, which means that an increase in the degree of asset-light operation of pharmaceutical enterprises will significantly boost the return on net assets of the company and is conducive to improving the financial performance of the enterprise. When pharmaceutical enterprises invest their core resources in high value-added and high-return aspects such as research and development, brand building, marketing channels, and market promotion, they will achieve higher profits and it will be beneficial to the improvement of the enterprise's financial performance.

On the other hand, the more asset-light resources a pharmaceutical enterprise has, the lower the cost will be compared with heavy assets, and the asset liquidity will also be improved. Therefore, the hypothesis put forward earlier has been verified. The degree of asset-light operation has a significant positive impact on the financial performance of the enterprise.

Table 2. Regression results

variable	(1) ROE	(2) ROE
LAT	0.093***	0.080***
	(14.28)	(12.64)
GROW		0.002
		(0.60)
TAT		0.059***
		(4.89)
LEV		-0.051***
		(-2.88)
MAN		0.055***
		(3.12)
Constant	0.061***	0.022
	(9.30)	(1.56)
YEAR	control	control
Observations	150	150
R-squared	0.595	0.702
F	42.25	36.64

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.3   Robustness Test

In order to verify the reliability of the research results in this paper, a robustness test has been conducted. Based on references from relevant literature, this paper selects the return on assets (ROA) instead of the return on net assets (ROE) as the dependent variable of the model for further verification and re-runs the regression on the model. According to the regression results, except that the significance of individual control variables has changed, the rest of the data are basically stable, and the obtained results are also consistent with the expected hypothesis. There is a positive correlation between the degree of asset-light of pharmaceutical enterprises and their financial performance. The higher the degree of asset-light, the more conducive it is to the improvement of the financial performance of enterprises. The hypothesis in this paper is thus validated.

4   Conclusions

Through empirical analysis, this paper concludes that there is a positive correlation between the degree of light assets in pharmaceutical companies and their financial performance. Upon in-depth research, we found that the light asset operation in the pharmaceutical industry has some potential issues, such as low outsourcing degree and quality risks in low value-added segments, as well as a tendency for companies to become overly dependent on contractors. In response, we suggest that companies should explore talent from various aspects to improve their technological capabilities, firmly grasp core technologies, and seek multiple contract manufacturers. At the same time, companies should focus on the development of their core businesses to enhance market competitiveness.

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